

+ Going Forward +

Join us on a journey that began in 1802 – find out how we become better every day, creating value for our customers, for our people, for our society.

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Letter to our stakeholders: Good progress in first year of Sustainability Framework 2025

Dear stakeholders,

GF remains steadfast in its vision to become a sustainability and innovation leader providing superior customer value – be it by enabling the safe and sustainable transport of water and gas, empowering sustainable mobility, or advancing energy-efficient and clean manufacturing. In addition to focusing on its own sustainability impact, the company also supports customers on their own sustainability journey. In 2021, products and solutions with social or environmental benefits to GF customers or their users generated 60% of sales. The [success stories from its three divisions](#) show how GF's focus on sustainability-driven market segments is paying off.

The company has made good progress on some of the other targets in its Sustainability Framework 2025:¹ 30% of newly appointed managers in 2021 were women; CO₂e emissions fell by 17% compared to the base year 2019; 34% of GF's procurement spend goes to suppliers who fulfil a comprehensive set of sustainability criteria. To decouple resource consumption from growth, the company started to identify business opportunities using the circular economy approach.

During the year under review, GF launched several initiatives, including the development of comprehensive science-based targets covering scope 1, 2 and 3 emissions. GF used the Greenhouse Gas Protocol Corporate Standard to calculate its scope 3 GHG emissions, which the company does not directly control but indirectly affects through its value chain.

As part of the Annual Report 2021, GF published an extensive report² according to the requirements of the Task Force of Climate-related Financial Disclosure (TCFD). This reports details the company's exposure to physical risks and identifies several transition risks and opportunities to transition to a low-carbon economy.

The Board of Directors' Sustainability Committee and the Corporate Sustainability Council continue to drive sustainability to new heights. The Sustainability Committee oversees the comprehensive set of environmental, social and governance (ESG) objectives in the Executive Committee's annual performance evaluation. In November, the Board took a week-long deep dive into sustainability as part of its visit to US customers and GF facilities; it confirmed the measures and initiatives to meet the company's sustainability goals by 2025.



Andreas Müller, CEO

All GF employees contributed substantially to the successful implementation of the company's strategy and its sustainability approach. We thank them once more for their dedication.

I invite you to read more about these and other topics in the Sustainability Report 2021 for a complete view of all our activities.



Andreas Müller

CEO

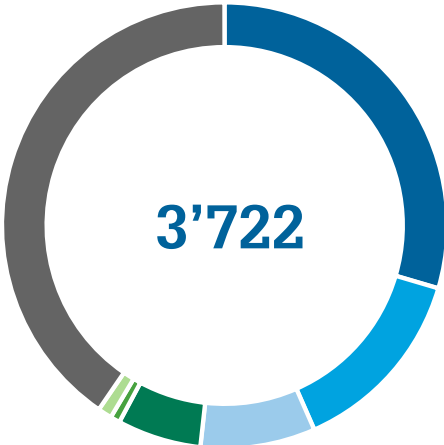
[+ GRI 102-14](#)

¹ [Sustainability Framework 2025 – GF's sustainability targets – Georg Fischer Ltd](#)

² [TCFD Report – Annual Report 2021 \(georgfischer.com\)](#)

Economic performance indicators

2021 sales with social or environmental benefits in CHF million



- 30% Mitigating climate change
- 14% Conserving water
- 8% Promoting safety
- 6% Ensuring health
- 1% Delivering education
- 1% Sustainable buildings
- 40% No direct or substantial impacts

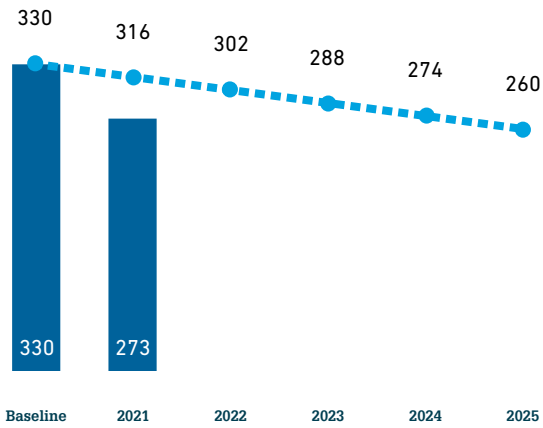
2021 sales with social or environmental benefits % of total sales

60

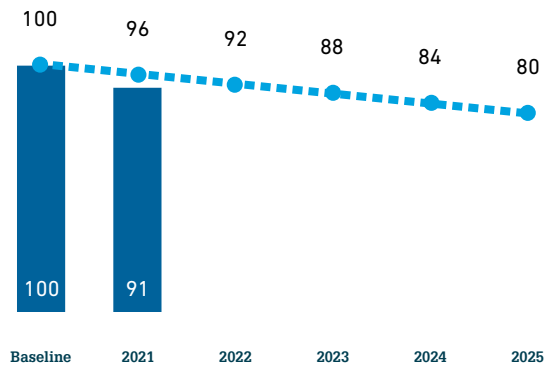
Examples of identified benefits include but are not limited to: ensuring safe and hygienic potable water in buildings; safe and leak-free distribution of gas and chemicals to ensure less human and environmental accidents; light metals components, including components for electric or plug-in hybrid vehicles, helping to reduce the weight and CO₂ footprint of vehicles; solutions for our machining customers to produce their products in a more energy-efficient way.

Environmental performance indicators

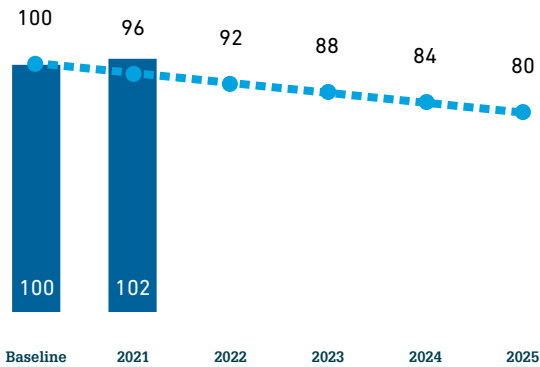
CO₂e emissions (scope 1 and 2)
In 1'000 tonnes



Unrecycled waste intensity index
(unrecycled waste per production volume) in %



Water intensity index
(water consumption per production volume) in %

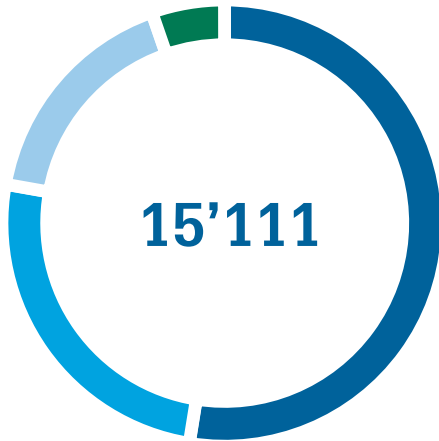


Conducted sustainability assessments of key suppliers
in % of procurement spend

34

Social performance indicators

Employees by region
Headcount



- 53% Europe
- 25% Asia
- 17% Americas
- 5% Rest of world

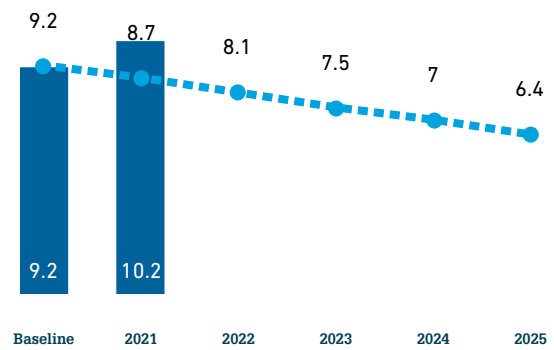
Newly appointed women managers
in %

30

Accident rate as lost time injury frequency rate (LTIFR)
per 1 million working hours

10.2

Accident rate as lost time injury frequency rate (LTIFR)
per million hours worked



Rankings

CDP ranking

In December 2021, the London-based CDP rating agency awarded GF an A– rating (leadership level) for its efforts with regard to climate change and water security. The management of environmental and climate impacts is anchored in GF's Sustainability Framework 2025.

In the 2021 CDP reporting cycle¹, GF implemented approximately 24 measures worldwide to reduce greenhouse gas emissions. However, due to COVID-19 restrictions, only smaller projects could be completed. Nevertheless, combined with the purchase of renewable electricity, GF's projects prevented 21'000 metric tons of CO₂e emissions in 2021

S&P CSA

[S&P Global's Corporate Sustainability Assessment](#) (CSA) is an annual evaluation of companies' sustainability practices. It covers over 5'300 companies from around the world. The CSA focuses on sustainability criteria that are both industry-specific and financially material. In 2021, GF obtained an overall score of 60% and falls in the 88th percentile as of 20 November 2021. The global average score is 28%.

EcoVadis

GF Piping Systems and GF Casting Solutions were reassessed by EcoVadis for their performance on criteria relating to the environment, labor and human rights, ethics, and sustainable procurement in 2021. Both divisions achieved a silver medal, which places them among the top 25% of companies assessed by EcoVadis.

Ticker/Valor symbols

Telekurs, Dow Jones (DJT): FI-N

Reuters: FGEZn

Listing

Zurich, Switzerland: SIX Swiss Exchange ISIN: CH0001752309 Sustainability indices member: SXI Switzerland Sustainability 25^{®2} and Ethibel EXCELLENCE Investment Register³

+ GRI 102-7 | GRI 102-12 | GRI 201-1 | GRI 302-1 | GRI 302-4 | GRI 403-9

¹ The CDP 2021 reporting cycle covers activities from 2020.

² The [index](#) represents the top 25 companies ranked as most sustainable out of the SMI expanded index based on an assessment conducted by an independent sustainability rating agency.

³ The independent Belgian agency [Forum ETHIBEL](#) reconfirmed GF for inclusion in the Ethibel EXCELLENCE Investment Register effective 08/05/2020, indicating that the company's sustainability performance is better than its sector average.

Corporate profile

GF – with its three divisions GF Piping Systems, GF Casting Solutions, and GF Machining Solutions – offers products and solutions that enable the safe transport of liquids and gases, as well as lightweight casting components and high-precision manufacturing technologies. As a sustainability and innovation leader, GF strives to achieve profitable growth while offering superior value to its customers for more than 200 years. Founded in 1802, the Corporation is headquartered in Switzerland and present in 34 countries with 139 companies, 61 of which are production facilities. GF's 15'111 employees worldwide generated sales of CHF 3'722 million in 2021.



GF Piping Systems

As the leading flow solutions provider for the safe and sustainable transport of fluids, GF Piping Systems creates connections for life. The division focuses on industry-leading leak-free piping solutions for numerous demanding end-market segments. Its strong focus on customer-centricity and innovation is reflected by its global sales, service, and manufacturing footprint and its award-winning portfolio, including fittings, valves, pipes, automation, fabrication, and jointing technologies.



GF Casting Solutions

GF Casting Solutions is one of the leading solution providers of lightweight components in the mobility and energy industries. As a future-oriented company, GF Casting Solutions acts as a driving force for innovation in the foundry and additive manufacturing world and aims to take the lead in developing and manufacturing innovative and energy-efficient lightweight solutions, empowering sustainable mobility.



GF Machining Solutions

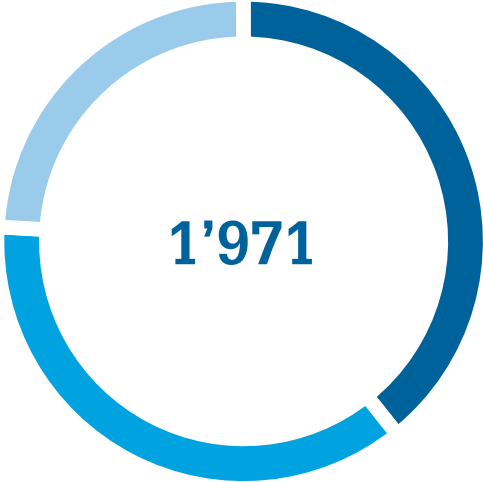
GF Machining Solutions is one of the world's leading providers of complete solutions for precision components and tools manufacturers, and the mold-making industry. The portfolio includes milling, EDM, laser texturing, laser micromachining, and additive manufacturing machines. Additionally, the division offers spindles, automation, tooling, and digitalized solutions backed by unrivaled customer services and support. With its solutions, the division advances energy-efficient and clean manufacturing.

**GF Corporation sales
in CHF million**



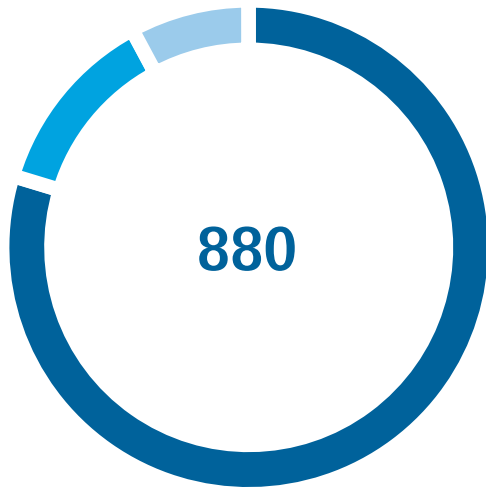
- GF Piping Systems
- GF Casting Solutions
- GF Machining Solutions

**GF Piping Systems sales per segment
in CHF million**



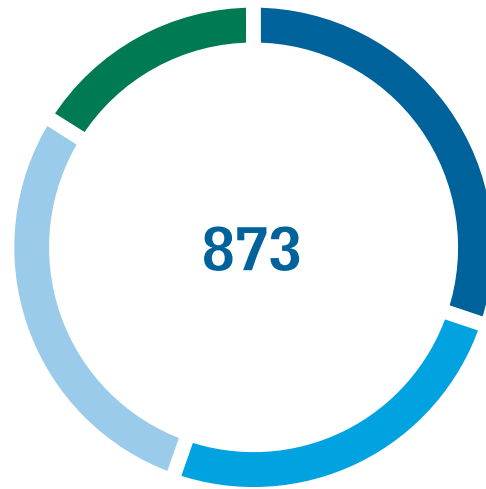
- 39% Industry
- 37% Utility
- 24% Building Technology

**GF Casting Solutions sales per segment
in CHF million**



- 80% Automotive
- 12% Industrial Applications
- 8% Aerospace/Energy

**GF Machining Solutions sales per segment
in CHF million**



- 30% Customer Service
- 25% Milling
- 29% EDM
- 16% Advanced Manufacturing/Automation & Tooling

Worldwide presence

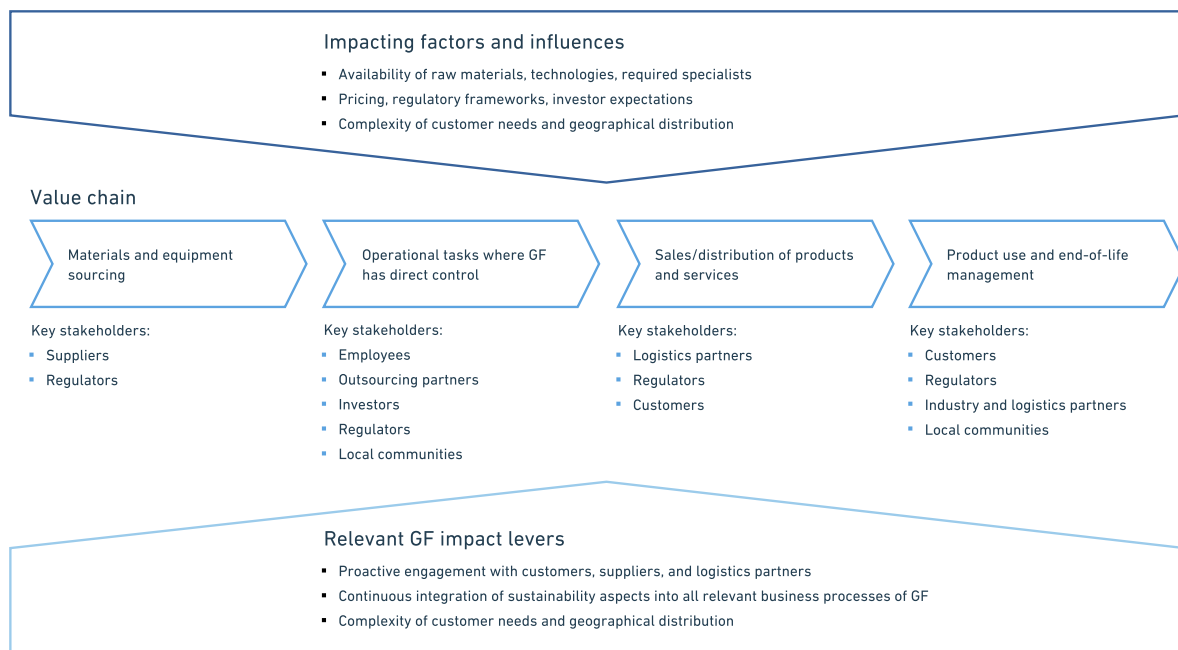
[+ Download the PDF version of the GF world map](#)

[+ GRI 102-2](#) | [GRI 102-3](#) | [GRI 102-4](#) | [GRI 102-6](#) | [GRI 102-7](#)

Value chain

Sustainability is an integral part of GF's strategy, corporate culture and business. GF acknowledges that its role and responsibility in society extend beyond fulfilling the needs of our customers and include a broad range of stakeholders.

GF's value chain at a glance



GF addresses the wide spectrum of sustainability topics in all steps of its value chain. The company contributes to various [Sustainable Development Goals \(SDGs\)](#)

Materials and equipment sourcing

GF engages with many different types of suppliers. Key suppliers are (raw) material suppliers, e.g. for plastics, aluminum, magnesium or iron, and electronic component manufacturers. Furthermore, GF cooperates with material recovery and trading companies. Suppliers are located in all countries where the company operates, including Canada, China, the DACH region, France, Italy, Turkey and the USA.

GF's decisions in designing solutions for its customers have direct implications for its supply chain, from a social and environmental perspective. GF recognizes this and [works to increase transparency](#) in its complex purchasing network and to engage with its business partners to ensure adherence to GF's standards and expectations. By the end of 2021, GF had conducted sustainability assessments on 34% of its procurement spend, representing approximately 300 new and existing key suppliers.

Operational tasks over which GF has direct control

[Good corporate governance](#) lays the foundation for how GF conducts business. GF's over 200-year history is built on customer-centricity and respect for the people who run and sustain its operations. GF strives to deliver superior quality and to create added value for customers while staying abreast of technological developments, innovating, and evolving with the times.

The GF organization brings together a wide range of businesses and cultures. Consequently, it fosters a respectful, engaging, inclusive and affirming work environment for its diverse family of employees.

Being an industrial company gives GF crucial responsibilities: to apply rigorous safety standards at its facilities, to embrace continuous improvement and to do its utmost to operate accident-free. GF therefore places strong emphasis on embedding safety into every one of its facilities worldwide. It also invests continually to upgrade its production and office locations to make them more efficient and prevent adverse environmental impacts.

[+ More information in the chapter: Health and safety](#)

Sales/distribution of products and services

[Sustainability is engineered into the solutions](#) GF designs for its customers. The company [continuously engages with customers](#) to understand their needs, as well as to meet or even exceed their expectations for suppliers' social and environmental performance. The company also strives to [optimize its logistics processes](#) to be more convenient for customers and environmentally friendlier.

In 2021, for the first time, GF calculated its scope 3 GHG emissions according to the Greenhouse Gas Protocol Corporate Standard. These emissions result from activities that GF does not directly control but which it indirectly impacts through its value chain. The assessment concluded that scope 3 emissions represent the majority (86%) of GF's total GHG emissions.

[+ More information in the chapter: GHG emissions](#)

Product use and end-of-life management

GF's products add value for customers by offering high-value sustainable products and solutions, reducing their pain points and meeting their sustainability needs during the use phase. At the same time, the company is also continuously working on incorporating considerations for what happens with GF's products at the end of their useful life into its R&D processes. In 2021, GF initiated a circular economy project featuring a series of workshops to develop a common understanding of [circular economy](#) and concepts to promote its adoption. The workshops conceived and defined new pilot projects covering how GF designs, repairs and re-manufactures its products. GF will implement these projects throughout 2022.

[+ More information in the chapter: Waste](#)

[+ GRI 102-9 | GRI 102-42](#)

Good governance

As an international industrial corporation, GF is at home in different countries and markets. Wherever GF operates, it complies with the applicable laws and regulations. The company firmly believes that good corporate governance and ethical conduct are essential for lasting and sustainable success.

With this understanding, GF works diligently to meet the expectations of its stakeholders, who have identified “business ethics and compliance” as a highly material topic for GF. Further information can be found in GF’s latest [materiality assessment](#).

Business conduct

GF’s [Strategy 2025](#) and way of conducting business are founded on its values and its purpose: “Becoming better every day – since 1802”. They shape and embody the philosophy and spirit of GF in its daily work for the benefit of its stakeholders. GF’s purpose expresses the organization’s ambition and motivation to continually improve for the benefit of the company, its customers and the environment.

Our three new values

- + Performance is about speed and excellence.
- + Learning is about having an open mind.
- + Caring is about being part of a team.



[These values](#) have been translated into a set of standards for ethical conduct and integrity. These standards, which underpin GF's corporate culture, are articulated in the [Code of Conduct](#). The code delineates GF employees' rights and responsibilities regarding a wide range of topics, the overarching principles of GF business activities (including – but not limited to – compliance, risk management, sustainability and the avoidance of conflicts of interest), the rules for safeguarding of GF's property and handling data and information, and how GF deals with potential code violations.

Published in 18 languages, the Code of Conduct is binding for all GF employees worldwide and forms an integral part of each employment contract. It is supported by company policies and regulations at the corporate and local levels, which provide more detailed guidance for daily operations.

Corporate governance

The Board of Directors and the Executive Committee are GF's highest management bodies. [They attach great importance to good corporate governance](#). The implementation of generally accepted principles of corporate governance ensures a sufficient degree of oversight, strategic and tactical management of the company and its entities, as well as transparent communications with stakeholders.

The Board of Directors is responsible for monitoring GF's management, for determining its strategic direction, and for financial and accounting policies. The three board committees (Audit Committee, Nomination and Sustainability Committee, and Compensation Committee) do preparatory work on these topics for the Board of Directors as a whole.

The Executive Committee addresses all issues of relevance to the company, makes decisions within its purview, and submits proposals to the Board of Directors. The Chief Executive Officer, the Head of Corporate Development and the Head of Corporate Finance & Controlling make up the Corporate Center and support the Board of Directors in meeting its responsibilities.³ For the roll-out of the Sustainability Framework 2025, GF established a Corporate Sustainability Council (CSC) at the Executive Committee level in 2021. The CSC coordinates and steers all sustainability-related activities and advises the Executive Committee. In addition, GF strengthened the divisional sustainability teams in 2021 by establishing several new positions, such as that of the Sustainability Business Development Manager.

- + [More information in the chapter: Sustainability at GF](#)
- + [More information in the TCFD Report \(Annual Report 2021\)](#)

In the interests of its stakeholders, Georg Fischer Ltd, the Holding Company of the GF Corporation, which is organized in accordance with Swiss law, fulfils all obligations under the guidelines of SIX Swiss Exchange with regard to information on corporate governance.

- + [More information in the chapter: Board of Directors \(Annual Report 2021\)](#)
- + [More information in the Compensation Report \(Annual Report 2021\)](#)

Public policy

GF is a member of industry-relevant organizations in its home base, such as *economiesuisse* and *Swissmem*. They represent the company's interests in political and economic matters. Annual membership fees in these organizations amount to less than CHF 100'000. In the year under review, no contributions were made to any political parties or individual politicians.

Risk management

The Board of Directors and the Executive Committee attach great importance to the thorough handling of risks in the areas of strategy, finance, markets, management and resources, operations, and sustainability. The Head of the Service Center Risk Management & Tax acts as the Chief Risk Officer (CRO) and, in this function, reports directly to the CEO. The CRO is supported in this task by a Risk Officer from each of the three divisions. Supplemented by internal risk management experts, the risk officers under the leadership of the CRO constitute the Corporate Risk Council that met once during the year under review.

In addition, the CRO conducted workshops with the management of the three divisions as well as with the Executive Committee to analyze the risk situation, discuss measures to mitigate the risks, and define the actual top risks of each unit. The results of these discussions were presented to the Board of Directors during its risk management workshop in November 2021. The purpose of this workshop was also to define the main risks to the GF Corporation from the perspective of the Board of Directors and to compare these with the risk assessment of the Members of the Executive Committee. The outcome of this workshop and the measures adopted to reduce or control the risks were summarized in the Risk Report 2021, which was approved by the Board of Directors in December 2021.

More generally, the Board decided to extend the Audit Committee Charter to overall risk management in order to deepen this topic at the Board level. The handling of financial and operational risks is explained in the notes to the consolidated financial statements in note [3.6 Risk management of the GF Annual Report](#).

Corporate compliance

Internal Audit and the Chief Compliance Officer (CCO) monitor compliance with the applicable laws and guidelines worldwide as well as with business ethics standards. The CCO reports to the General Counsel or, where necessary, directly to the CEO. The CCO's task as a member of the Corporate Risk Council is to ensure that risk management is given appropriate importance within the organization.

In addition, employees are required (and business partners are encouraged) to report potential misconduct to the CCO by calling him or writing to a special compliance e-mail address, contacting the Legal department in Schaffhausen (Switzerland), or sending the report anonymously. A corporate instruction delineates the procedure that employees follow for reporting such violations and governs the conduct of persons receiving the report. Proven misconduct is subject to appropriate sanctions.

In 2021, GF replaced its existing whistleblowing system with an ISO 27001-certified solution. With the new [GF Transparency Line](#), GF implemented an EU directive for the increased protection of whistleblowers seeking to draw attention to actual or possible wrongdoing in the company (e.g., fraud, theft, sexual harassment, discrimination or disregard for security regulations). All of the Transparency Line's data and processes run outside of GF's IT infrastructure to ensure they are not accessible by GF. Therefore, via this channel, users can submit issues securely

and, if desired, anonymously. Available in nine languages, the GF Transparency Line is accessible to all GF employees and third parties.

Compliance training is carried out under the direction of the CCO at the corporate companies by means of e-learning or in person. Supported by the CCO, the Executive Committee determines the focus topics. In 2021, over 5'600 in-house compliance training sessions included an e-learning program on:

- anticorruption/anti-bribery
- antitrust/competition law
- export controls/sanctions
- data privacy (including the General Data Protection Regulation, or GDPR).

There was also on-site training at companies in the EU, China, and the United States, and for specific employees with compliance roles.

Training is ongoing. Employees are required to undergo training upon joining GF and again every three years afterwards. In addition, the Legal department offers one-on-one meetings to senior managers visiting Schaffhausen from other locations to provide them, on request, with general as well as specific legal advice and training. In 2021, due to pandemic-related travel restrictions only two senior managers were able to receive such training.

GF has implemented the following measures to enhance its compliance function:

- regular performance checks of the GF Compliance Agreement for Intermediaries" to secure and prove compliance of GF business partners who act on behalf of or in the interests of GF companies;
- introduction of a web-based system to avoid conducting business with sanctioned organizations and individuals (ongoing process); and
- on-site compliance agents to identify and assess compliance risks, carry out initial cursory internal compliance controls and support the identification and implementation of appropriate new measures.

[+ More information on corporate compliance in the chapter: Board of Directors \(Annual Report 2021\)](#)

Tax management

GF recognizes that administration and payment of taxes forms an integral part of each company's responsibility to a functioning society. GF is committed to responsible tax governance and

- following all applicable laws and regulations relating to its tax activities;
- maintaining a transparent and honest relationship with the tax authorities based on collaboration and integrity;
- applying diligence and care in its management of the processes and procedures by which all tax related activities are undertaken, and ensuring that the corporation's tax governance is appropriate; and
- using incentives and reliefs to minimize the tax cost of conducting its business while ensuring that these reliefs are not used for purposes that are knowingly contradictory to the intent of the legislation.

The GF Tax Policy is a Board directive that presents the foundation on which GF bases its tax activities, including the information on the corporation's tax governance structure and risk management process. GF's Executive Committee and Audit Committee discuss and assess the company's tax position and tax development at least once a year and present the results to the Board of Directors. This process ensures that all tax activities are planned and executed in line with the GF Tax Policy.

GF's tax results and disclosures are part of the annual half-year and year-end results and are audited semi-annually by an external auditor.

The company also carries out annual tax surveys across all group companies to ensure compliance with the GF Tax Policy and detect any adverse conduct. In these surveys, any tax risks and uncertain tax positions must be disclosed.

The results are assessed centrally, and, if necessary, the company takes appropriate measures in accordance with the GF Tax Policy.

In addition, GF also engages with its stakeholders on tax-related issues. For example, the company participates in various organizations involved with tax policies and international tax developments, such as its membership and participation in the SwissHoldings association. This activity promotes exchanges with other groups and tax authorities and ensures that GF recognizes any relevant changes within the tax environment and implements them accordingly. By doing so, the Corporation maintains strict compliance with the GF Tax Policy, is transparent and open in its decisions, governance and tax planning and follows all applicable laws and regulations.

[+ GF Tax Policy](#)

Human rights

GF believes human rights to be the fundamental rights, freedoms and standards to which every human being is entitled. Respect for human rights is firmly rooted in GF's core values. The company therefore upholds international human rights principles including the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, the International Labor Organization (ILO) Conventions, and the applicable laws of the jurisdictions in which it operates.

GF's [Corporate Human Rights Policy](#) is the foundation on which GF bases its actions and outlines processes to avoid any potential human rights issues associated with its supply chain or products.

[+ More information in the chapter: Supply chain](#)

To underscore its commitment to responsible business conduct and respect for human rights, GF has been a signatory of the UN Global Compact (UNGC), the world's largest sustainability network for companies and organizations, since 2015. Its commitment to the UN Global Compact's 10 principles for human rights, labor, the environment, and anti-corruption is reaffirmed on an annual basis through the "[Communication on Progress](#)" report. In addition, the guidelines for multinational companies issued by the Organization for Economic Cooperation and Development (OECD) as well as the agreements of the International Labor Organization (ILO) form the basis for GF's understanding of corporate responsibility.

Digital responsibility

To date, GF has already implemented various Corporate Instructions, which outline the management of IT security and data privacy. The first step in defending GF from a cybersecurity attack is to ensure that its employees are aware of the dangers of such an attack and know how to deal with fraudulent emails or phishing attacks. To avoid such risks, GF launched a state-of-the-art cybersecurity awareness training in 2021 for all employees with e-mail addresses.

GF established a centralized Chief Information Officer (CIO) organization, which includes a specialized IT security team headed by a Chief Information Security Officer (CISO). The latter is responsible for ensuring adequate security standards and measures to avoid or mitigate cyber threats globally across all IT platforms. The CIO reports directly to the Head Corporate Strategy, M&A and IT. Similarly, GF appointed a Data Protection Officer (DPO) reporting to the Chief Compliance Officer and responsible for all data privacy related topics.

GF has also developed a digital responsibility policy that will be published in 2022. The digital responsibility policy will be the foundation on which the Corporation will base its digitalization efforts. The policy will apply to all companies in the GF group. GF complies with legal requirements in the jurisdictions where it operates in addition to Corporation-specific regulations, standards, GF's Code of Conduct and the Code for Business Partners. This policy will aim to incorporate not only governance, transparency and data protection issues, but also include topics related to artificial intelligence (AI), sensitive activities, as well as the social and environmental impacts of digitalization. At

present, GF does not yet apply AI related systems and processes. Once it does implement AI, the focus would be to improve process quality and the working environment of employees.

Environmental protection

GF is committed to protecting the environment and using natural resources carefully and efficiently. Its actions are guided by the precautionary principle, in which GF actively works to identify and prevent any risks associated with its products or processes. To reduce its impact on the environment, GF aims to decouple its resource consumption from growth. The company is committed to finding opportunities to continuously improve its environmental management processes and expects the same of its suppliers.

When developing its products and solutions, GF considers their environmental impact along the entire life cycle. It therefore integrates environmental aspects into business decisions starting with the R&D phase and along GF's value chain.



The GF Corporate Environmental Policy outlines GF's environmental management activities, whereas the GF Corporate E-mobility Policy aims to transform the company's global vehicle fleet toward alternative drive trains.

GF is not aware of any material fines or non-monetary sanctions with environmental laws and regulations that took place during the reporting period. GF can confirm that no fines or non-monetary sanctions related thereto were imposed on it in 2021.

[+ GF Corporate Environmental Management Policy](#)

[+ GF Corporate E-mobility Policy](#)

The divisions have dedicated working groups that address issues relating to GF products' environmental, health, and safety standards. These groups are responsible for monitoring new regulations and trends, defining necessary company processes and ensuring they are implemented, conducting relevant training, and supporting customer inquiries.

Product and service information and labeling

GF complies with all relevant laws and regulations regarding product safety, labeling and information provided to its customers. This includes but is not limited to:

- enclosing the CE and RoHS labels, when relevant;⁴ and
- providing customers, where required or at their request, with information regarding conflict minerals (as defined by the Dodd-Frank Act) and the presence of substances of very high concern in products (as defined by REACH).⁵

[+ GF Corporate Conflict Minerals Policy](#)

The divisions have dedicated working groups that address issues relating to GF products' environmental, health and safety standards. These groups are responsible for monitoring new regulations and trends, defining necessary company processes and ensuring they are implemented, conducting relevant training and supporting customer inquiries.

+ [GRI 102-11](#) | [GRI 102-12](#) | [GRI 102-16](#) | [GRI 102-17](#) | [GRI 205-2](#) |
[GRI 207-1](#) | [GRI 207-2](#) | [GRI 207-3](#) | [GRI 307-1](#) | [GRI 403-7](#) | [GRI 415-1](#) | [GRI 417-1](#) | [GRI 419-1](#)

³ The Annual Report 2021 contains more detailed information about [GF's governance bodies](#). For detailed information on sustainability governance, see [Sustainability at GF](#).

⁴ Conformité Européenne (CE) indicate conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). RoHS indicates conformity with the EU's Restriction of Hazardous Substances Directive.

⁵ Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) is an EU regulation. It addresses the production and use of chemical substances, and their potential impacts on both human health and the environment.

Sustainability management at GF

GF believes that sustainability and business are very closely linked. Therefore, in line with the growing importance of sustainability in its business activities, GF declared 2021 “the year of sustainability”. The strategic priority of sustainability in the company is reflected in GF’s governance structure and overall approach to sustainability management.

Governance

The ultimate responsibility for sustainability at GF lies with the **Board of Directors**. In 2020, GF formed a **Sustainability Committee** to support the Board of Directors in strengthening its focus on environmental, social, and governance (ESG) topics. The Sustainability Committee is embedded in the Nomination Committee. The Charter of the Nomination and Sustainability Committee stipulates that regular meetings must be held at least twice a year. In 2021, the committee met on three occasions. The committee's agenda mainly focuses on GF's sustainability initiatives (such as the implementation of the EU Taxonomy, the SBTi, or the TCFD disclosures) and GF's eight sustainability goals for 2025. GF's overall progress is measured against a predetermined timeline and the strategy cycle of 2025.

The Sustainability Committee also has the essential role of ensuring that executive remuneration is linked to ESG targets and aligns with the eight goals of GF's [Sustainability Framework 2025](#). As a result, each Executive Committee member has GF's company-wide CO₂e target as a remuneration incentive. In addition, they also have individual targets such as the zero-accidents campaign, circular economy benchmarks, or the target to implement the TCFD's recommendations and publish GF's first [TCFD report in March 2022 as part of its Annual Report](#).

The **Executive Committee** has a direct overview of GF's progress on reaching the strategic goals and targets. In addition, the Executive Committee conducts performance reviews between two and four times per year and within each division's management meetings. These reviews enable the Executive Committee to take the required strategic and operational actions to ensure GF's target achievement remains on track.

For the roll-out of the Sustainability Framework 2025, GF established a **Corporate Sustainability Council (CSC)** at the Executive Committee level. The CSC coordinates and steers all sustainability-related activities. It is headed by the CSC Chairwoman, who advises the Executive Committee. The CSC consists of the CEO, CFO, Divisional Presidents, corporate and divisional sustainability teams, and high-level members of management.

The CSC's key responsibilities include the reporting and tracking of progress and measures regarding the Sustainability Framework 2025; supporting the Executive Committee on deciding on cross-divisional strategic sustainability projects and initiatives; coordinating and supervising projects and initiatives, and reporting their progress to the Executive Committee. The CSC meets at least twice every year. At the first council meeting on 4 October 2021, members exchanged ideas on how to:

- reduce GF's CO₂e emissions by committing to the SBTi (Science Based Targets initiative), implementing energy-saving measures, and purchasing renewable energy;
- innovate sustainable products and solutions by following the EU Taxonomy regulations and the principles of a circular economy;
- report on climate-related risks and opportunities by following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD); and
- foster greater diversity and inclusion at GF.

In addition, GF's divisions also presented insights into their innovations, progress, and strategies in the area of sustainability. From 2022 onwards, the CSC is expected to meet twice a year with the possibility of additional meetings as required.

All departments and divisions are responsible for continuously integrating aspects of sustainability into GF's daily activities, thus helping to achieve the targets set out in the Sustainability Framework 2025. The topic is coordinated at the corporate level by the **Corporate Sustainability Team (CST)**. The CST is positioned within the Corporate Finance organization and led by the Head of Investor Relations & Sustainability.

The Head of Sustainability Transformation leads key strategic, cross-functional sustainability-related projects and initiatives. The Head of Corporate Sustainability participates in the Sustainability Committee meetings and is a member of the Corporate Risk Council. He is responsible for sustainability reporting, including engagement with ESG

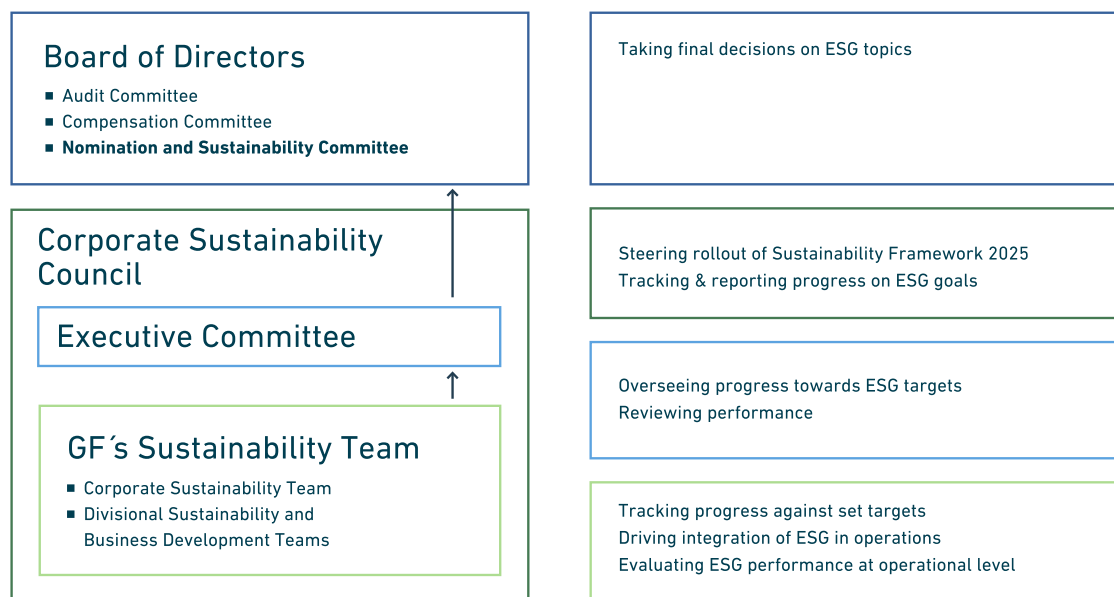
rating agencies. Both the Head of Sustainability Transformation and the Head of Corporate Sustainability report directly to the Head of Investor Relations & Sustainability.

The CST works in close contact with the three divisions' dedicated sustainability teams to track the progress of individual locations, business units and divisions against set targets. The CST is also responsible for raising organizational awareness about sustainability and climate-related risks.

The **divisional sustainability** units evaluate their sustainability performance each quarter and present their respective management teams with the results. The sustainability units review the following aspects: the achievement of sustainability targets and the implementation status of agreed-upon actions; the monitoring of GF's business partners' sustainability performance; and the development and marketing of products and solutions that provide GF's customers with sustainability benefits.

Every year, the divisions determine a set of actions needed to implement the company's sustainability targets. Each divisional sustainability manager ensures their locations define and submit initiatives to meet the set goals, aggregates an overview for their division to track progress, and coordinates with the CST on status, cross-divisional experience-sharing, and, where needed, dispute escalation. For example, in 2021, GF Machining Solutions established a divisional sustainability working group that meets every quarter and brings together key functions and the divisional management team to define the next steps towards target achievement.

GF incentivizes corporate target achievement at various levels. For example, individual goals are defined for the Executive Committee members as well as for the corporate and divisional sustainability teams.



Sustainability strategy

In 2021, GF announced its vision of becoming a sustainability and innovation leader providing superior customer value. GF's sustainability strategy, the Sustainability Framework 2025, will guide GF's sustainability efforts during the current five-year strategy cycle. The Sustainability Framework 2025 is intertwined with GF's [Strategy 2025](#), underlining the clear link between sustainability and business. Further information regarding the strategic goals and targets of the Sustainability Framework 2025 is provided in the chapter [Sustainability Framework 2025](#).

As part of its strategic focus on sustainability, GF's management developed an implementation roadmap for the strategy period 2021–2025. In addition, it focused on strengthening the organizational setup at corporate and divisional levels, as well as launched several sustainability initiatives. For example, as part of the sustainability

focus, GF set short-term incentives for the Executive Committee linked to its achievement of sustainability targets and implemented a range of sustainability initiatives at the site level. In addition, GF certified its newly built Chinese production plants in accordance with the [Leadership in Energy and Environmental Design](#).

Communication on sustainability

To help embed sustainability aspects into GF's daily business, the CST and the divisional sustainability teams communicate with GF employees through various channels. The next global GF sustainability conference will be held in 2022. To reflect GF's increased focus on sustainability, the scope of the conference will be extended to include a more diverse audience that represents GF's global operations. In 2022, the conference will focus on developing a concept that brings together all relevant functions and departments in contributing to the strategic goals of the Sustainability Framework 2025.

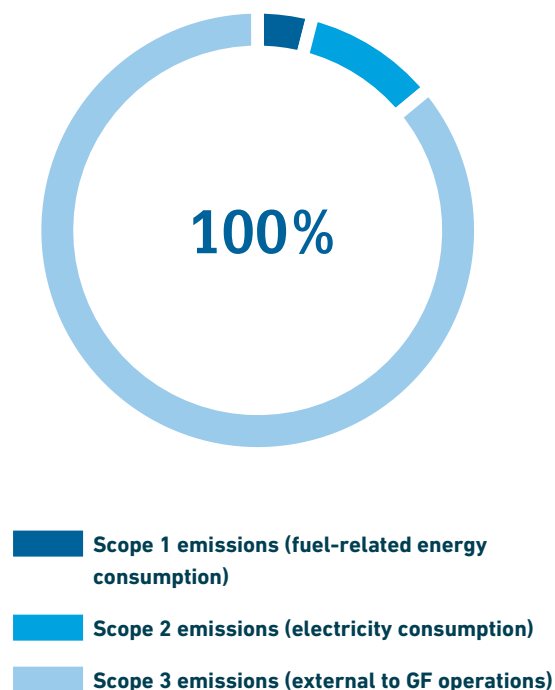
Additionally, the CST worked closely with the divisional teams to organize employee workshops on the Science Based Targets initiative (SBTi) and diversity and inclusion.

Sustainability management progress in 2021

GF continuously monitors international sustainability developments to ensure it integrates relevant issues into its business decisions and processes. In 2021, GF made significant progress regarding science-based targets, the circular economy, climate-related financial disclosures, and the EU Taxonomy.

GF's GHG emissions per scope (2021)

In % of total emissions



Science-based targets

In line with the 2015 Paris Agreement, governments and businesses are working to find practical and effective solutions to significantly limit global warming. Recently, the [IPCC's Sixth Assessment Report](#) reinforced the urgent need to reduce global warming to 1.5°C (as opposed to well below 2°C) above preindustrial levels. To reach this goal, the United Nations Environment Programme (UNEP) has calculated that the world must halve annual greenhouse gas emissions by 2030.⁶

GF firmly believes it has a responsibility to contribute to meeting these goals. It therefore uses the official protocols of the [Science Based Targets initiative \(SBTi\)](#) and is committed to setting a science-based target aligned with the 1.5°C ambition level across all three scopes. In 2021, GF made significant progress. Firstly, it comprehensively recorded all emissions for scope 1, 2, and 3. Across the 15 categories of scope 3 emissions, GF identified two specific categories as material: purchased goods and services, and use of sold products. The emissions from these two categories represent approximately 89% of GF's total scope 3 emissions. The assessment showed that the category purchased goods and services (category 1) is only relevant for GF Piping Systems and GF Casting Solutions due to the nature of their business. The category use of sold products (category 11) is only relevant for GF Machining Solutions.⁷

Secondly, GF identified reduction potentials and targets for its emission scopes across all three divisions. In this context, GF conducted several cross-divisional and cross-functional workshops and interviews with site managers to establish emission-reduction pathways aligned with the SBTi. In this process, GF determined the reduction potential of energy efficiency measures, purchasing renewable electricity, and switching to low-carbon suppliers and materials.

GF found the majority of its GHG emissions are scope 3 emissions created either by suppliers during their manufacturing processes or by customers when using GF's products or solutions. Only 18% of the total GHG emissions are directly emitted by GF.

In 2021, according to the official protocols of the [Science Based Targets initiative \(SBTi\)](#), GF aligned its GHG reduction goals with the Paris Agreement's aim to limit global warming to 1.5°C above preindustrial levels. Accordingly, GF adjusted the target of its Sustainability Framework 2025 to reducing its CO₂e emissions in absolute terms by 21% (scope 1 and 2 emissions) compared to 2019.

GF will submit the targets determined in this process to the SBTi by March 2022. GF is looking forward to officially joining the [group of companies taking action](#) according to the protocols of the SBTi. GF's commitment to the SBTi is an important step on the company's path towards net zero.

✚ [More information in the chapter: GHG emissions](#)

Circular economy as a path to net zero

GF believes it is vital to ensure responsible resource and waste management. It is therefore working to redesign its production processes, find new materials, and create new business cases to close material loops. In addition, reducing waste during the manufacture of GF's products has always been in focus. GF recognizes the concept of a circular economy is an important driver towards achieving a carbon-free economy.

In 2021, GF initiated a [circular economy](#) project featuring a series of workshops where a cross-divisional and cross-functional team, including GF's CFO, developed a common understanding of the approach and concepts to promote its adoption. The team also defined new pilot projects. These projects include new business models, modularity improvements, and product simplification to enable reuse within the material cycle. GF will implement these projects throughout 2022 and beyond.

EU Taxonomy for sustainable activities

The European Commission has set climate and energy targets for 2030 underpinned by an action plan – [the European Green Deal](#) – to make the EU economy climate-neutral by 2050. The Commission considers direct investments in sustainable projects and activities as essential for reaching these targets. Therefore, in June 2020, the EU issued the [EU Taxonomy Regulation](#), a framework that defines the specific types of economic activities that qualify as environmentally sustainable.

In 2021, GF assessed its business activities against the developed EU Taxonomy criteria. The review of eligible activities has been completed for the environmental objectives regarding climate mitigation and climate adaptation. In 2022, GF will extend the assessment to the alignment criteria and the remaining four environmental objectives.

Guidance of the Task Force on Climate-related Financial Disclosures

It has become evident that climate change will have both immediate and long-term impacts on businesses around the world. GF firmly believes that companies that fail to recognize climate-related risks and opportunities and adjust their operations accordingly will ultimately become less competitive. In addition, as more investors become sensitive to the financial impact of climate change on businesses, these companies will also find it harder to access capital.

The [Task Force on Climate-related Financial Disclosures](#) (TCFD) issued a set of recommendations in 2017 to increase the transparency of how companies are addressing climate change. The TCFD's purpose is to help companies provide meaningful climate-related disclosures so that investors can make more informed investment decisions.

In 2021, a key component of GF's TCFD-aligned risk management strategy was a scenario analysis assessing GF's possible climate-related impacts between now and 2050. As a result, GF defined material physical and transition risks and opportunities as a foundation for future risk management, as well as various adaptation and mitigation activities.

With its first index published in 2022, GF is reflecting on the TCFD's growing importance among investors and businesses. GF's TCFD report emphasizes three critical topics: the climate-related opportunities that can help GF remain competitive, the specific physical risks GF is exposed to, and the transition risks facing GF's operations. Full information on GF's climate-related disclosures can be found in GF's first [TCFD report](#). GF's TCFD Report 2022 will focus on the financial quantification of transition risks and opportunities.

Management performance objectives

The compensation applicable to the Board of Directors is reviewed every two to three years based on competitive market practice and its basic structure is kept as constant as possible. The last benchmarking analysis was conducted in 2021. Based on the outcomes of this analysis, the Compensation Committee proposed to the Board of Directors to adjust the fees for the Board Chairmanship, for the Chairmanship of the Compensation Committee and for the Chairmanship of the Nomination & Sustainability Committee. The adjustments were approved by the Board of Directors and have been effective as of the 2021 Annual Shareholders' Meeting.

The short-term incentive (STI) is a variable incentive designed to reward the achievement of business and sustainability objectives of the Corporation and its divisions, as well as the fulfillment of individual performance objectives. The STI is expressed as a target in % of the annual fixed base salary. The target STI amounts to 100% of the annual fixed base salary for the CEO and to 60% of the annual fixed base salary for the other Members of the Executive Committee. The STI payout is capped at 150% of target level.

Sustainability objectives for the STI

Sustainability objectives are based on environmental, social, and governance (ESG) criteria material to the company and its stakeholders. The Corporate sustainability targets – as outlined in the [Sustainability Framework 2025](#) – are specifically reflected in the sustainability roadmaps of the divisions and are well represented in the objective setting of the Executive Committee.

Sustainability objectives are a separate element of the performance measurement accounting for 10% of the STI, and are not part of the individual objectives.

+ [GRI 102-18](#) | [GRI 102-19](#) | [GRI 102-20](#)

⁶ [Emissions Gap Report 2021 | UNEP – UN Environment Programme](#)

⁷ The calculation for category 11 use of sold products for GF Machining Solutions was based on five representative machines, services for the machines are excluded.

Stakeholder dialogue

GF maintains a continuous dialogue with its internal and external stakeholders to proactively recognize and resolve key issues. It promotes this ongoing exchange through a range of activities, events and initiatives.

Much of GF's business success relies on understanding the needs of its stakeholders. The following chapter lists these main stakeholder groups, their significance to GF and the formats through which it maintains this dialogue.

Employees

GF's more than 15'000 employees in 34 countries are crucial for the business's success, as GF can only make progress through their work, motivation, and commitment. They are GF's source of success and continually challenge the company to deliver the most sustainable solutions.

GF maintains a continuous dialogue with its employees and believes it is essential to engage with them in implementing the Strategy 2025. GF has therefore developed a framework for an even more positive and inclusive corporate culture. This is designed to support the achievement of the goals outlined in the strategy and unlock each employee's full potential and that of the entire organization. GF communicates the new values of the corporate culture to employees as part of the Culture Movement process. Via this initiative, GF will bring these values to life and integrate them into employees' daily work.

In addition, each division conducts employee satisfaction surveys. In 2022, GF is planning a group-wide survey that will cover all three divisions and will include questions regarding the Strategy 2025 and the Culture Movement.

[+ More information in the chapter: Employee engagement](#)



Customers

GF aims to deliver sustainable and innovative products, solutions and services that best meet its customers' needs. GF therefore continuously asks its customers for feedback and involves them in product development processes. For example, in key market segments, GF conducts sustainability workshops with its customers, such as on how to design sustainable products that reduce waste for end users. GF recognizes its customers as a clear source for innovations.

GF's product and solution specialists cultivate lasting customer loyalty by maintaining close working relationships. GF participates in trade fairs, organizes in-house and virtual events, and offers customers individually tailored training sessions.



Investors

Sustainability, which covers areas such as climate change, greenhouse gas (GHG) emissions and their reduction potential, the circular economy, and diversity and inclusion, has become of key importance to GF's investors. It is therefore essential to maintain an active exchange with investors and transparently communicate all relevant financial and non-financial (ESG) information.

GF's CEO and CFO, its Head of Investor Relations & Sustainability, as well as the Chairman of the Board of Directors are in regular contact with investors – both in person and virtually – at roadshows, events, and meetings, including the GF Annual Shareholders' Meeting. They also maintain an active ESG dialogue with sustainability analysts and stewardship teams. In addition, GF's sustainability team responds to around 15 ESG rating agencies or questionnaires per year, which also helps investors to make informed decisions. In 2021, GF maintained its governance dialogue with its shareholders and proxy advisors. The Corporation held around 100 meetings with investors, representing more than one-third of the share capital. In addition, the Chairman of the Board led about 15 virtual and in-person meetings focusing on ESG matters. The Independent Lead Director and the Head of Investor Relations & Sustainability also participated in these meetings.



Suppliers

GF's successful long-term partnerships with its procurement and logistics partners are essential for business continuity. GF places great emphasis on ensuring they meet its own standards for sustainability and ethics and promote compliance with standards. GF views its suppliers as valuable partners in enhancing the environmental efficiency of its production equipment and minimizing the social and ecological risks along its [value chain](#). In 2021, GF started [a project with EcoVadis](#) to extend the scope of supplier assessments and to improve its suppliers' commitment to sustainability.

GF also maintains regular contact with its suppliers through events such as trade fairs.



Universities and research institutes

GF maintains close relationships with many leading universities and research institutes. These partnerships are essential for GF in order to continue attracting well-trained employees and advancing its research and development activities. These collaborations take several different forms. For example, the Corporation offers internships and junior work opportunities to students at universities and technical institutes. It also partners with academic institutions on specific projects.

In 2021, GF collaborated with ETH Zurich to conduct research projects with students. During these projects, each GF division provided students with a real business case focusing on sustainability and operational excellence. The students were given three months to understand the case and develop possible solutions. The [results of the students' work](#) were presented in December 2021.

In the year under review, GF also established partnerships with several vocational colleges in Yangzhou (China). One of these is a cooperation with the Yangzhou Polytechnic Institute, which educates students in the field of mechatronics. GF conducts various activities as part of the collaboration, including webinars, site introductions and campus job fairs. In addition, GF also plans to implement a development program for technical trainees. These collaborations aim to contribute to the students' training and first steps into the job market, on the one hand, and to raise brand awareness and promote GF's company culture to attract skilled new employees on the other.

Furthermore, GF sets up regular workshops to exchange views on innovation trends with other universities, including the Universitatea din Pitești in Romania or the Montanuniversität Leoben in Austria.

Regulators and industry associations

GF operates in many countries and jurisdictions and complies with all applicable laws and regulations. GF is a member of a number of chambers of commerce and is actively involved in various national and international industry associations and trade organizations.



Communities and NGOs

GF supports and promotes cultural and social programs in its local communities. More generally, it aspires to enrich lives and create a positive overall impact. Within GF's corporate citizenship programs, which help to improve access to drinking water and education, the company also cooperates with many different NGOs.

GF's Clean Water Foundation supports projects focused on improving water filtration and distribution infrastructure in rural communities and hospitals. One of its main partners is Caritas Switzerland. In 2021, this partnership concluded phase III of a long-term project in Bolivia to improve access to clean and safe drinking water. In phase III, the partners installed 18 drinking water systems in 10 different communities to the direct benefit of over 700 families. GF has supported these projects with approximately CHF 500'000 in funds.

Another trusted partner of the foundation is Water Mission, a non-profit organization in the US. To support Water Mission's fight against the global water crisis, GF hosts global "Walk for Water" fundraisers. During these events, participants walk approximately 1.5 miles to the midway point holding empty buckets, which they must fill with dirty water and carry another 1.5 miles to the finish line. The walk allows participants to experience the same day-to-day challenge as the 2.2 billion people worldwide who live without access to safe drinking water. In 2021, GF Piping Systems hosted a "Walk for Water" event in Irvine, California (USA). Together with its sponsors, the 220 participants raised USD 150'000 for Water Mission. This effort alone will provide more than 6'000 people with clean water for the rest of their lives.



Media and the general public

GF is interested in creating transparency for the general public about its business activities. As a responsible corporate citizen, GF aims to provide all relevant stakeholders with equal and current information. Therefore, GF regularly publishes media releases on relevant topics such as full- and mid-year results, the development of new markets, product innovations, and acquisitions. GF also maintains an ongoing exchange of information with journalists. GF supplements its media activities with an active social media presence on channels including [LinkedIn](#), [Twitter](#), [Facebook](#), [YouTube](#), and [Xing](#).



Topics of material importance

In 2021, GF's activities focused on defining measures for the Strategy 2025 of which the Sustainability Framework 2025 is an integral component. When defining these measures, GF placed specific emphasis on the topics identified as material by its stakeholders.

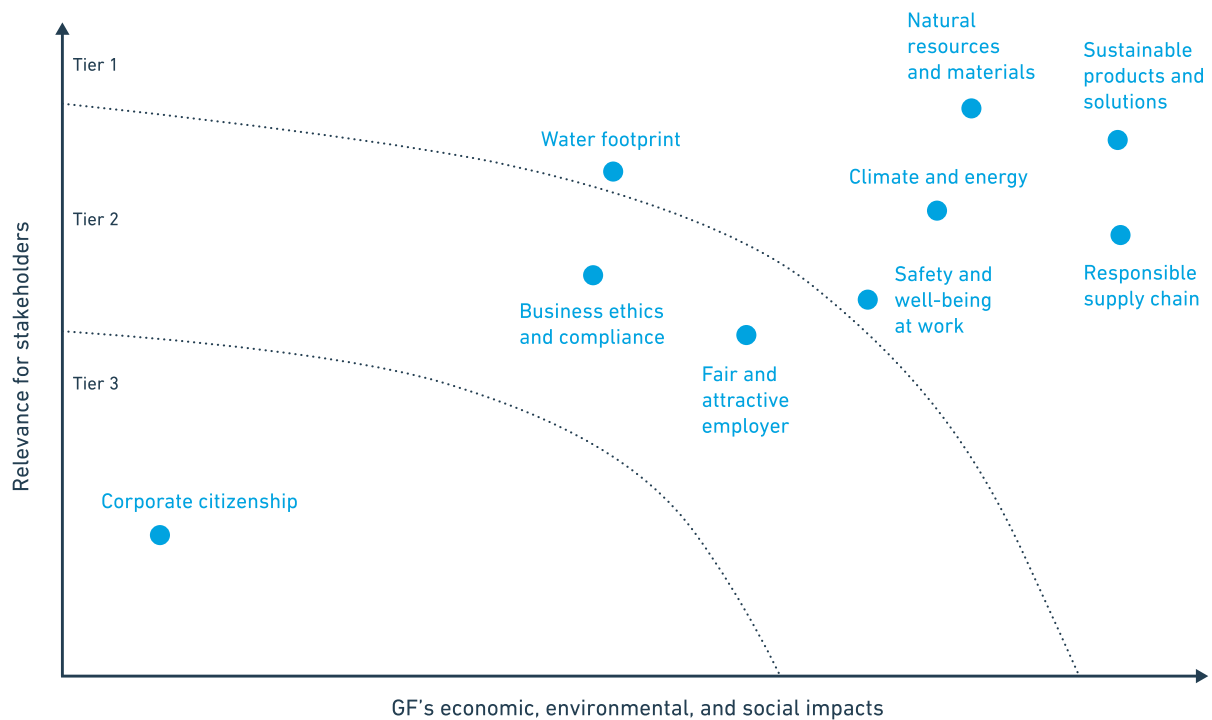
GF's last re-evaluation of the topics of material importance for its operations was in 2019, near the closing of the strategic cycle 2016–2020 and in preparation for the [Sustainability Framework 2025](#). This evaluation resulted in a materiality matrix, which the Executive Committee approved in early 2020. The identified material topics informed the company's discussions throughout 2020 and defined reference points for its Sustainability Framework 2025.

The re-evaluation had several stages. GF conducted around 30 interviews with key internal and external stakeholders to help identify the material topics. The group of interviewees was diverse in terms of professional experience, origin, country of residence, age and gender. GF also obtained input from key customers, suppliers, investors, its Executive Management, representatives from senior management, and employees from different regions.

In close collaboration with the divisional sustainability teams, the [Corporate Sustainability Team](#) then collated and summarized the feedback from the interviews. It also conducted a qualitative impact analysis along GF's value chain to rank the topics' relevance for sustainable development. These findings flowed into the resulting materiality matrix. The matrix was then again reviewed and fine-tuned with support from a third-party sustainability communications agency.

Details of each category in the matrix and the reasoning behind their position on the graph are described below (see graphic and tables below).

According to the requirements of the Global Reporting Initiative (GRI), GF reports on all material topics identified by its stakeholders in its Sustainability Report. Information on measures and progress made can be found in the chapter [Progress on Sustainability](#).



Areas of high materiality

Topic	Related aspects	Explanation for high materiality
Sustainable products and solutions	<ul style="list-style-type: none"> Sustainable products Circular economy in product R&D Innovation Customer relationship management Product and customer safety 	<p>GF's product portfolio is its main direct impact on sustainable development. The design phase determines a product's environmental or social impacts during its life cycle. GF therefore considers it crucial to ensure that the entire life cycle is taken into account during this phase. The notion of a circular economy is integrated into product development at a very early stage. Different materials and components are analyzed to decide whether they are reusable or recyclable. It is essential for GF to have a precise understanding of customers' needs and to provide them with the right solution. GF's three divisions can only have a positive impact on sustainability by working closely with their customers. Product and consumer safety is integral to product development; it is essential for preventing individuals from being harmed by hazardous substances or materials, particularly in the disassembly phase. It is vital for GF to comply with applicable laws (such as REACH and RoHS) and ensure that all necessary declarations are in place, visible, and understandable for its customers.</p>
Natural resources and materials	<ul style="list-style-type: none"> Reuse of materials at GF's operations Waste reduction Biodiversity and land use Pollution prevention 	<p>Valuable natural resources and other inputs are essential for the manufacture of GF's products. Manufacture results in products and also waste. As part of GF's commitment to being a responsible industrial company, it is therefore important for GF to continuously work to ensure that this waste is minimized and that circular approaches are implemented by each division wherever feasible. This applies to GF's use of resources and materials at its operations, its treatment of waste, its efforts to reuse or recycle itself or to work with outside partners to find possible reuse and recycling options. Biodiversity provides the existential basis for human beings to live on this planet. GF's facilities are sited in industrial zones that have the infrastructure needed by its operations. Their impact on biodiversity and land use is relatively small. GF adopts the precautionary principle. It therefore places a high priority on environmental management and ensures its compliance with all applicable laws and regulations.</p> <p>In addition, the majority of GF's sites are ISO 14001 certified. As such, these sites are responsible for locally identifying, managing and monitoring environmental risks, including accidental pollution.</p>
Climate and energy	<ul style="list-style-type: none"> GHG emissions along the value chain Energy use in GF's operations Non-GHG emissions (such as SOx, NOx, PM, and VOCs) in GF's operations 	<p>Energy consumption is a major source of GHG emissions, and the majority of GF's total GHG footprint results from emissions generated across the value chain (scope 3). Increasing concentrations of greenhouse gases in the atmosphere directly contribute to global warming. Climate change is the biggest energy-related concern of many external stakeholders and regulators; and the international community is broadly committed to tackling the challenges it presents. Being a global industrial company makes it essential for GF to understand, manage and reduce the GHG emissions attributable to its operations, supply chain and customers' use of its products. Non-GHG emissions from GF's production processes are important for nearby communities and the environment. However, GF facilities do not release significant quantities. Consequently, GF's impact on non-GHG emissions is small.</p>
Responsible supply chain	<ul style="list-style-type: none"> Supply chain management (social and environmental impacts) Integration of social and environmental topics into procurement processes Human rights 	<p>GF's supply chain could potentially be a source of adverse social and environmental impacts. GF therefore has a responsibility to systematically manage its suppliers in order to minimize these risks. Respect for human rights and the prevention of human rights violations are integral to responsible supply chain management. As a basis for long-term partnerships with its suppliers, GF expects them to do their part to ensure the protection of human rights.</p>
Safety and well-being at work	<ul style="list-style-type: none"> Occupational health and safety Ergonomic work environments Mental health and well-being 	<p>Occupational safety is of paramount importance to GF and many of its stakeholders. Caring about the people who work for GF (or on its premises) is integral to GF's corporate culture. GF is therefore committed to fostering a robust safety culture and, more broadly, to providing a work environment that promotes its employees' overall well-being.</p>

Water footprint	<ul style="list-style-type: none"> • Water consumption • Wastewater • Reducing water pollution 	Although GF's operations are not water-intensive, water is used along its entire value chain. Water use is particularly high in some of the upstream processes. Sustainable water management (access to clean water and leak-free water transport) are urgent societal issues that GF takes very seriously. GF's operations mainly use water in closed-loop cooling cycles. Quality is always controlled before water is returned to source.
Fair and attractive employer	<ul style="list-style-type: none"> • Diversity, equal opportunity, and inclusion • Learning and development • Talent retention, attraction, and engagement • Employee work-life balance, flexible work arrangements • Working time and wages • Freedom of association 	A fair and attractive employer treats all employees equally, motivates them, enables them to achieve a healthy work-life balance, supports freedom of association, and provides training and development opportunities. A respectful and diverse work environment in which all employees feel included and affirmed regardless of their gender, nationality, ethnic origin, age, identity, sexual orientation or identity is essential: retaining diverse and skilled talent supports future business growth. Demographic change, digitalization and automation require GF and its employees to acquire new skills. It is therefore a priority for GF to offer employees a wide range of training and development opportunities. As a matter of course, GF ensures that its employees worldwide enjoy internationally recognized human rights.
Business ethics and compliance	<ul style="list-style-type: none"> • Corporate governance • Business ethics and compliance • Risk and opportunity management • Business continuity • Data privacy and safety • Cybersecurity 	Good corporate governance enables GF to address the interests of all internal and external stakeholders. It ensures objective decision-making, clear checks and balances, and legal and regulatory compliance. Risk and opportunity management is crucial for GF and its outside stakeholders to maintain business continuity in a rapidly changing environment and to systematically identify and manage, emerging and potentially disruptive developments. Although GF does not collect sensitive customer data, it does store its employees' personal data. GF handles all such data in full compliance with the GDPR and other applicable data protection laws in the jurisdictions in which it operates. Amid ongoing digitalization, data availability, integrity, and security are crucial for GF's IT infrastructure and business systems.
Corporate citizenship	<ul style="list-style-type: none"> • Community engagement • Local community impact 	GF is committed to having a positive impact on the communities where it operates. GF is at once a global and a local citizen: maintaining good relations with its neighbors and partnering with them to achieve common goals are of great importance to the Corporation. In general, GF's production sites pose no material risks for, or have adverse effects on, nearby communities. Their direct impact is therefore minimal.

+ GRI 102-11 | GRI 102-42 | GRI 102-43 | GRI 102-44 | GRI 102-46 |
GRI 102-47 | GRI 102-49

Corporate citizenship

GF supports and promotes cultural and social programs at its various locations, as well as activities that contribute to the common good. In 2021, it spent around CHF 2 million at the corporate level on social engagement activities in addition to donations (around CHF 900'000) made by the individual locations. The largest contributions in 2021 went to GF's foundations: the Clean Water Foundation, Kloostergut Paradies and Iron Library. In addition, several GF companies supported local activities with substantial contributions.

Improved access to clean drinking water

GF's Clean Water Foundation has supported a total of 160 drinking water projects worldwide since 2002. To date, GF has invested more than CHF 12 million and improved the lives of more than 330'000 people by providing better access to safe drinking water. In 2021, the Clean Water Foundation granted some CHF 500'000 to projects in Somaliland, Zambia, Cambodia, Nicaragua, and Uganda. Most of the projects focus on improving infrastructure for water filtration and distribution in rural communities and hospitals. In 2022, GF will celebrate the 20th anniversary of the Clean Water Foundation by supporting one project each in the areas of health/hospital infrastructure and education/school buildings. The partners of these projects, working in close cooperation with GF, will clarify in more detail how GF can make a greater contribution in the future via technical expertise and know-how in addition to financial support.



One of the main partners of the foundation is Caritas Switzerland. In 2021 the partners concluded phase III of a long-term project in Bolivia to improve access to clean and safe drinking water. In phase III, they have installed 18 drinking water systems in 10 different communities to the direct benefit of over 700 families. GF has supported these projects with approximately CHF 500'000 in funds.

Another trusted partner of the Clean Water Foundation is Water Mission, a non-profit organization in the US. To support Water Mission's fight against the global water crisis, GF hosts global "Walk for Water" fundraisers. During these events, participants walk approximately 1.5 miles to the midway point holding empty buckets, which they must fill with dirty water and carry another 1.5 miles to the finish line. The walk allows participants to experience the same day-to-day challenge as the 2.2 billion people worldwide that live without access to safe drinking water. In 2021, GF Piping Systems hosted a "Walk for Water" event in Irvine, California (US). Together with its sponsors, the 220 participants raised USD 150'000 for Water Mission. This effort alone will provide more than 6'000 people with clean water for the rest of their lives.

Each year, GF supports the Clean Water Foundation with a substantial lump-sum contribution. The Board of Trustees includes the CEO, who also chairs the Foundation, and two members of the Executive Committee.

Klostergut Paradies and Iron Library Foundation

The Klostergut Paradies in Schlatt (Switzerland) has been owned by GF since 1918. Today, this historic building serves as the Corporation's main seminar and training center. In addition, the Iron Library Foundation has been located at the Klostergut Paradies since its foundation in 1948. Today, GF proudly owns one of the world's largest private collections of books on material science and the history of technology.

The Iron Library and GF Corporate Archives, managed by one team, jointly preserve GF's historical and cultural heritage, which dates back to the 18th century. In 2021, the digital offerings included over 1'200 digitized volumes totaling more than 100'000 pages.

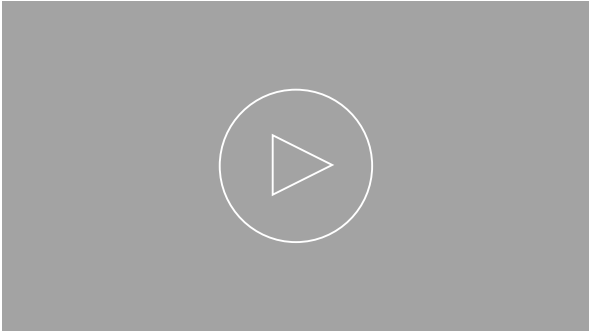
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Contribution to the Sustainable Development Goals

The United Nation's 17 Sustainable Development Goals (SDGs) address the key challenges of sustainable development on a global level. Through its business activities and dedication to sustainability, GF is making significant contributions towards these goals.

Thanks to its commitment to the [SDGs](#), in 2021, GF was included as a sustainability leader in the “50 Climate and Sustainability Leaders” campaign of TBD Media Group. The campaign consists of a video series showcasing companies that are advancing themselves and their industries towards a better future.

The video on GF explains how it develops products in all three divisions that are particularly sustainable in their manufacture or production.



GF's contribution to the SDGs in detail

The following overview presents GF's contributions to the SDGs. Each goal comprises several numbered targets which detail its specific objectives and outcomes. Therefore, each box outlines GF's progress towards these targets and highlights its activities in the relevant area.



GF makes continual efforts to reduce the number of deaths and illnesses from water pollution and contamination (target 3.9). It produces high-quality systems and solutions for the safe and hygienic transportation of water. This is particularly relevant for preventing legionella, a pathogen whose bacteria reproduce when water does not circulate or when the water temperature is at a level that favors their growth. For example, GF Piping Systems' Hycleen Automation System ensures a permanent hydraulic balance across all pipes and bacteria-free drinking water. Amid the spread of the COVID-19 pandemic, [GF took swift and proactive steps](#) to safeguard its employees from potential exposure.



Through its company programs, GF is helping to increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship (target 4.4). In 2021, about 67% of GF's workforce attended various professional training programs. The average [number of training days per employee](#) was lower than in prior years due to pandemic-related restrictions. GF responded to the restrictions by revising many of the offered courses and moving them online. Additionally, GF has work-study arrangements with universities in several countries, with students completing their degree while participating in projects at GF. [More information in the chapters: Stakeholder dialogue](#) and [success story with Tianjin College](#).



GF actively promotes women's full, effective participation and equal opportunities for leadership at all levels of decision-making (target 5.5).

In recent years, GF has initiated a range of measures to increase the proportion of women in its workforce and management. In its [Sustainability Framework 2025](#), GF has set a target that, by 2025, 25% of its newly appointed managers are women and has initiated a [range of measures](#) to achieve this goal. These measures include management training programs that address gender balance, company events and participation in career fairs aimed at female job candidates.



Through various initiatives and projects, GF is increasing water-use efficiency to address water scarcity and substantially reduce the number of people suffering from water scarcity (target 6.4). In addition, the company is further promoting international cooperation and capacity-building to support developing countries in water-related activities and programmes (target 6.a).

Large amounts of drinking water are currently lost or contaminated around the world due to poor infrastructure. GF Piping Systems offers a [variety of products](#) that help ensure leak-free delivery. In 2021, the division developed the Butterfly Valve 565 that optimizes piping systems built for water applications.

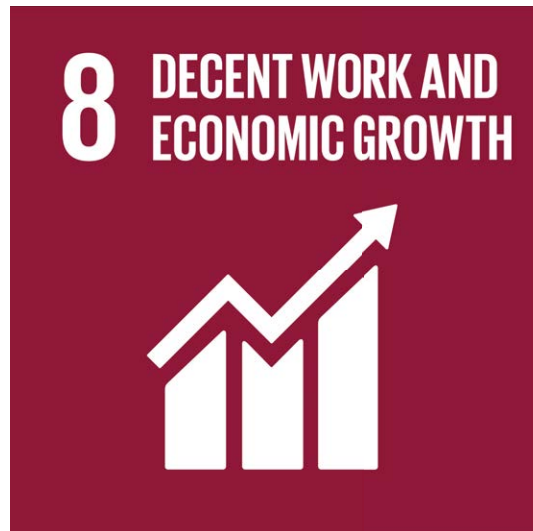
Through its [Clean Water Foundation](#), GF supports worldwide projects to provide people with better access to safe drinking water. For example, in 2021, the foundation conducted projects in Somaliland, Zambia, Cambodia, Nicaragua and Uganda. Most of the projects focus on improving infrastructure for water filtration and distribution in rural communities and hospitals.



GF helps to improve global energy efficiency (target 7.3).

As part of these efforts, GF continuously increases the share of renewable energy purchased and self-generated. In 2021, renewables represented 24% of GF's total energy consumption (up from 17% in 2020). In addition, the company is increasing the energy [efficiency of its own operations](#). In 2021, measures to reduce the site's energy consumption included for example investments in efficient water pumps and cooling systems as well as in LED lighting.

At the same time, GF is also contributing to the production of clean energy through its broad range of products and solutions. GF Casting Solutions partners with Microsoft Switzerland in an innovation project using artificial intelligence. The project seeks to optimize the ramp-up phase of casting production and ultimately maximize the quality of components while minimizing their associated energy consumption. In 2021, the project was successfully tested at one of GF's locations in Europe.



GF supports efforts to achieve full and productive employment and decent work (target 8.5) and to reduce the proportion of youth not in employment, education, or training (target 8.6). The Corporation also promotes a safe and secure working environment for all workers (target 8.8). GF provides livelihoods and fair and competitive compensation to 15'111 employees in more than 30 countries around the world. GF also directly supports young people to achieve productive employment. For more than 100 years, the company has offered a vocational training program that trains apprentices in technical and commercial professions.

In addition to developing skilled employees, GF also considers safe and secure working environments essential for its operations. The [Sustainability Framework 2025](#) is an important guideline that will help the Corporation achieve the ultimate goal of having zero workplace accidents. In the framework, GF has set itself the goal to reduce the accident rate by at least 30% relative to the previous three-year average (i.e., 2018–2020).



GF makes ongoing efforts to upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies (target 9.4). The company invests continuously in R&D to create innovative new products and solutions that provide social or environmental benefits for customers during the product's use phase. All [three GF divisions](#) address sustainability issues along their products' value chains and across product life cycles.

GF Casting Solutions, for example, focuses on lightweight components for the aerospace and energy sector. GF Machining Solutions offers solutions to increase the energy efficiency of high-precision machines.



GF helps to reduce the adverse environmental impact of cities, including by paying special attention to air quality (target 11.6). GF Piping Systems' solutions directly support municipalities in establishing and maintaining safe and leak-free water distribution networks. Solutions like [COOL-FIT](#) also enable GF's customers to increase the energy efficiency of their drinking water systems and cooling equipment.

GF Casting Solutions excels at the design and manufacture of lightweight components for the automotive and aerospace industries. GF therefore contributes directly to the development of alternative-drive mobility and to noise and pollution abatement in cities and communities. In a [successful joint venture with Fisker](#), GF's lightweight components are contributing to the development of highly efficient and advanced electric vehicles.



GF strives to achieve the sustainable management and efficient use of natural resources (target 12.2). The company takes measures to substantially reduce waste generation through prevention, reduction, recycling and reuse (target 12.5) and to adopt further sustainable practices (target 12.6). GF continually strives to reduce the waste sent from its operations to landfill or incineration. In its [Sustainability Framework 2025](#), GF has set itself the target to reduce the intensity of waste sent to landfill or incineration by 20% by 2025. In 2021, GF recycled the majority of its waste (71%). In addition, in 2021, GF launched a [circular economy](#) project with a series of workshops to develop a shared understanding of the concept and initiatives to promote its adoption. The project defined new pilot programs to improve the way GF designs, repairs and re-manufactures its products.



GF continually integrates climate change measures into its strategies and planning (target 13.2).

Its [Sustainability Framework 2025](#) outlines its plan to reduce the climate impacts of its operations and value chain. This ambition is highlighted by GF's specific goal to reduce its GHG emissions in absolute terms by 21% by 2025 (scope 1 and 2 emissions).

GF offers a wide range of products and solutions that enable its customers and/or end-consumers to reduce their energy consumption and GHG emissions during the products' use phase.



GF strengthens the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries (target 17.2)

The company is a signatory of, and an active participant in, the UN Global Compact (UNGC). Since 2019, it has also been a member of UNGC's Swiss network's working group "Sustainable Supply Chains."

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Progress on Sustainability

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Sustainability Framework 2025: Progress

GF has the vision to become a sustainability and innovation leader providing superior customer value. The company believes sustainability is not a stand-alone topic, but an essential core value of its strategy and its business. Therefore, GF's Strategy 2025 includes a set of ambitious sustainability targets.

Progress in 2021

In 2021, the first year of implementation, GF made good progress against most of its targets. The following tables provide an overview of where GF stands with regard to its targets and what has been achieved in 2021.



Product portfolio

	Target 2025	Status 2021	Progress in 2021
<p>Product portfolio 70% of sales with social or environmental benefits</p>			<p>GF generated 60% of its sales from products, systems or solutions that deliver social or environmental benefits.</p> <p>All three divisions continuously carry out measures and projects to increase the share of products, systems and solutions with social or environmental benefits. In 2021, each division implemented a sustainability assessment tool that they will apply to all future innovation processes. The tool ensures every innovation meets GF's sustainability criteria.</p>



Climate & Resources

	Target 2025	Status 2021	Progress in 2021
<p>CO₂e emissions Reduce absolute CO₂e footprint by 21% (Scope 1 and 2 emissions)</p>			<p>GF reduced its scope 1 and 2 emissions by 17 % compared to the 2019 baseline.</p> <p>In 2021, GF aligned this goal for scope 1 and 2 with the Paris Agreement's aim to limit global warming to 1.5°C above preindustrial levels (Science-based target). The most significant improvements stem from GF's switch to renewable electricity. In 2021, 24% of GF's total energy used was renewable (2020: 17%). GF's corporate sustainability team, working closely with its divisions and facilities, developed a detailed roadmap to achieve this target.</p>



Water

Reduce **water intensity** by **20%** in high stress areas



GF's water intensity in high-stress areas increased by 2% compared to the baseline.

This slight increase is mainly due to a major leakage at a GF Casting Solutions site, resulting in water consumption outpacing production volume. The site fixed the leakage in the last quarter of 2021 but could not compensate the increase in consumption. Nevertheless, sites in water-stressed areas implemented various new measures to reduce their water usage in 2021



Waste

Reduce by **20%** **intensity of waste** sent to landfill or incineration



GF reduced the intensity of waste sent to landfill or incineration by 9% compared to the 2018-2020 average.

During the reporting year, GF recycled 71% of its waste. A major contributor to achieving this target in 2021 was a recycling project at one site of GF Piping Systems.

To further improve the way GF designs, repairs and re-manufactures its products, the company launched a circular economy project with a series of workshops that has led to the definition of new pilot programs.



Supply chain

Perform **sustainability assessments** for **80%** of procurement spend



GF assessed 34% of its procurement spend in 2021, which is in line with achieving its five-year goal.

To conduct these sustainability assessments, GF has partnered with the rating agency EcoVadis. The company also accepts similar ratings and proprietary sustainability risk screenings. In 2021, GF's responsible procurement team conducted an initial pilot phase to familiarize itself with the assessment process. At the end of 2021, GF had conducted sustainability assessments on 34% of its procurement spend, equal to approximately 300 new and existing key suppliers.



People & Well-being

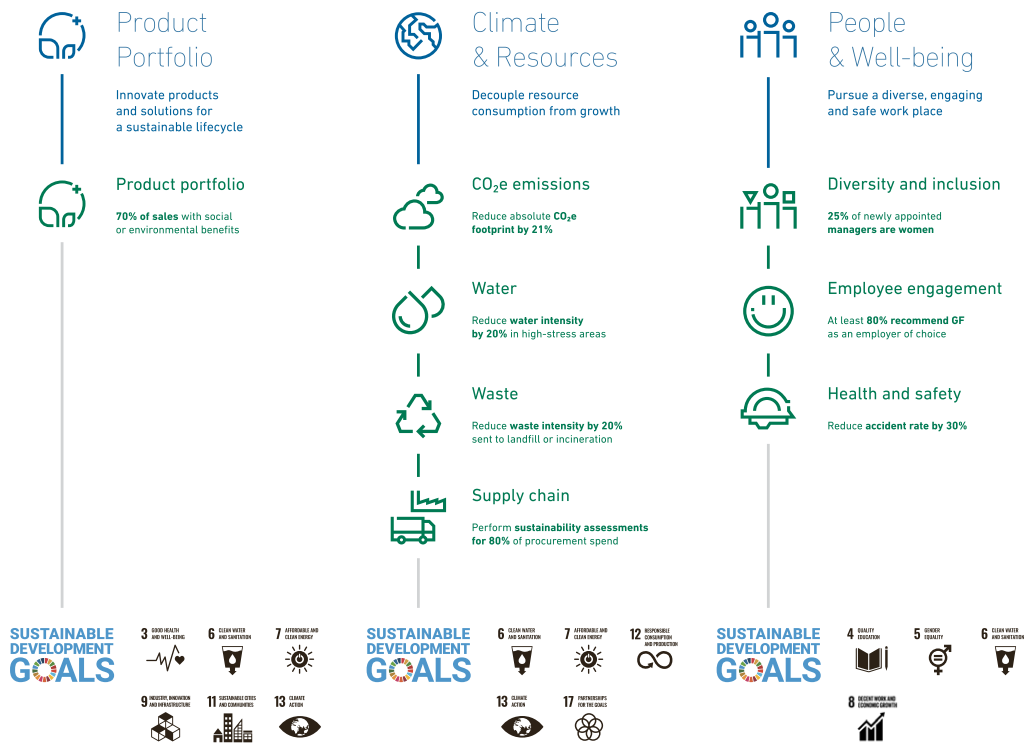
	Target 2025	Status 2021	Progress in 2021
 <p>Diversity and inclusion 25% of newly appointed managers are women</p>		<p>30% of newly appointed managers were women, meaning GF exceeded its target.</p> <p>To raise awareness about the strengths of diversity and promote its broader adoption, GF launched two new training programs in 2021: the “women in leadership” program, which includes coaching sessions for women, and a training program on unconscious bias for people involved in recruiting processes. All three divisions achieved significant progress, with GF Machining Solutions’ sites in Switzerland making the largest contributions.</p>	
 <p>Employee engagement N/A</p> <p>At least 80% recommend GF as an employer of choice</p>		<p>Employee engagement is measured by a survey conducted every two years.</p> <p>As the next global employee survey covering all three divisions is planned for 2022, no statement can be made about employee engagement in 2021.</p> <p>In 2021, GF began implementing its new corporate values based on performance and learning. The company is continually striving to foster an inclusive work environment where employees’ skills are valued, where their opinions can be voiced and acknowledged and where they have opportunities to develop both professionally and personally.</p>	
 <p>Health and safety</p> <p>Reduce accident rate by 30%</p>		<p>GF’s accident rate increased to 10.2% in 2021. The increase is mainly due to short-time work and the temporary pandemic-related closures of some sites in the first half of 2020.</p> <p>This resulted in a lower number of accidents in 2020. In addition, after returning to their workplaces, some employees were less sensitized to the risks related to their daily work.</p> <p>In 2021, GF re-launched its cross-divisional Zero Risk campaign under the new motto “Be Aware – Be Safe”. Based on this new concept, the campaign raises awareness about unsafe situations, implements new safety procedures and exchanges global best practices.</p>	

The Sustainability Framework 2025 in a nutshell

The Sustainability Framework 2025 consists of three focus areas: Product Portfolio, Climate & Resources, and People & Well-being. A clear long-term ambition was set for each:

- GF's product portfolio will focus on innovating products and solutions for a sustainable lifecycle.
- GF will work to decouple resource consumption from growth in its operations and supply chain, thereby minimizing its environmental footprint.
- GF will foster a diverse, engaging, and safe workplace and strive to be the best employer it can be.

To realize these ambitions, the framework is supported by eight concrete goals with corresponding quantitative targets.



What the three focus areas of the Sustainability Framework 2025 mean in detail

GF's product portfolio

GF defined a goal to propel its ambition of providing customers with products and solutions with a social or environmental benefit

- Generate 70% of GF's sales from products, systems or solutions that have social or environmental benefits.

GF's ambition is to provide its customers with products, systems and solutions that are sustainable throughout the products' lifecycle.

GF's portfolio is therefore to be characterized by a larger proportion of products that offer social or environmental benefits for customers and/or end-consumers. GF is committed to increasing the share products and solutions to at least 70% by 2025.

The company's three divisions serve distinct business markets. As a result, different criteria were defined for their respective product portfolios' social and environmental benefits.

- **GF Piping Systems:** small carbon footprint, higher energy efficiency, reduced water losses, a long lifespan, lightweight handling, no substances of very high concern, and life cycle assessments (LCAs) with proven benefits.
- **GF Casting Solutions:** lightweight design, the right materials, and the process used to manufacture components for alternative drives.
- **GF Machining Solutions:** reduced energy consumption of machines, resource efficiency along a machine's lifecycle, and skills transfer to the operator.

Contribution to

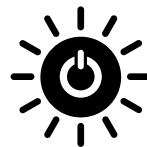
3 GOOD HEALTH AND WELL-BEING



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



GF's impact on the climate and resources

GF's operations and value chain consume resources and impact the climate. Going forward, GF is committed to reducing these impacts by progressively decoupling consumption from growth.

In the years ahead, GF aims for its production sites to optimize their consumption of energy and water and to reduce waste. It also wants to use its influence to reduce the carbon footprint of its supply chain.

This ambition is articulated in four specific goals:

1. GF aims to reduce its GHG emissions in absolute terms by 21% (scope 1 and 2 emissions) ^{8, 9} by 2025. GF's scope 1 emissions mainly consist of natural gas, fuel oil, and, to a lesser extent, fuel used for internal transportation needs. GF's scope 2 emissions consist of its electricity consumption.
2. Although GF's operations are generally not water-intensive, the project team identified 15 GF production sites that consume water located in water-scarce areas. GF's target for these sites is to reduce their water intensity by 20% by 2025. ¹⁰
3. GF's waste is almost entirely non-hazardous. Nevertheless, the company wants to reduce the amount of waste incinerated and sent to landfill. It therefore aims to reduce the intensity of waste (hazardous and non-hazardous) sent to landfill or incineration by 20% by 2025. ¹²
4. GF is committed to extending its sustainability standards to its suppliers. Its goal is to conduct a comprehensive sustainability assessment of around 1'000 suppliers, which together account for around 80% of its procurement spend. To achieve this five-year goal, GF aims to assess at least 16% of its procurement spend annually.

Contribution to

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



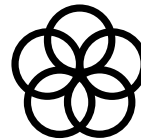
12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



17 PARTNERSHIPS FOR THE GOALS



GF's people and their well-being

GF's ambition is to cultivate a diverse, engaging and safe workplace for its people. To realize this ambition, GF set three goals for 2025 for diversity and inclusion, employee engagement, as well as a safe and healthy working environment:

1. Diversity and inclusion: GF has set the target that, by 2025, 25% of newly appointed managers are women, while also addressing the broader aspects of diversity and inclusion worldwide.
2. Employee engagement: at least 80% of employees would recommend GF as an employer of choice. The assessment will be based on a survey conducted every two years in all three divisions.
3. Health and safety: GF aims to reduce the accident rate by at least 30% relative to the previous three-year average (i.e., 2018–2020). GF has consistently improved the safety conditions for its employees and contractors and wants to continue its Zero Risk campaign.

Contribution to

4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



8 DECENT WORK AND ECONOMIC GROWTH



Contribution to GF's customers, employees, and the community

GF's ambitions for the three focus areas and the eight defined goals are aligned with the UN Sustainable Development Goals (SDGs). This helps ensure that the company meets the needs of its customers and employees, as well as those of the broader community in which it operates. GF's sustainability goals contribute to 11 of the 17 SDGs and support the global agenda for 2030 as defined by the United Nations and supported by individual governments.

[+ More information in the chapter: Contribution to the SDGs](#)

Background information: Developing the Sustainability Framework 2025

The Sustainability Framework 2025, which is [fully integrated into GF's Strategy 2025](#), was developed in three phases in 2020.

- **Definition of focus areas and ambitions:** In the first step, GF's [material topics](#) were ranked according to their relevance to sustainable development. For this purpose, GF interviewed key internal and external stakeholders¹³ and conducted a qualitative impact analysis along its value chain. Then, a workshop with key representatives from all relevant internal departments identified three distinct focus areas and proposed an ambition for each. This overview was discussed with and approved by the Executive Committee.
- **Definition of targets:** GF's three divisions assessed the three focus areas in detail to factor in the specifics of their individual businesses. The findings and proposals were then jointly discussed and finalized in a series of workshops to ensure GF set practical yet ambitious five-year targets.
- **Approval:** The three divisional presidents presented to the Executive Committee for approval how they intended to realize the proposed framework in the context of their respective operations and markets. Finally, the Board of Directors approved the Sustainability Framework 2025.

GF monitors the fulfillment of criteria in the Sustainability Framework 2025 on a monthly basis against a fixed set of KPIs. The effectiveness of the measures conducted in accordance with the Sustainability Framework 2025 was first evaluated on a group-wide level at the end of 2021.

+ GRI 303-1 | GRI 305-5 | GRI 306-4 | GRI 308-1 | GRI 403-9 | GRI 405-1

⁸ Compared with the baseline (2019).

⁹ The absolute CO₂e scope 1 and 2 target was changed in 2021 from 12.5% to 21%, as GF has aligned the target with the protocols of the Science Based Target initiative (SBTi) and capping global warming at 1.5°C.

¹⁰ Compared with the baseline (2019)

¹¹ GF's water consumption reflects its production output. The target is therefore intensity rather than a specific absolute amount.

¹² Compared with the baseline (average for 2018–2020).

¹³ Thirty interviews were conducted with GF's customers, investors, suppliers, employees and senior management.

Product portfolio

A key aspect of GF's strategic efforts across its three divisions has been its transformation from a provider of products and systems to a provider offering integrated solutions.

GF's product portfolio is one of the main areas in which GF can create a positive environmental impact. Therefore, GF's stakeholders have identified "sustainable products and solutions" as one of the most material topics in GF's latest [materiality assessment](#).

GF aims to support its customers with value-adding services over the entire life cycle of solutions provided. Therefore, GF has set a target in its [Sustainability Framework 2025](#) to generate 70% of its sales by 2025 from products, systems or solutions that have social or environmental benefits. In progress towards this target, 60% of GF's sales in 2021 (2020: 58%) delivered either a social or environmental benefit. In addition, all three GF divisions are actively working to increase this number via their innovation efforts and the strategic alignment of their product portfolios.



Product portfolio
70% of sales with social or environmental benefits

GF Piping Systems

Strategy and solutions

GF Piping Systems is the leading flow solutions provider that enables the safe and sustainable transport of water and gas. With the belief that "everything is connected", sustainability continues to be a key value driver in three ways.

GF Piping Systems aims to:

1. Ensure its customers enjoy a consistent flow of water, gas or chemicals without safety issues, leakages or any other ecological consequences.
2. Deliver solutions that contribute to its customers' decarbonization goals relating to energy use and GHG emissions.
3. Support its customers' environmental efforts by increasing their efficiency during the installation and operation of GF's systems, compared with traditional alternatives. GF's systems are characterized by their long lifespans, and their sustainability criteria are proven by [life cycle assessments](#).



Pre-insulated piping system COOL-FIT for food & beverage applications.

GF's Sustainability Framework 2025 is an important guideline for the division. Beyond the Framework's targets, one of GF Piping Systems commitments is that every innovation must provide an environmental benefit. To ensure this, GF Piping Systems implemented a sustainability assessment tool in mid-2021 that applies to all future innovation processes; both GF Casting Solutions and GF Machining solutions have also adopted this tool. In the same year, the division also established a sustainability business development team that supports initiatives in the innovation processes and throughout projects that cover the entire value chain. The team promotes initiatives regarding the circular economy, the generation of life cycle assessments and the creation of end-of-life solutions.

GF Piping Systems' innovative products and solutions help to address a variety of challenges:

- Reducing waterborne Legionnaires' disease and ensuring drinking water installations meet the highest hygiene standards.
- Helping to mitigate global drinking water losses due to leakages in aging infrastructure.
- Creating solutions for the energy-intensive cooling process of the increasing number of data centers.
- Contributing to the development of sustainable city infrastructure and the expanding green building sector.
- Developing lighter, longer-lasting solutions that enable the marine industry to reduce GHG emissions and fuel consumption while increasing load capacity.

Innovations in 2021

In 2021, GF Piping Systems developed the Butterfly Valve 565 that optimizes piping systems built for water applications. The valve can be used in a wide range of applications, e.g., on ships, in desalination plants, in industrial and municipal wastewater treatment plants, as well as in swimming pools. The plastic valve is 60% lighter than conventional metal valves, thus reducing the energy and resources needed for transport and installation. Replacing 600 metal butterfly valves with new plastic butterfly valves in marine applications can save up to 10 tons in weight and significantly reduce CO₂e emissions. The valve's high-quality plastics also protect it from corrosion and abrasion, guaranteeing reduced maintenance and a longer lifespan.

In addition, GF Piping Systems also developed a series of new pneumatic plastic actuators. The products are made of recyclable plastics and are corrosion-free, lighter and longer-lasting than metal actuators. The pneumatic valve's highly chemically resistant materials are designed for a variety of industries, including microelectronics, marine and chemical processing. The new product received the RedDot Design Award in 2021.

The introduction of the world's first pressure piping system made from bio-based PVC was another breakthrough innovation of GF Piping Systems in 2021. The sustainable PVC resin is made from a waste product of paper manufacturing and reduces production of carbon emissions by up to 90% compared to crude-oil-based PVC. GF Piping Systems has used bio-based PVC in pipes since October 2021 and will continue to increase its use in pressure piping.

In 2021, GF Piping Systems made significant contributions to the development and use of green hydrogen as a power source and the distribution of green hydrogen in gas networks. For example, GF supplied fittings, valves and pipes to a collaboration of the shipping industry's leading hydrogen propulsion system providers. After many years of research, these companies have designed a propulsion system based on hydrogen fuel cells. As a key supplier, GF was involved from the beginning of the project. The new propulsion technology will be applied in the first hydrogen-powered cargo ship that will be launched by a prominent Dutch shipbuilder in 2023. In this project, a total of four ships will be equipped with this new clean propulsion technology. The development holds great promise for the Dutch inland shipping sector, as it must reach zero emissions by 2050.

In Denmark, GF delivered PVC-U adaptor fittings to a leading electrolyzer provider for the production of green hydrogen. GF also supplied Netze BW with hydrogen-ready products such as couplings for a pilot project in Germany. In this trial, the utility disconnected the city of Oehringen from its surrounding infrastructure and is now supplying the town with a gas mixture containing up to 30% hydrogen.

New partnership

GF Piping Systems is working with other companies and associations to promote environmental initiatives. For example, in early 2021, the division became a Sustainable Digital Infrastructure Alliance (SDIA) partner. This association of companies, individuals and governments highlights the importance of improving the efficiency of digital infrastructure facilities to reduce the global carbon footprint.

As a prime example, data centers consumed about 205 terawatt-hours (TWh) of electricity in 2018, up 6% from 2010 ([Masanet et al., in Science](#)). That is slightly more electricity than what Denmark used in 2018 ([Our World in Data](#)). Energy Innovation, an energy and climate change policy think tank, estimated that 43% of that is used for cooling. Therefore, any small efficiency gains can have dramatic environmental benefits. The SDIA is researching the development of advanced cooling systems using liquid- and air-cooling technologies to improve the overall efficiency of data centers. The cooling systems will connect GF Piping Systems' technology to district heating and cooling grids to recover energy from the heat generated by IT equipment. As a global leader in flow solutions, GF Piping Systems' high-quality and value-adding piping technologies will play a key role in this project's success.

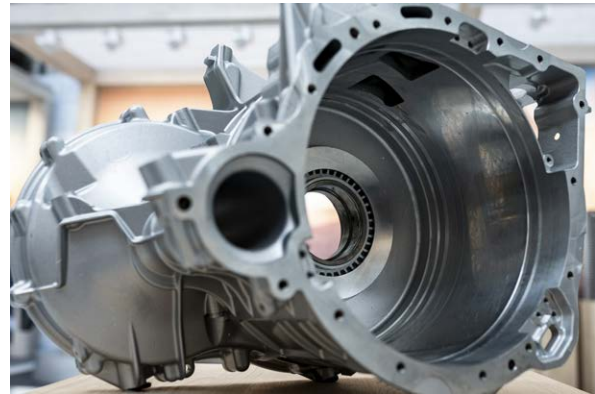
GF Casting Solutions

Strategy and solutions

GF Casting Solutions' business model is to empower sustainable mobility by developing optimally suited materials and technologies in addition to cutting-edge production processes. Its most successful projects have resulted in casting components that are lighter and more cost-effective.

These innovations provide distinct advantages to GF customers, particularly those in the automotive sector. For the division's customers, the development of alternative drive systems plays a critical role in reducing greenhouse gas emissions. Using fewer and lighter components lowers a vehicle's weight and is one of the most effective ways to reduce its fuel or energy consumption and emissions during its lifespan.

In its Strategy 2025, GF committed to growing within the electric mobility segment and in the renewable energy sector. Together with the Sustainability Framework 2025, the Strategy 2025 is an important guideline that aligns GF Casting Solutions' innovation process and its material and product development with ecological criteria. The ultimate goal is to produce sustainable products in a socially or environmentally conscious way. In this regard, GF Casting Solutions will strengthen its product development and sales organization to foster even earlier customer involvement and drive the innovation of products with social and environmental benefits. In addition, new developments in the innovation process are only approved when they provide additional sustainability value. Strategic attention will be given in particular to e-mobility drive components and structural parts.



Lightweight aluminum solution of an electric motor housing.

Innovations in 2021

GF Casting Solutions partnered with Microsoft Switzerland in an innovation project using artificial intelligence. The joint effort aimed to establish a broad, data-driven understanding of GF's casting processes, which often involve many complex steps. The project seeks to optimize the ramp-up phase of casting production and ultimately maximize the quality of components while minimizing their associated energy consumption. In 2021, the project was successfully tested at GF Casting Solutions' Altenmarkt (Austria) site. Through these tests, the project has passed the proof-of-concept phase and reached the final stage of the division's innovation process. It has been proven that AI can help to reduce waste material, costs, energy and time-to-market. In the next step, the project will extend to other plants.

GF Machining Solutions

Strategy and solutions

GF Machining Solutions aims to advance energy-efficient and clean manufacturing. Its vision is to set the standard for intelligent machining solutions and become a trusted partner of the global precision machining industry throughout all phases of a machine's lifecycle. It focuses on product reliability to prevent unplanned interruptions and help its customers significantly improve the efficiency of their manufacturing processes. Some critical areas of focus include increasing machine automation, digitalization, connectivity and intelligence.

GF's Strategy 2025 and the Sustainability Framework 2025 are important guidelines for this division on the road towards sustainability development. In addition to transferring skills to the operators, the division has two primary goals:



High-quality precision parts for the MedTech industry require sophisticated manufacturing technologies.

- **To ensure resource efficiency throughout the machine's life cycle:** The division works closely with its customers from the pre-sales production concept phase to the end of the equipment's life cycle, at which point the used systems can be refurbished. GF's introduction of remote access solutions enables it to offer faster response times and remote maintenance capabilities.
- **To reduce the energy consumption of machines:** In addition to using state-of-the-art components designed for maximum energy efficiency, GF Machining Solutions continually develops solutions that enable customers to reduce their energy consumption when producing components. Many of GF's machine models have energy management solutions (such as the Econowatt feature) which allow systems to go into stand-by mode during idle periods while keeping auxiliary equipment activated that are needed to maintain required levels of machine precision. In addition, GF Machining Solutions plays a critical role in the company's ambitions to reduce its CO₂e emissions, particularly the Scope 3 category. The division's goal is to minimize each machine's carbon footprint throughout its life cycle, from the purchase of raw materials to the end of its usable life. The primary focus is on the machine's usage phase, which is the largest contributor during its life cycle. To reduce carbon emissions, GF Machining Solutions adopted the sustainability radar – shared across all divisions – which enables sustainability footprint assessment in the new product development scheme. The tool allows GF to both measure and proactively manage its carbon footprint. GF Machining Solutions will review its implementation at several key milestones along the development process.

Innovations in 2021

In 2021, GF Machining Solutions took another step forward in reducing the environmental footprint of its products. In collaboration with a partner, the division designed a new spool, used in electric discharge machines (EDMs) to keep a constant supply of wire during the production process. This new spool can be produced with significantly less plastic. In addition, this spool is made of fully recyclable white polystyrene plastic, allowing new spools to be created from used ones. In the past, such spools were made from thermoplastic polymer that is less suitable for recycling compared to polystyrene. The colored flanges are produced from the same type of plastic and are also recyclable. By choosing a mono-material design and simplifying the recycling process, GF Machining Solutions is making circular economy principles a reality. In addition, while a strong focus was placed on sustainability, there were no compromises in the spool's design and performance. Since September 2021, the spool has been used in the production of certified premium wires.

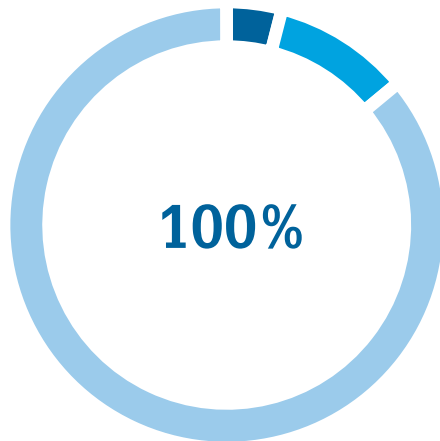
GF Machining Solutions has also developed a new software algorithm that reduces resource consumption in wire electrical discharge machining (EDM). EDM is a metal machining process in which material is removed from a metal workpiece using electrical discharges. Wire EDM discharges the electrified current via a taut thin wire. Using this new software algorithm, customers with GF's Intelligent Spark Protection System in place have greater control over the wear of the wire. The algorithm detects the wear of the wire and can reduce its running speed based on the processing conditions. As a result, wire consumption is significantly reduced.

+ GRI 306-1 | GRI 306-2

Climate, energy and emissions

Energy consumption and greenhouse gas (GHG) emissions are critical topics for GF due to its business in the machining and manufacturing sectors. As a global industrial company, GF believes it is essential to continually measure, manage and reduce the GHG emissions associated with its operations and value chain.

GF's GHG emissions per scope (2021) In % of total emissions



- Scope 1 emissions (fuel-related energy consumption)**
- Scope 2 emissions (electricity consumption)**
- Scope 3 emissions (external to GF operations)**

GF's [Sustainability Framework 2025](#) outlines its plan to reduce the climate impacts of its operations and value chain. This ambition is highlighted by GF's specific goal to reduce its CO₂e emissions in absolute terms by 21% (scope 1 and 2 emissions) compared to 2019. GF has aligned this goal with the Paris Agreement's aim to limit global warming to 1.5°C above preindustrial levels (science-based target) and thereby has increased its previous commitment from 12.5% to 21%.

GF has assessed the environmental impacts of its operations, and it found that its indirect GHG emissions (scope 3) are among the largest areas of its ecological footprint.¹⁴ Both GF and its stakeholders recognize that solid environmental and GHG emission management is integral for the company to create new business opportunities. To reduce GHG emissions, GF is taking steps to improve energy efficiency, promote the use of renewable energy and evaluate measures to generate its own renewable energy on-site. In 2021, for the first time, GF calculated its scope 3 GHG emissions according to the Greenhouse Gas Protocol Corporate Standard. These emissions result from activities not directly controlled by GF but which GF indirectly impacts through its value chain. The assessment concluded that scope 3 emissions represent the majority (86%) of GF's total GHG emissions.¹⁵



CO₂e emissions
Reduce absolute CO₂e footprint
by 21%

In 2021, GF also developed a scope 3 target in line with the protocols of the [Science Based Targets initiative \(SBTi\)](#), that will be officially approved at the beginning of 2022. The company will submit both of its targets (one for scope 1 and 2, and the other for scope 3) to the SBTi in March 2022.

To achieve the scope 3 emissions target, GF will mainly focus on the following measures:

- encourage and support suppliers to commit to CO₂e reduction targets
- transition raw materials to low-carbon alternatives such as bio-based (non-food) materials and low-carbon aluminum and magnesium produced with renewable energy
- increase the usage of recycled materials in GF's products
- improve the energy efficiency of GF Machining Solutions' equipment and machines

For GF to achieve these ambitious targets, it must enact advanced energy efficiency measures combined with a renewable energy strategy. Therefore, GF's Corporate Sustainability Team, working closely with the divisions and facilities, has developed a detailed roadmap to achieve the science-based target (SBT) for scope 1, 2 and 3 emissions. The roadmap will be approved by the Corporate Sustainability Council and later by the Sustainability Committee at the Board level in February 2022.



In 2021, GF also assessed the potential climate-related impacts between now and 2050 as part of its risk management strategy. The strategy is aligned with the Task Force on Climate-related Financial Disclosures (TCFD). As a result, GF defined material physical and transition risks and opportunities as a foundation for future risk management, in addition to various adaptation and mitigation activities.

✚ [More information in the TCFD Report \(Annual Report 2021\)](#)

Management systems

Environmental management systems (EMSs) promote the efficient use of resources and enable facilities to take immediate action if consumption data show significant deviations. EMSs also help facility operators to develop a systematic approach to increasing energy efficiency and reducing energy consumption. At the end of 2021, 91% of GF's production facilities had EMSs in place and were certified to ISO 14001, an internationally recognized standard for environmental management systems. Eight facilities from GF Piping Systems and GF Casting Solutions were certified to the energy management standard ISO 50001.¹⁶ These eight sites account for 45% of GF's total energy consumption.

In addition, 85% of GF production facilities had an occupational health and safety management system in place and certified to ISO 45001.

Moreover, 95% of GF's production facilities and a majority of sales companies have quality management systems certified to ISO 9001 and IATF (ISO TS) 16949.

Climate change score from CDP

In the 2021 CDP reporting cycle, GF retained its climate change score of A- (Leadership level).

Energy consumption

In the year under review, with an increase of the order intake by 28% relative to 2020, GF's net energy consumption also increased by 20% to 3.6 million gigajoules (GJ), an increase of 2% compared to 2019 (before COVID-19). In 2020, GF's production volume decreased due to COVID-19, and therefore its electricity consumption was also lower compared to 2021. In the current reporting period, GF's overall increase in energy consumption was mainly due to an 12% rise in electricity use and two additional production sites being included in the reporting scope in 2021. Compared to 2019 (thus, before COVID-19), GF's electricity consumption in 2021 actually decreased by 3.5% due to various factors, including its divestment of an iron plant at the end of 2019.

To reduce its overall energy consumption, GF initiated several measures at its sites in 2021. These efforts also included energy-saving measures, such as LED lighting installations, as part of GF's green electricity fund created in Switzerland in 2020. The fund aims to insource the amount spent on renewable electricity certificates and incentivize energy-saving measures. GF's facilities pay an internal charge and can submit grant proposals to the fund to subsidize energy-efficiency initiatives and the self-generation of renewable energy. For example, a GF Piping Systems site in Schaffhausen (Switzerland) replaced the old lighting in its production area with highly efficient LED spotlights and a control system in 2021. The new, highly efficient LED spotlights increase illuminance by about 50% while using two-thirds less energy than the previous system. Moreover, the control system ensures that the lighting is dimmed or switched off depending on the amount of daylight. During the project, about 2'000 fluorescent tubes were replaced with new LED spotlights.



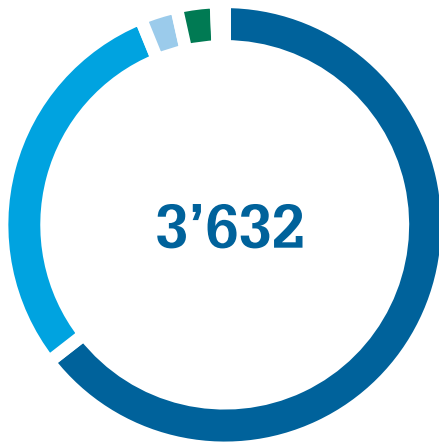
A GF Piping Systems site in Sichuan (China) achieved energy savings by replacing inefficient water pumps in its production hall with new energy-saving water pumps, which reduced the site’s energy consumption by 3% in 2021 compared to the previous year. GF Piping Systems initiated several energy-efficiency programs at its sites, notably in Germany and the US. Those programs include investing in more efficient cooling systems, replacing old injection molding machines with more efficient units and using cooling water treatment technology to reduce waste heat. These programs are a continuation of efforts in the previous year, such as the one in Malaysia that has since led to measurable progress in terms of improving energy efficiency and reducing CO₂ emissions.

Additionally, GF Casting Solutions site in Suzhou (China), relocated a large furnace to reduce the energy consumption of its entire melting process. By optimizing the shop floor layout, energy consumption for the entire melting process was reduced.

Composition of energy sources

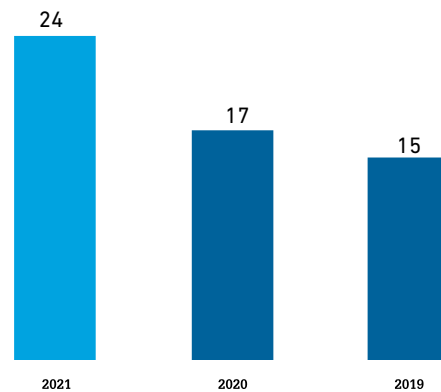
In addition to the amount of energy GF consumes, the composition of its energy sources is equally relevant to its environmental footprint.

Energy sources 2021
In %



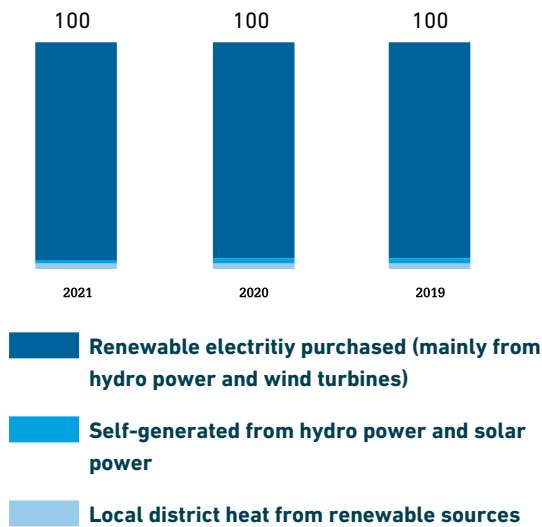
- 64% Electricity**
- 29% Natural gas, fuel oil**
- 3% Coke**
- 3% Fuel use (for internal transportation)**
- 1% Other energy sources**

Renewable energy (incl. certified green electricity)
In %



Renewable energy sources

In %



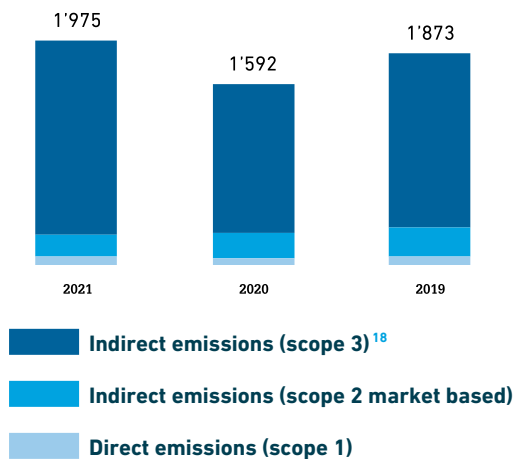
Renewables represented 24% of GF's total energy consumption in 2021 (up from 17% in 2020). The vast majority (96%) was due to the purchase of 835'095 GJ of renewable electricity, primarily from hydro power and wind turbines. The remainder of the renewable energy was self-generated hydro and solar power as well as purchased renewable district heat.¹⁷

To increase the share of renewables in GF's energy mix, GF Casting Solutions purchased green electricity for its facilities in Austria and for one site in China. Currently, eight GF facilities generate their own solar or hydro power. In total, they generated 14'700 GJ of renewable electricity in 2021. A GF Piping Systems facility in Irvine (USA) installed a rooftop solar system that generated more than 500 megawatt hours (MWh) in its first year and covered 35% of the site's total electricity consumption in 2021.

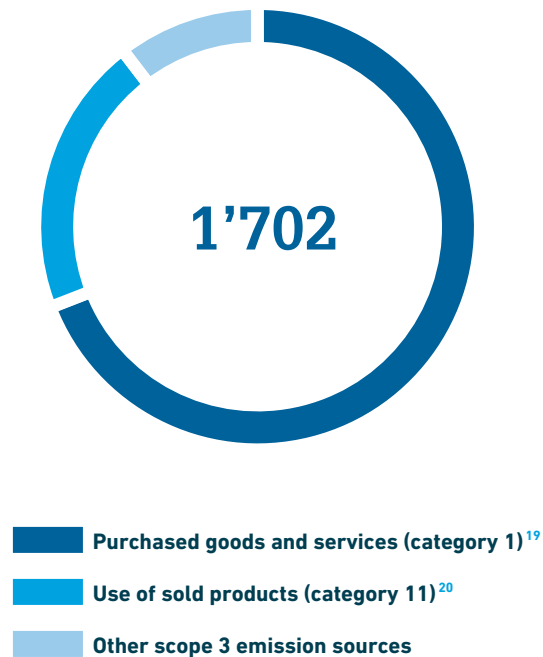
Over the next five years, GF will increasingly replace fossil-fuel energy with energy from renewable sources. GF's roadmap to meet the science-based target (SBT) within this strategy period also includes plans to increase the company's purchase and to generate its own renewable electricity, as well as launch new energy-saving measures and substitute internal combustion engine vehicles with electric models. In 2021, GF conducted a feasibility study on the profitability of PV installations for Switzerland, with the aim of a global roll-out in the years to come.

GHG emissions

Total CO₂e emissions (scope 1, 2 and 3)
In 1'000 tonnes



Scope 3 emission sources 2021
In 1'000 tonnes CO₂e



Total CO₂e emissions (scope 1, 2 and 3) increased by 5% in 2021 compared to 2019. GF distinguishes between its GHG emission sources to align with the international community's efforts to meet the goals of the Paris Agreement.

The majority (86%) of GF's total GHG emissions occur in GF's value chain and are classified as scope 3 emissions. Previously, GF's scope 3 emissions calculations only included business travel. In the year under review, for the first time, GF calculated its scope 3 emissions in all 15 categories in accordance with the GHG Protocol. Four of these categories were deemed irrelevant, while two of the remaining 11 categories were identified as material in the 2021 emission inventory as they contribute to 90% of GF's scope 3 emissions.²¹ As a result, GF focuses in the future on purchased goods and services (category 1¹⁹) and use of sold products (category 11).

■ Purchased good and services (Category 1)

This category includes all upstream emissions from the production of products either purchased or acquired by GF. Products include both goods (tangible products) and services (intangible products, considered immaterial). In order to manufacture and assemble their products, GF's three divisions purchase a variety of materials (including plastics, aluminum and magnesium) that are associated with elevated amounts of GHG emissions during their manufacturing processes. This category accounts for 69% of total scope 3 emissions in 2021.

■ Use of sold products (Category 11)

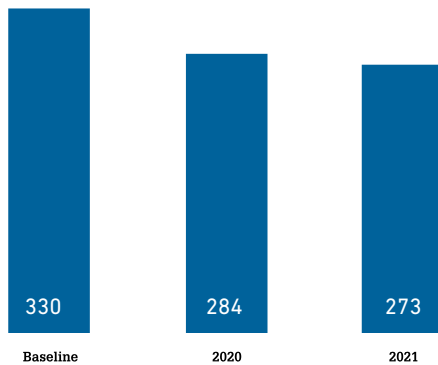
This category includes emissions from the use of goods and services sold by GF Machining Solutions. These machines consume energy during their operation, creating emissions during their use phase. Therefore, GF aims to provide energy-efficient machines to support its customers in achieving their science-based targets. This category accounts for 21% of total scope 3 emissions in 2021. Due to the business of GF Piping Systems and GF Casting Solutions category 11 is of less importance and therefore excluded.

The remaining 14% consists of scope 1 emissions resulting from the consumption of fossil fuels at GF's operations (4%) and scope 2 emissions resulting from operations electricity consumption (10%).^{22, 23}

Target achievement: CO₂e emissions

As previously described in this chapter, GF's Sustainability Framework 2025 contains the target to reduce its scope 1 and 2 CO₂e emissions in absolute terms by 21% from 2021 to 2025.

CO₂e emissions (scope 1 and 2) In 1'000 tonnes



GF is on track with its reduction target – based on the 1.5°C global warming target of the SBTi – for scope 1 and 2 emissions in 2021. Total scope 1 and 2 emissions decreased by 17% compared to the 2019 baseline. In the year under review, scope 1 and 2 emissions decreased by 4% compared to 2020.

Scope 1 emissions increased by 9% compared to the 2019 baseline. The increase in scope 1 emissions is mainly due to the expansion of reporting on fuel consumption for company cars. In 2021, all GF sales companies reported their fuel consumption for company cars for the first time.

In addition to saving energy in its production sites, GF is also focused on reducing its scope 1 emissions by transforming its vehicle fleet to non-fossil fuel power trains. Therefore, the GF Corporate Policy on E-mobility came into effect in 2021. The policy is GF's framework for transitioning its global vehicle fleet from traditional fossil fuel combustion engines to electric and hybrid fuel cell power trains and any sustainable technologies that emerge in the future. For example, in December 2021, a GF Piping Systems site in Dautphetal (Germany) began converting its company cars by replacing diesel vehicles with hybrid models. Overall, GF had 25 e-cars (including full electric vehicles and hybrid cars) across 13 sites in 2021. In the coming years, each site will switch to e-cars based on the replacement cycle of their fleet contracts.

+ GF Corporate Policy: E-mobility

Scope 2 emissions decreased by 28% compared to the 2019 baseline. In 2021, the company purchased renewable electricity for GF Casting Solutions sites in Austria and one in China, GF Piping Systems and GF Machining Solutions sites in Switzerland, and for one GF Piping Systems site in Turkey. These purchases made a positive contribution to reducing GF's overall scope 2 emissions. In addition, GF benefitted from an update of the emission factors, reflecting the trend towards renewable energy in the majority of countries where it operates.

+ GRI 302-1 | GRI 302-4 | GRI 305-1 | GRI 305-2 | GRI 305-3 | GRI 305-5

¹⁴ The latest materiality assessment was conducted in mid-2019 and finalized during 2020. For detailed information about the assessment, see the chapter [Topics of material importance](#).

¹⁵ Major assumptions taken to calculate scope 3 emissions, are described in the section [About the report](#).

- ¹⁶ The following GF facilities are ISO 50001 certified: GF Piping Systems: Deka GmbH and GF Fluoropolymer Products GmbH (both in Germany). GF Casting Solutions: Kunshan, Suzhou (both in China), Leipzig, Werdohl (Germany), Altenmarkt, and both sites in Herzogenburg (all in Austria). In addition, GF Linamar (USA) will receive its certification in the near future.
- ¹⁷ Biogas was only purchased in 2019. As its share of the total renewable energy is less than 0.01%, it is excluded from the graph.
- ¹⁸ Scope 3 emissions were calculated retroactively in accordance with the 11 relevant categories for GF of the Greenhouse Gas Protocols for 2019 and 2020.
- ¹⁹ Services were excluded from the purchased goods and services category due to the low emission intensity compared to the raw materials purchased for all three divisions.
- ²⁰ For both GF Piping Systems and GF Casting Solutions, the products don't consume energy in the use phase, whereas for GF Machining Solutions, energy is consumed for its EDM, milling and laser machines.
- ²¹ The comprehensive list of the relevant 11 scope 3 categories are published in the chapter [environmental performance](#)
- ²² GF has Scope 1 emissions because it consumes natural gas, coke and oil (for example, for heating and process heat) as well as petrol, LPG and CNG (for example, for company transportation).
- ²³ Indirect emissions (Scope 2) stem from purchased and consumed energy at GF plants and are not emitted by the company itself. GF publishes both the amount of Scope 2 market-based emissions and location-based emissions. Market-based emissions figures refer to the emission factors of individual electricity supplier and show emissions with instruments that were applied to offset them. For example, the purchase of renewable electricity certificates is considered an instrument and is directly subtracted from the total amount of emissions.

Water footprint

Although GF's operations are not generally water-intensive, it is a valuable resource used throughout the value chain. In addition, GF believes access to clean water and leak-free water transport is an urgent social issue. Therefore, the company is continually working to manage its water footprint in the most sustainable way.

From a manufacturing perspective, GF's water consumption has a smaller impact on its environmental footprint than GHG emissions and waste generation, as most of its processes are not water intensive. Nonetheless, GF's latest materiality analysis indicated that sustainably managing its water footprint is a growing priority for its stakeholders and customers²⁴.

Water security score from CDP

In the 2021 CDP reporting cycle, GF retained its water security score of A– (Leadership level), which cemented its position as a sustainability leader.

In its [Sustainability Framework](#), GF set a target to reduce the water intensity of its production sites that have significant annual water consumption and operate in water-scarce areas by 20% by 2025 compared to an average baseline from 2018–2020. A project team consisting of representatives from the corporate and divisional sustainability teams identified 14 GF production sites across all three divisions falling within the scope of this target. As in a previous analysis, GF used the World Resources Institute (WRI) [water aqueduct tool](#) to determine which of its facilities are located in water-stressed areas.



Water

Reduce **water intensity by 20%** in high-stress areas

Water management

GF's environmental management systems (EMSs) promote the efficient use of all resources and help its facilities to set objectives and targets (such as reducing water consumption) and then monitor their progress.

[+ More information on GF's EMSs in the chapter: GHG emissions](#)

GF's [Corporate Environmental Policy](#) lays out the company's aim to continuously decrease water usage, especially in water-scarce areas, in addition to promoting water reuse and reducing wastewater discharge.

GF's [Code for Business Partners](#) stipulates that business partners shall monitor and document their water consumption and quality to continuously improve their use of this natural resource. Business partners located in areas affected by water scarcity or water stress are also encouraged to economize their consumption and secure their existing and future water supplies. Additionally, GF's business partners must implement more responsible water treatment and wastewater discharge procedures.

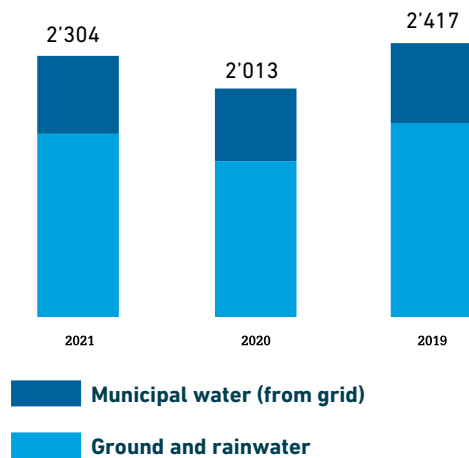
GF Piping Systems provides solutions in its [product portfolio](#) for optimal water management. Therefore, GF uses these solutions at its production sites whenever feasible, such as the GF Piping Systems' facility in Schaffhausen (Switzerland) and in the new plant in Yangzhou (China), where the process water cooling system is equipped with COOL-FIT. These solutions also have the wider benefit of helping GF's customers to reduce their water footprint.

Water consumption of GF facilities

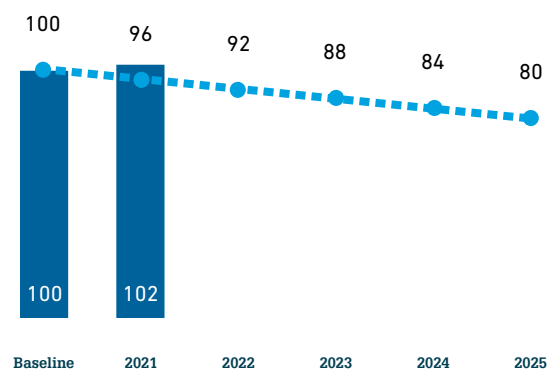
In general, GF's production facilities do not consume large volumes of water and typically only use small amounts in closed-loop cycles for cooling purposes. However, water use is particularly high in upstream processes such as aluminum and plastic manufacturing.

GF's facilities discharge the majority of their water as unpolluted water into natural systems (such as rivers) and the rest into municipal sewage systems. In addition, some of the facilities' water evaporates during cooling processes. All sites comply with the applicable laws and regulations governing wastewater discharge. Furthermore, GF Casting Solutions' sites also comply with specific additional wastewater-discharge requirements.

Water consumption
In 1'000 m³



Water intensity index
(water consumption per production volume²⁵) in %



Across all facilities, GF's total water consumption increased by 14% in 2021 compared to 2020. As GF's overall production in 2020 was reduced due to COVID-19, water consumption was also lower during that year. Therefore, compared to the pre-COVID-19 year of 2019, GF's total water consumption actually decreased by 5% in 2021. As in previous years, the majority (70%) of GF's water supply came from ground and rain water.

To reduce their water consumption, the divisions are developing various conservation measures. For example, in 2021, a GF Casting Solutions site in Linamar (US) implemented a daily “closed-loop” water usage check in its maintenance department. This initiative enables the facility to monitor its production floor usage and fix any identified leaks. Due to the ramp-up phase, the new measure did not decrease water consumption in the year under review.

Target achievement: Water in water-stressed areas

For the strategy cycle 2025, GF set a goal to reduce water intensity by 20% in the areas with high water stress compared with the baseline. This target is binding for a total of 14 facilities across all three divisions.

Compared to the baseline (2018–2020 average), the water consumption of these facilities increased by 2%, which exceeds the target in the Sustainability Framework. Due to a significant leakage at a GF Casting Solutions site, its water consumption increased at a higher rate than its production volume and therefore its target was not achieved. The site successfully fixed the water leakage in the third quarter of 2021, but it was unable to compensate for the increase in consumption.

Nevertheless, some sites in water-stressed areas decreased their water usage through various initiatives and measures. For example, the GF Piping Systems site in Jawa Barat (Indonesia) has restricted its ground water consumption by installing limiters on its deep well pumps, recycling and reusing waste water, repairing a wall separator tank and launching a water balance program. Through these measures, the site reduced its ground water usage by 28% in 2021 compared to 2020.

+ GRI 303-1 | GRI 303-2 | GRI 303-5

²⁴ The latest materiality assessment was conducted in mid-2019 and finalized during 2020. For detailed information about the assessment see the chapter: [Topics of material importance](#).

²⁵ GF's divisions define production volume according to the nature of their particular business. GF Piping Systems defines it as “metric tonnes produced,” GF Casting Solutions as “gross value added” (operating income less the cost of materials and products, changes in inventory, and operating expenses), and GF Machining Solutions as “hours worked.”

Natural resources, materials and waste management

GF believes it is essential to promote responsible resource and waste management. Therefore, using a holistic approach, it is redesigning its production processes to improve sustainability and close material loops.

The company relies on various natural resources and other materials to manufacture its high-quality products. At the same time, GF has assessed the environmental impacts of its direct operations and found that waste generated during production is one of the largest components of its environmental footprint.²⁶ Although the majority of GF's waste is non-hazardous, the company has a responsibility to minimize both hazardous and non-hazardous waste. Therefore, GF is striving to implement circular economy principles wherever possible, including finding new and effective ways to reuse and recycle materials.

GF's [Sustainability Framework](#) emphasizes the company's aim to improve its waste disposal methods. The framework sets a target to reduce the intensity of waste (hazardous and non-hazardous) sent to landfill or incineration by 20% by 2025, compared with the average for 2018–2020.



Waste
Reduce **waste intensity by 20%**
sent to landfill or incineration

To reach this target, GF is continually working to minimize waste, identify new recycling methods and apply circular economy approaches to the materials used by its three divisions. Many of the waste materials from GF's production processes can be reused by other industrial companies, helping to reduce the overall demand for energy and resources. Some examples include using GF's manufacturing by-products as a substitute for fossil fuels or as inputs for cement production. The castings from GF Casting Solutions are also 100% recyclable and can be reused in a circular fashion, regardless of whether they are made of aluminum or magnesium.

[+ More information on reuse and recycling of materials in the chapter: Product portfolio](#)

GF's adoption of circular economy principles

The three GF divisions have put on their agenda initiatives that focus on sourcing reusable materials and components, as well as revising GF's waste management processes to enable reuse.

In 2021, GF launched a circular economy project with a series of cross-divisional workshops to develop a shared understanding of the circular economy concept and initiatives to promote its adoption. The project defined six new pilot programs to improve the way GF designs, produces, repairs and re-manufactures its products. GF will implement these projects throughout 2022.

[+ More information on circular economy](#)

Furthermore, GF conducted various activities to ensure its products offer the greatest lifetime value, and worked to extend their lifespans by reusing, refurbishing, remanufacturing and recycling them after their primary use. This includes circular economy activities using the value hill model.

In 2021, GF Piping Systems realized a new initiative at its site in Ettenheim (Germany). The objective was to rework fluoropolymers generated as rejects in the production process for the manufacturing of new products. In the project, a pipe series was implemented made from 100% of the site's own reworked polyvinylidene fluoride (PVDF). These SYGEF Eco pipes meet high quality standards. Reworked PVDF granules cause up to 90% less CO₂e emissions than new ones, as most of the CO₂e emissions occur during the initial production process of the original PVDF granules. In addition to improving the carbon footprint of fluoropolymers, this process helps to tackle the extremely tight global PVDF raw materials situation – and it is a promising use case for the circular economy approach.

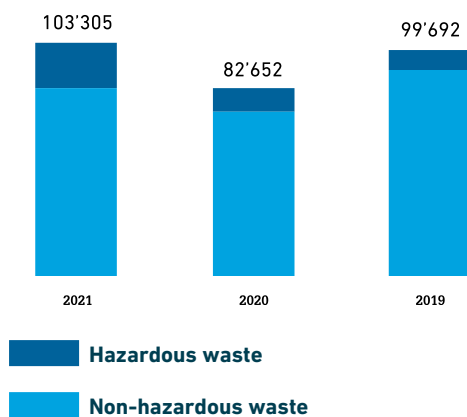
➤ [More information on GF's projects in the chapter: Product portfolio](#)

Waste management

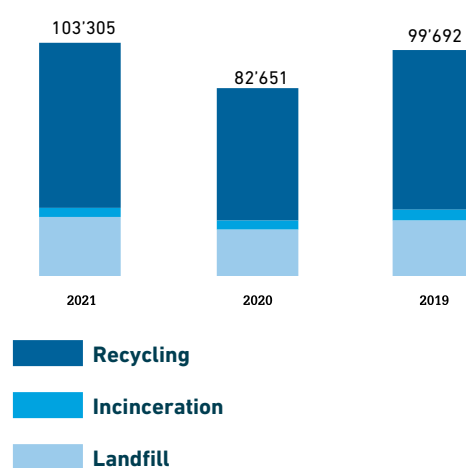
GF's environmental management systems oversee the planning (objective and target setting) and monitoring of waste in its facilities. In its [Corporate Environmental Policy](#), GF commits to reducing its use of harmful substances, seeking new opportunities to lower its raw material consumption and applying circular economy principles to its material sourcing. Wherever possible, GF will explore and apply recycling methods. In cases where it is unavoidable, the company is committed to reducing the amount of waste it sends to landfill or incineration, especially when involving hazardous waste. The GF [Code for Business Partners](#), sets out clear guidelines for our business partners to avoid and reduce waste.

Amount and composition of waste

Composition of waste
In tonnes



Waste disposal
In tonnes



In the year under review, GF's total amount of waste increased by 25% compared to 2020 (a 4% increase from the pre-COVID-19 year of 2019). The share of hazardous waste increased from 12% in 2020 to 20% in 2021, with 80% of GF's total waste being non-hazardous. This growth is due to the dismantling and relocation of a GF Casting Solutions site. Six production facilities of GF Casting Solutions and two production facilities of GF Piping Systems account for

90% of GF's total hazardous waste. Some of these facilities have site-specific targets to reduce hazardous waste and track them at the site level.

In line with the increase of GF's order intake (28% in 2021), the waste volume also increased. Some of this increase is due to a GF Castings Solutions site that started reporting in 2021, and another site that is still in the ramp-up phase.

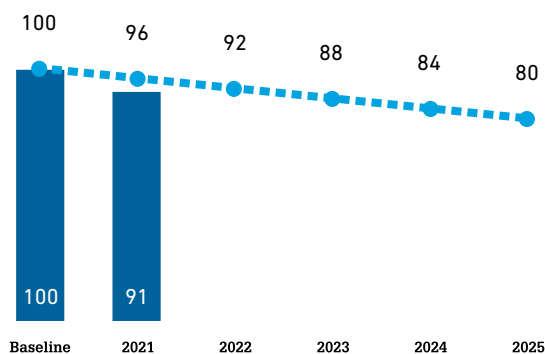
GF recycles the majority of its waste (71%). Most of the waste which cannot be recycled is either form-sand used in iron foundries or waste-water sludge, a byproduct of on-site waste-water treatment used in the casting process. Where possible, GF treats this waste on-site, which allows the treated water to be dispatched into public or private sewer systems. In cases where it cannot be processed on-site, it is discharged in compliance with local and federal requirements. In addition, some GF companies sold their waste material in 2021, which generated additional income and highlighted the value of a circular economy approach.

In addition to the high percentage of recycled waste, GF also designs its products and solutions to last for a very long time. Examples include:

- solutions from GF Piping Systems that last 50 years or longer, machines from GF Machining Solutions that can be used for 20 years;
- components from GF Casting Solutions that can be remelted infinitely, due to the embedded material stamps that identify the makeup of their respective alloys used; and
- machines from GF Machining Solutions that can be used for 20 years,

Target achievement: Unrecycled waste intensity

Unrecycled waste intensity index²⁷
(unrecycled waste per production volume²⁸) in %



As described above, GF set targets in its Sustainability Framework to reduce waste intensity (hazardous and non-hazardous) sent to landfill or incineration by 20% by 2025 compared to the average for 2018–2020.

At the end of 2021, the unrecycled waste intensity index was 9% below the baseline (2018–2020 average) and thus in line with GF's Sustainability Framework target. This achievement was mainly due to comprehensive waste data from a waste-management partner at one of GF Casting Solutions' sites, and a recycling project started by GF Piping Systems. In addition, non-recycled waste increased at a lower rate than the production volume increase, which also contributed to achieving this target.

In 2021, a GF Piping Systems site in Irvine (USA) started preventing disc leftovers from ending up in landfills. A particular part made at the site creates a large disc leftover when it is machined, and whereas it was previously discarded, the site now uses it to machine new parts that can reuse this disc.

+ GRI 306-1 | GRI 306-2 | GRI 306-3 | GRI 306-4 | GRI 306-5

²⁶ The latest materiality assessment was conducted in mid-2019 and finalized during 2020. For detailed information about the assessment see the chapter: [Topics of material importance](#).

²⁷ The target line is calculated linearly based on the standardized baseline consumption (=100) and according to the defined target.

²⁸ GF's divisions define production volume according to the nature of their particular business. GF Piping Systems defines it as "metric tonnes produced," GF Casting Solutions as "gross value added" (operating income less the cost of materials and products, changes in inventory, and operating expenses), and GF Machining Solutions as "hours worked."

Responsible supply chain

For GF, sustainable management includes building and maintaining trusting, long-term relationships with its sourcing and logistics partners.

In addition to economic considerations, GF expects business partners to demonstrate ethical conduct and comply with all relevant laws, regulations, as well as international social and environmental standards. GF considers this behavior – along with efficient and environmentally friendly transport solutions – to be a critical aspect of both good business conduct and the progress toward our company's goals.²⁹

GF engages in sustainability efforts throughout the value chain and is committed to extending the same standards to its suppliers. In its [Sustainability Framework 2025](#), GF set a goal to conduct a comprehensive sustainability assessment for 80% of its procurement spend, which covers around 1,000 suppliers. To achieve this five-year goal, GF aims to assess 16% of its procurement spend annually. In 2021, the company achieved this goal in all three divisions.



Supply chain
Perform **sustainability assessments for 80%** of procurement spend

Code for Business Partners

The GF [Code for Business Partners](#) plays a crucial role in the context of procurement. In 2021, GF updated the code to include specific requirements regarding [water consumption](#). Following the release of the amended Code for Business Partners, GF Piping Systems added the Code to its Purchase Agreement with key suppliers, and GF Casting Solutions and GF Machining Solutions added the Code to their General Purchase Conditions. In addition, 74% of the banks GF is working with accepted the Code for Business Partners.

Furthermore, GF's supplier onboarding process and periodic evaluations contain several sustainability criteria. These include, but are not limited to, questions about human rights, environmental risk exposure, health and safety in the manufacturing process, as well as compliance with relevant legislation such as REACH, the Dodd-Frank Act and the Consumer Protection Act. For example, GF is committed to ensuring that its supply chain has no conflict minerals. Due to the complexity of tracing the minerals' origins, the evaluation process is a step-by-step effort. Based on information obtained from suppliers, GF has no knowledge of any conflict minerals being present in the materials it purchased in 2021 to manufacture its products.

[+ GF Corporate Conflict Minerals Policy](#)

Responsible supply chain management

To conduct the sustainability assessments set out in its Sustainability Framework, GF has partnered with the external rating agency EcoVadis. The assessment provided by EcoVadis focuses on four themes: environment, labor and human rights, ethics, and sustainable procurement. Each assessment is adapted based on company size, industry and country. In addition, as some other companies provide the same service as EcoVadis, GF also accepts their ratings if the scope and detail are comparable to the EcoVadis assessment. Furthermore, GF Piping Systems developed a comprehensive sustainability risk screening that serves as a first assessment. This risk screening covers the four EcoVadis themes combined with a country-specific ESG score. If the supplier is categorized as "mid to high-risk", it is invited to join the EcoVadis assessment.

In 2021, GF's responsible procurement team conducted an initial pilot phase to familiarize itself with the process. Its goal was to more clearly understand how suppliers reacted to assessment invitations and how much additional support they required. In September, it started the internal evaluation process to select the suppliers based on risk assessment criteria, spend volume and the broader rollout of the program. In the first year, approximately 400 suppliers across various sectors, countries and company sizes were invited to take part in the assessment. A kick-off webinar accompanied the broader rollout to provide further details about the program and general sustainability issues within the supply chain.

The next steps of the high-level process until 2025 include:

1. risk assessments of purchased commodities for GF Piping Systems and GF Casting Solutions
2. supplier self-assessments conducted by EcoVadis or a similar assessment for key suppliers and those identified as higher risk in the internal risk assessment
3. follow-up and engagement with the suppliers requiring improvement

While GF prefers its suppliers to use third-party assessments, it recognizes that this is not always feasible, especially for smaller partners. That is why GF also developed its own self-assessment questionnaire in 2021. It contains questions based on EcoVadis assessments and will be introduced in 2022. GF will offer its questionnaire to smaller suppliers and then evaluate the results to ensure a robust analysis of the responses.

Overall, the long-term goal is to ensure that all new key suppliers provide a third-party sustainability assessment when starting their business relationship with GF.

Supplier assessment results

At the end of 2021, GF had conducted sustainability assessments on 34% of its procurement spend, equal to approximately 300 new and existing key suppliers. Approximately 70% received a very good score, indicating that the majority of GF's suppliers already have sustainability measures in place. The remaining 30% of the assessed suppliers received a score below 45 points (on a scale of 0–100, with 100 being the highest), indicating average or insufficient CSR performance in the four assessment categories.

In the year to come, GF will focus on developing those suppliers with a lower score by agreeing on improvement measures and, if necessary, coordinating third-party audits. In step 3 of the process listed above, GF will define improvement measures in a detailed, meaningful and pragmatic way in 2022.

New whistleblower channel

In 2021, the company implemented the GF Transparency Line, a new state-of-the-art reporting channel, through an independent external provider. This is a communication channel for its employees and any external stakeholder to report suspected or known misconduct. GF's suppliers can also use the line to make anonymous reports 24/7 in several languages. The GF Transparency Line reflects our expectation that our employees and partners conduct business in an ethical and responsible way. The GF Transparency Line complies with the EU directive to increase the protection of whistleblowers wishing to draw attention to actual or possible wrongdoing within a company, such as fraud, theft, sexual harassment, discrimination or disregard of security regulations.

+ https://www.bkms-system.com/georgfischer_en

UN Global Compact Working Group

Since early 2019, GF has been an active participant in the Sustainable Supply Chains working group organized by the [UN Global Compact's Swiss network](#). This group serves as a forum for companies to share knowledge and best practices on a number of important topics. These include improvements to supply chain visibility and traceability, supply chain risk assessment, supplier engagement and human rights due diligence. In 2021, the group met and worked virtually due to COVID-19. The network's discussions focused on how to assess the sustainability performance of suppliers and how companies can implement effective supplier assessment programs.

+ GRI 308-1 | GRI 414-2

²⁹ GF identified responsible supply chain management as a topic of material importance in its latest materiality assessment, which it conducted in mid-2019 and finalized during 2020. For detailed information about the assessment, see the chapter: [Topics of material importance](#).

Diversity and inclusion

GF is a global organization represented by a diverse network of employees from all corners of the world. The diversity of cultures, religions, nationalities, genders, sexual orientations, ages, as well as physical and mental abilities is a valuable source of talent, creativity and innovation.

GF's stakeholders have recognized the importance of diversity, equal opportunities and inclusion and [identified the theme "fair and attractive employer" as highly material for the Corporation.](#)

The goals of the Sustainability Framework 2025 guide GF's decisions and will ultimately help to create a more diverse and inclusive work environment. In its Sustainability Framework, GF has set a target that, by 2025, 25% of its newly appointed managers are women while also addressing the broader aspects of diversity and inclusion worldwide. In 2021, GF exceeded this target, as 30% of newly appointed managers were women. Based on these results, GF will continue with its diversity measures.



Diversity and inclusion
25% of newly appointed managers are women

Gender balance

At the end of 2021, 19.5% of GF employees were women (2'817 FTEs). In 2021, 15.8% (114 FTEs) of GF managers were women – the same percentage as in 2020 (97 FTEs).

In the last few years, GF has initiated a variety of measures to improve the gender balance of its global workforce. For example, in line with the Sustainability Framework 2025, all shortlists for vacant management positions should now generally include at least one woman.

To raise awareness about the strengths of diversity and to promote its broader adoption, GF launched two new training programs in 2021. The "Women in Leadership" program contains training sessions on topics such as communication, appearance and mindset. They include group workshops as well as two individual online coaching sessions for each participant. There are also virtual peer group meetings organized by the participants themselves. In November 2021, GF started the pilot phase of the program with a total of six women leaders from Germany, Austria and Switzerland. The program will be officially rolled out in 2022. Additionally, together with the University of St Gallen, GF developed a pilot training program on unconscious bias. This training focuses on biases in recruiting, promotion and performance evaluation and is suitable for all human resources managers and executives involved in these processes.

More information on the composition of governance bodies and the gender and age demographics of GF's workforce in the chapter: [Social performance indicators.](#)

Setting a diversity-related target in the Sustainability Framework is one of several measures GF has identified to promote diversity. The federally funded wage equality analysis underscores GF's fair and equitable wages across the genders. In addition, special attention is being paid to succession planning for, and the development and promotion of, female employees. The regular exchanges with the two Board members, Eveline Saupper and Jasmin Staiblin, which are open to all interested employees, have been especially well received. A further sign is set by the nomination of 39-year-old Japanese manager [Ayano Senaha](#) to the Board of Directors. This nomination was made based on her international experience and extensive competence in the fields of digitalization, sustainability, and governance.

For several years now, in Switzerland, GF has voluntarily granted all expectant mothers a job guarantee of 12 months in a comparable position from the date of their child's birth. This exceeds the requirements of the collective employment agreement. This program also offers the fathers of newborns two additional weeks of paternity leave, and the mothers of newborns three additional weeks of maternity leave, beyond the existing provisions under the collective employment agreement and Swiss law. This not only helps improve GF's overall gender balance: it also makes it easier for new parents to return to work. GF is endeavoring to find similar solutions in other countries in line with their laws.

GF also attends career fairs like Women's Contact Day in Zurich, Switzerland, which focus on highly talented women professionals and university graduates. Most career fairs took place virtually in 2021. This gave university graduates the opportunity to live-chat with current GF employees and to learn more about working at GF.



Diversity in a broader sense

GF believes that diversity extends beyond gender and does not tolerate discrimination on the basis of any personal attribute.³⁰ The prohibition of any form of discrimination is stipulated by GF's [Code of Conduct](#). GF also strives to foster a workplace culture that welcomes, includes and values everyone. GF welcomes applications from people with a disability and supports their integration into the company. At the end of 2021, there were 115 employees with disabilities working at GF (0.8% of the total workforce).

During the reporting period no incidence of discrimination was reported.

GF also focuses on employees who are approaching retirement. These employees have a wealth of knowledge and experience. GF therefore offers them a wide range of opportunities to share their expertise with the next generation of GF specialists and to facilitate their personal transition to the next phase of their life. In Schaffhausen (Switzerland), GF conducts awareness training sessions on pre-retirement. The subjects include managing personal finances and remaining active physically and mentally.

In addition, GF offers its employees in Switzerland aged 45 and older an awareness program focusing on issues related to the last third of their professional lives, such as financial and pension security.

+ GRI 404-2 | GRI 405-1 | GRI 406-1

³⁰ Examples include, but are not limited to, gender, race, skin color, origin, disability, religion, sexual orientation, political affiliation, and familial status.

Business culture and employee engagement

GF's employees are critical to its success, as it can only make progress through their work, motivation and commitment. They are GF's engine and continually challenge the company to deliver the most sustainable and forward-thinking solutions.

At the end of 2021, GF employed a total of 15'111 people. This headcount corresponds to 14'532 full-time equivalents (FTEs).

[+ More information in the chapter: Social performance indicators](#)

Subjects such as learning, development, talent retention and attraction are essential to GF's employees and therefore also to GF. Additionally, [the parent theme "fair and attractive employer" was identified as highly material by GF's stakeholders.](#)

GF highlights the importance and value of its workforce in its [Strategy 2025](#). In it, one of the three strategic focus areas entails evolving the company culture towards more performance and learning (see Culture Movement). In addition, GF's [Sustainability Framework 2025](#), which is embedded in the Strategy 2025 and guides GF's actions as an employer, includes an employee engagement target: that at least 80% of employees would recommend GF as an employer of choice by 2025.



Employee engagement
At least **80%** recommend GF
as an employer of choice

GF as an attractive employer

As a progressive employer with a focus on sustainability and innovation, GF strives to promote a team-oriented corporate culture. This also includes employment conditions that are in line with the market.

The first global employee engagement survey following the implementation of the Strategy 2025 is planned for 2022. Among other topics, it will assess how many employees would recommend GF as a preferred employer. The survey will also include questions regarding the Strategy 2025, the new values and the implementation of the Culture Movement (see below).

In the reporting year, the company carried out a large-scale study aimed at helping it to consolidate its position as an attractive employer. The evaluation included a survey on employer attractiveness at GF locations worldwide. This feedback analysis served as the basis for new and modernized employer branding. For example, in response to the survey's results, GF aims to adhere to more gender-sensitive language in its job advertisements and social media campaigns.

In addition, GF Machining Solutions carried out an employee satisfaction survey at the end of 2021. The survey related to the new Strategy 2025 and subjects such as leadership and management and the work environment. In addition, GF queried the net promoter score, which records whether employees would recommend GF Machining Solutions as an employer. At the time of reporting, the survey results were not yet available.



Culture Movement

Employees play a leading role in the realization of the [Strategy 2025](#). To achieve this, GF is working to evolve the culture towards more performance and learning by setting up a number of initiatives. One of the highlights during the year was the largest-ever hybrid town hall meeting, which kicked off the Culture Movement at the end of November. Around 3'000 employees from around the globe joined corporate management for the online event and shared their questions and thoughts on GF values.

The new corporate culture – as well as GF's [three new values](#) related to Performance, Learning, and Caring – is a means to encourage all employees to shape the future together. The GF culture focuses on building highly efficient teams, creating a caring environment and encouraging learning to unleash the full potential of GF's employees. The Culture Movement includes all employees at all seniority levels and strives to anchor these new corporate values in their daily activities. This objective is to be achieved in two ways. The first is through a range of communication initiatives and a multi-day leadership course for upper management that is geared towards the new culture. The second is from the ground up, as every individual employee takes on an active role in the change process. Selected employees are working as "change agents" to help convey the new values and behaviors to their local teams.

Our three new values

- + Performance is about speed and excellence.
- + Learning is about having an open mind.
- + Caring is about being part of a team.



GF will continually evaluate whether its new corporate culture is being successfully implemented. In 2022, GF will introduce monthly “pulse checks” – brief surveys that can be answered in five minutes – to measure employee engagement and track the impact of the new cultural movement throughout the company.

Employee development and success

Training and apprenticeships

GF has been training apprentices in technical and commercial professions for over 100 years. This dual education system approach is pursued at its Swiss, German, and Austrian locations, as well as in the US. Alongside the talent search at universities and colleges, this model is an important instrument for promoting GF's own young talent over the long term and for familiarizing young people with the corporate culture at an early stage. Dual training is one of the significant strengths of the Swiss economy, which is why GF is expanding the Swiss model of apprenticeship to other global locations.

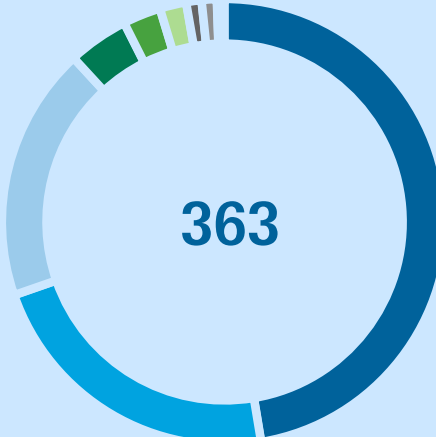


Number of apprentices



- GF Corporation
- GF Piping Systems
- GF Casting Solutions
- GF Machining Solutions

Number of apprentices per country

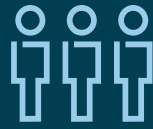


- 47% Switzerland
- 22% Austria
- 19% Germany
- 4% China
- 3% USA
- 2% Italy
- 1% India
- 1% Spain, France
- 1% Brazil, UK

Well-trained employees are a competitive advantage

The training and ongoing professional and personal development of employees are of high importance. The GF Academy offers a broad range of internal training and development opportunities that help every employee to grow in their career. A centralized learning platform enables employees to learn flexibly from and with each other. Moreover, thanks to its many locations around the world, GF can help talented employees gain experience abroad, which is always a formative step in their development.





EMPLOYEE TRAINING

number of participants in 2021

273

4 disciplines
of execution
(4DX)

87 trainings worldwide

639

7 Habits¹

18 trainings worldwide

124

GF Academy

7 trainings worldwide

¹ 7 Habits offline: 12 trainings, 181 employees / 7 Habits online: 6 trainings, 458 employees

[+ More information on the number of employee trainings in the chapter: Social performance indicators](#)

Standardization of HR processes

In the previous strategy cycle, GF began to put in place digital solutions that are aimed at standardizing and modernizing strategic HR processes. As part of this new platform, HR successfully launched a new process for internal training that combines seminars on the 4 Disciplines of Execution (4DX), on the 7 Habits of Highly Effective People (according to Stephen Covey's eponymous book), and the GF Academy offering. In the future, company-wide training, including online and offline training, will be held on this learning platform.

A focus on personal responsibility

Employees' personal responsibility has become increasingly important in recent years and this trend will continue in the future. At GF, employees can take their development into their own hands. They are supported by a range of programs and processes such as the Talent Management initiative that kicked off in 2021. The aim of this initiative is to motivate employees to take the next big step in their careers. In this way, the company wants to foster the commitment of employees and hopes to discover those talents who are looking to learn and advance on their own initiative.

New ways of working, new generations of talent

Younger generations bring with them a new understanding of work in terms of qualifications and work styles, as well as their expectations of their employer. Establishing a basis of trust for fruitful cooperation between different generations of employees requires new ways of thinking and greater flexibility, while at the same time enabling younger employees and more experienced staff to benefit from one another. GF strives to foster this mutual learning, among others in the form of diverse mentoring and coaching processes.

With measures such as participation in job and student fairs, an open day for schools, and apprentice exchanges between divisions, GF presents itself as an attractive and forward-looking company. Furthermore, the company is cooperating with universities and advanced technical colleges around the world to attract new talent.



Employee fluctuation

The company-wide employee fluctuation rate was 14.6% in 2021 (14.6% in 2020, which included dismissals, internal transfers and retirements). Detailed figures on employee hires and fluctuation by age group and gender are available in the chapter [social performance indicators](#). In 2021, the company experienced fluctuations in its locations in the United States and China. As a leading international employer, GF makes continual efforts to reduce these undesired fluctuations. Therefore, it is critical for GF to foster an inclusive work environment where employees' skills are valued, where their opinions can be voiced and acknowledged, and where they have opportunities to develop both professionally and personally.

Successful digitalization

In the course of 2021, the digitalization of many work processes that accelerated as a result of COVID-19 restrictions has continued apace with the aim of giving employees the greatest possible flexibility and facilitating cooperation. Furthermore, the introduction, in 2020, of expanded regulations on remote working met with broad approval, as they permitted more flexible forms of work. It was also possible to deepen expertise in the utilization of digital tools and techniques for training and professional education. In addition, GF has invested in media showrooms that will professionalize webinars. Among other activities, the HR team produced and streamed the annual company-wide summit in a broadcast format from the new auditorium of the Klostergut Paradies training center in Schlatt (Switzerland).



Employee representation

GF respects its employees' right to join employee representation bodies. Such agreements exist in a variety of GF locations and entities around the world, including Switzerland, Germany, Austria, China, France, Sweden, Japan and Taiwan. In countries where the law provides employees the right of codetermination, this right is protected. In 2021, 56% of GF's employees were employed under a collective bargaining agreement.

Workplace health and safety

For GF, the health and safety of its employees is of the highest priority. The company's stakeholders support this view and have rated the topic "safety and well-being at work" as being of [material importance](#).

In 2021, GF continued its efforts to foster and maintain a safety culture with the ultimate goal of having zero workplace accidents. The Sustainability Framework 2025 is an important guideline that will help the company achieve this target. In the framework, GF sets itself the goal to reduce its accident rate by at least 30% relative to the previous three-year average (i.e., 2018–2020). The accident rate includes accidents involving GF employees as well as leased personnel.³¹

Detailed information on GF's effort to reach its Sustainability Framework's goals can be found in this chapter under the heading [Safety indicators](#).



Health and safety

Reduce **accident rate by 30%**

In 2021, GF's health and safety priority was to systematically ensure its offices and facilities had the equipment and procedures necessary to prevent the spread of COVID-19.

COVID-19 response management

In 2021, GF continued to guide and coordinate its COVID-19 response. GF established in addition to local crisis teams a global pandemic team consisting of the Executive Committee, the Corporate Risk Manager, as well as HR and communication managers from corporate headquarters and the divisions. The committee initiates specific measures and supports implementation by unit-level management.

GF's safety precautions ensured safe workplaces for employees who continued working in plants, laboratories, and offices. The measures included split teams, offering COVID-19 tests, conducting hygiene and mental health training, and providing a range of personal protective equipment (PPE).

GF also established a company-wide reporting system to build a database of internal COVID-19-related cases.

GF Safety Standards

The GF Standards for Occupational Health and Safety provide a comprehensive description of all of GF's health and safety requirements. These standards apply to all facilities and GF employees worldwide, as well as to temporary workers and visitors. The topics include organizational measures as well as detailed expectations for technical and personnel measures to be in place at GF locations. The latter describe the detailed safety requirements for a wide range of issues, including, but not limited to, buildings and premises, machinery and tools, maintenance, transportation and storage, work with a risk of falling, PPE, hazardous substances, ergonomics and health protection, business trips, visits to customers and driving to work. The standards, which were approved by the GF Executive Committee in 2014, were updated and revised in 2019. The document is available in the nine languages of GF's major production facilities.

The GF Standards for Occupational Health and Safety require the safety management processes of GF's production sites to be certified to ISO 45001. At year-end 2021, the health and safety management processes of around 80% of GF's production sites were certified to OHSAS 18001 or ISO 45001.

In addition, since 2015, GF has conducted annual cross-facility safety audits – performed at the divisional level between the operations of each location – to ensure the effectiveness of their safety measures. In 2021, due to pandemic-related travel restrictions, cross-facility audits could only be partially completed. Where cross-facility audits were not possible, the facilities conducted internal audits.

In GF Piping Systems, safety audits were realized at 22 facilities worldwide. In GF Casting Solutions, six of its 13 facilities were audited in cross-facility safety audits in 2021, covering main manufacturing plants in Europe, China



and the United States. In GF Machining Solutions, safety audits were conducted at all facilities in 2021. In one of the eight facilities of GF Machining Solutions, a cross-facility safety audit could be completed. In all divisions, the findings were summarized and presented to the division management.

Reducing the risk of accidents

Even with strict health and safety measures in place, some accidents still occur. Consequently, GF's Sustainability Framework 2025 includes a goal to reduce the accident rate by 30% relative to the previous three-year average. The accident rate includes those involving GF employees as well as leased personnel.

GF aims to achieve the target of the Sustainability Framework mainly by:

- re-launching the cross-divisional Zero Risk campaign under the new slogan "Be Aware – Be Safe"
- identifying hazards and assessing the related risks
- systematically analysing accidents and near misses

Communication and training

Ongoing training is a key component of a robust safety culture. GF trains its employees, contractors, and visitors on health and safety topics via the "Zero Risk"/ "Be Aware – Be Safe" campaign. The initiative is in place since 2015 and is a core part of GF's safety culture and communications. It encompasses communication measures on the divisional and company levels to reinforce safety awareness.

In June 2021, GF Piping Systems re-launched the safety campaign raising awareness about unsafe situations, implementing new safety procedures and exchanging global best practices. The campaign's launch also included a variety of new measures, including the implementation of the Stop Work Directive (following the example of GF Machining Solutions) and safety walks. The Stop Working Directive encourages employees who perceive a potentially hazardous situation to stop working and notify their supervisor immediately. As a further step, in 2021, the division developed a stop-work card the size and format of a business card in 13 different languages, which it will distribute as part of the 2022 safety campaign. In addition, GF Piping Systems started to internally publish monthly accident reports in 2021 to update employees on the development of occupational safety. The division also organized employee safety training sessions and strengthened awareness of the topic by creating a monthly safety recommendation.

Some of GF Piping Systems' sites have already implemented highly successful measures as part of the "Be Aware – Be Safe" campaign. For example, an Australian site offered online safety training for its employees, with topics such as "COVID-19 safety at work" and "working from home". In the Netherlands, one site conducted periodic medical health checks for all employees in 2021, regularly informed employees about the new safety campaign and held two evacuation training courses.

GF Casting Solutions launched a global Safety Campaign Core Team in 2021, building on previous "Zero Risk" campaigns and embracing new aspects on work safety in the Zero Risk- toolbox. GF Casting Solutions monthly sustainability call with all plant environment, health and safety (EHS) representatives to share best practices, and align on health and safety measures.

In the second half of 2021, GF Machining Solutions prepared the safety campaign for launch in January 2022. Additionally, GF will concentrate its efforts on developing specific measures that will help reduce the most common recurring accidents (such as finger and foot injuries).

Improving safety through hazard and risk identification

The identification of hazards is crucial for ensuring safe workplaces. GF sites perform a risk assessment by using different methods according to local law. A GF company classifies its activities by risk and the availability of

recognized methods to avoid that risk. The result is documented, and the defined protective measures and safety rules are summarized as operating instructions. These instructions are made clear to all affected employees and displayed at workstations. In addition, the operating instructions are available for all employees at any time. After a near-miss or an accident, the hazard identification is reviewed and, if necessary, updated. The head of the department, together with the safety manager and the managers responsible regularly monitor the implementation of technical and practical safety measures and identifies improvements.

Health and safety committees are in place at GF facilities. They meet on a regular basis and integrate employees' feedback.

A process called Safety Stand Down at GF Piping Systems' site in Irwindale (USA) provides a hands-on example of how the employees are integrated into the process of achieving a safe work environment. On a quarterly basis, the facility's Environment, Health & Safety team reviews GF's safety materials and guidance and assesses various risky situations, behaviors, and best practices with the employees exposed to such risks. In this process, employees have the chance to report on any activity that could cause health or safety issues. Their feedback is recorded and analyzed.

In addition, GF Piping Systems' sites in the Americas started 2021 by implementing the SAFE (Safety Assessments for Effectiveness) tool. The purpose of the tool is to measure the effectiveness of each site's safety management systems by evaluating the activities and the programs in place. The outcome of the analysis is then used to create site-specific targets and objectives while proactively flagging areas of improvement.

Accident reporting and future prevention

Despite these comprehensive measures, accidents still occur in an industrial setting such as GF's operations. In such cases, the accident, its root cause and any corrective measures taken must be reported within three days of the accident by means of a company-wide accident reporting tool. Accident reporting and analysis help GF gauge the effectiveness of its safety initiatives and procedures. In 2021, reporting was expanded to include near-misses, their root-cause analysis, and any preventive measures implemented. Each division's health and safety specialist provide an accident and near-miss report to divisional management and the location's safety teams to ensure knowledge sharing between the facilities and to help prevent future accidents. The systematic analysis of near misses is a key measure to reduce the accident rate according to the Sustainability Framework. In addition, information on health and safety is included in the monthly reports provided to the Board of Directors since 2019. This reflects the high priority GF places on safety.

Safety indicators

In its Sustainability Framework 2025, GF sets the goal to reduce its accident rate by at least 30%, using the previous three-year average of 9.2 (from 2018–2020) as a baseline. The average is a lost-time injury frequency rate (LTIFR) figure, representing the number of incidents per one million hours worked. The accident rate includes accidents involving GF employees and leased personnel.

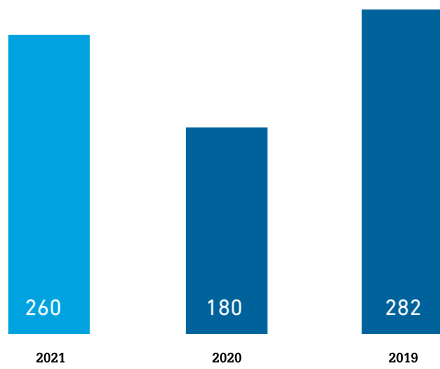
2021 was the sixth year in a row that GF's companies had zero fatalities. However, despite GF's efforts, the accident rate increased to 10.2 in 2021. In total numbers, this means an increase from 202 accidents in 2020 to 301 accidents in 2021.

However, a review of the figures (338 accidents) from 2019 indicates that the number of accidents in 2020 was particularly low. This decrease was mainly due to reduced working hours and temporary site closures in the first half of 2020 as a result of COVID-19. In addition, after returning to their workplaces, some employees might have been less sensitized to the risks related to their daily work.

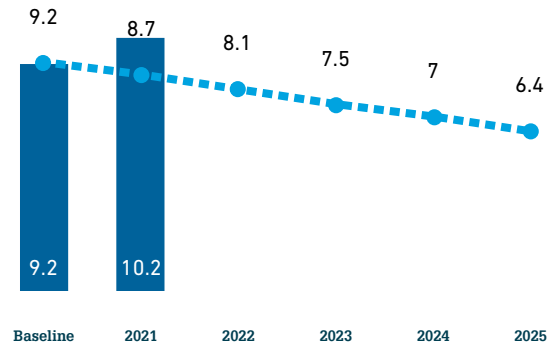
Accidents involving leased personnel account for about 14% of GF's total accidents, whereas the remaining 86% involve GF employees.

Most of the accidents happened in production and processing areas, which resulted in finger and foot injuries. During the year under review, 19 severe accidents³² occurred. This represents 6% of total injuries.

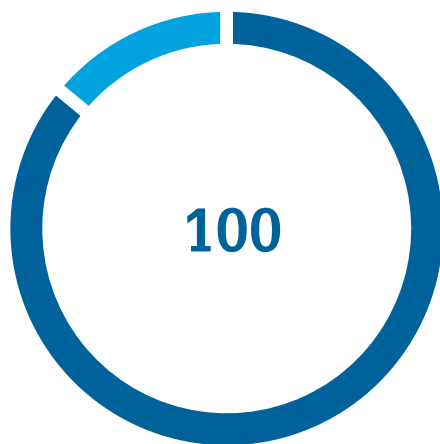
Number of accidents among GF employees



Accident rate as lost time injury frequency rate (LTIFR) per million hours worked



**Share of accidents, GF employees and leased personnel, 2021
In %**



- 86% GF employees
- 14% Leased employees

Safety awards

In recent years, GF's divisions have received numerous awards for their outstanding safety efforts. For instance, GF Piping Systems' sites in the United States were recognized by [EHS Today](#) to be among the safest nationwide in 2020. In addition, the North Carolina Department of Labor awarded GF Linamar (USA) with the Silver Safety Award. The company's health and safety management is considered to be among the best in the country.

[+ More information on safety awards in the chapter: Employees and society \(Sustainability Report 2020\)](#)

Employee well-being

Besides the high priority GF places on workplace safety, it also pays particular attention to promoting the overall health and well-being of its employees. This is crucial for retaining current employees, attracting new ones and, thus, ensuring GF's continued success.

Promotion of worker health

GF takes a variety of measures to promote and improve the health of its employees. For example, the division GF Machining Solutions encourages its employees to participate in sport and fitness classes by offering discounted gym rates.

GF Piping Systems also offers various workshops and classes at GF's headquarters in Schaffhausen to promote its employees' health. For example, the campaign "Gsund@life" creates mental and physical health plans for GF employees. In addition, the division runs workshops on maintaining a healthy work-life balance and covers the costs of yoga and Pilates classes. Other GF Piping Systems sites are also taking measures to promote the health of their employees. For example, in 2021, the site in Shawnee (USA) held a wellness fair that helped to identify employees with health issues and arrange immediate medical attention for them.

[+ GRI 403-1 | GRI 403-2 | GRI 403-3 | GRI 403-4 | GRI 403-5 | GRI 403-6 | GRI 403-7 | GRI 403-8 | GRI 403-9](#)

³¹ Leased personnel is personnel from temporary employment agencies that joins the company on very short notice and supports GF for a defined timeframe.

³² A severe accident is defined as an incident requiring medical treatment and at least 24 hours of hospitalization. This definition aligns the different global standards of a severe accident.

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GF PIPING SYSTEMS – SUCCESS STORY

Driving clean energy forward

Carbon emissions continue to rise, driving the urgent need for more sustainable forms of power generation as well. What if we could harness an unlimited source of clean energy that lies directly beneath our feet?

SaltPower is doing just that and has partnered with GF Piping Systems to produce CO₂-free electricity through a uniquely natural process: osmosis.

About SaltPower and GF

SaltPower was founded in 2015 by Danish engineer, inventor and businessman Jørgen Mads Clausen. The company develops innovative and scalable clean energy production technology through osmosis, a process that combines fresh water and salt water to produce electricity. After several years of R&D, SaltPower recently sold its first commercial system and is now planning to scale production throughout Europe.



In 2021, global CO₂ emissions from energy combustion and industrial processes hit an all-time high of 36.3 gigatonnes (Gt), up 6% from the year before. This reflects the upswing in the economy after the economic slowdown of 2020 due to the COVID-19 pandemic.³³

Global GHG emissions
(in Gt CO₂)
from energy combustion
and industrial
processes



SaltPower is a Danish start-up taking an innovative approach to the problem of global warming. Its unique system uses salt water – one of the world’s most abundant resources – to create emission-free energy through the power of osmosis.

While designing its initial prototype, SaltPower needed more sustainable and longer-lasting alternatives to traditional steel pipes. Having previously collaborated with GF on a project with Semco Maritime, SaltPower engaged GF Piping Systems as an official supply partner. “GF believed in our business model from the very beginning and supported us in our pioneering work even as a start-up,” says SaltPower CEO Lars Storm Pedersen. “GF’s advanced piping components and focus on sustainability have been decisive in making our pilot projects so successful.”

As an industry area sales manager at GF Piping Systems, **Michael Adamsen** supports OEM (original equipment manufacturer) customers and others. He manages comfort and process cooling projects and has led the SaltPower collaboration since 2017.





Lars Storm Pedersen is CEO of SaltPower and holds a PhD in chemical engineering from the Technical University of Denmark. An energy sector veteran, he was previously Vice Chairman of Dansk Miljøteknologi and held several leading roles at Haldor Topsoe.

Using salt to create renewable energy

SaltPower uses the natural process of osmosis to generate 100% emission-free electricity. Its [system](#) pumps fresh water and salt water through tanks separated by a membrane full of tiny pores through which only water can pass. Seeking a natural balance, the fresh water automatically moves through the membrane and mixes with the salt water to equalize the salinity levels. This controlled water transfer creates a build-up of pressure that powers a turbine and generates 24/7 clean electricity. The system's only by-product is salt water, making it a sustainable energy solution for companies that produce or consume large volumes of salt.



Facts and Figures

5 times longer

+ GF's plastic pipes will last up to 25 years in SaltPower's facilities – five times longer than steel equivalents.

A successful and rewarding partnership

SaltPower is currently using GF's components to deliver its first full-scale system. GF supplies plastic PVC piping along with fittings, ball valves and sensors used in the pumping chambers that combine the two water sources. Michael Adamsen from GF Piping Systems, who has been leading the SaltPower collaboration since 2017, says the change from steel to plastic pipes delivers a host of unique benefits. "GF's plastic pipes are unaffected by salinity and will last up to 25 years, which is five times longer than steel equivalents. PVC pipes also have a much smaller carbon footprint than steel, meaning they lower costs, conserve resources and significantly reduce lifetime emissions."

SaltPower's systems are rated at 100 kilowatts and measure just 6x15 meters. The company says it can also achieve larger capacities by connecting multiple systems together, providing clean baseload power for facilities of all sizes.



Working together to drive clean energy forward

With its first commercial order now underway, Lars Storm Pedersen believes SaltPower is primed to make a lasting impact in the clean energy sector. “Renewables such as solar and wind have key roles to play in the energy transition, but they are intermittent by nature,” he says. “Using GF’s piping components, SaltPower can generate clean electricity 24 hours a day, 365 days a year, which is exactly what the world needs going forward.”

In the face of rising carbon emissions, GF is proudly working with SaltPower to develop this sustainable energy solution. And with the Danish company poised for rapid growth, this successful collaboration is laying new foundations for a cleaner, greener future.

Two points of view

What challenges did SaltPower face while developing its method for producing clean energy through osmosis?

Lars Storm Pedersen: Our system pumps water with a salinity of up to 26%, making it difficult to use steel pipes as they're prone to corrosion. Additionally, our clients are increasingly focused on our environmental footprint, so we needed components that would enhance our sustainability.

How did GF solve the challenges faced by SaltPower in the development process?

Michael Adamsen: GF's salt-resistant plastic pipes and components last around 25 years, which is five times longer than steel pipes. These extended lifespans conserve natural resources, and as they're also much lighter and easier to install, they vastly reduce maintenance costs.

What do you value most about the collaboration with GF?

Lars Storm Pedersen: GF is a professional and reliable partner that has been instrumental in reducing both our costs and environmental impact. GF's plastic pipes have a small carbon footprint and very long lifespans, helping us in our mission to deliver clean and sustainable energy.

What will the future of the partnership look like?

Michael Adamsen: Our cooperation has been highly successful so far, and SaltPower has recently sold its first full-scale unit. We are very proud of this progress and will continue to supply SaltPower with our plastic components for the systems it develops in the future.



³³ [Global Energy Review: CO2 Emissions in 2021 – Analysis – IEA](#)



GF CASTING SOLUTIONS – SUCCESS STORY

Lightweight castings for zero-emission mobility

Electric vehicles play an important part in the future of emission-free driving. But looking beyond batteries – what does it take to produce a truly sustainable car? In a collaboration with Fisker, GF Casting Solutions' lightweight components are contributing to one of the most advanced and efficient vehicles ever built.

About Fisker and GF

Fisker is an American electric vehicle automaker founded in 2016 by Henrik Fisker. Based in Southern California (US), Fisker is developing the Fisker Ocean, an all-electric SUV made from recycled and vegan materials with an estimated range of up to 350 miles.



Climate change is one of the most critical challenges of our time and passenger and commercial travel on the road has a decisive role to play. Road travel accounts for more than 75% of transport demand and emissions.³⁴

It's clear that the automotive sector has a pivotal role to play in reducing global emissions, and California's Fisker (US) is one automaker leading a new era of sustainable motoring.

Global CO₂ emissions in the transport sector (2020) in megatonnes



The road subsector accounts for more than 75% of transport demand and emissions.

78% Road 11% Shipping
1% Rail 9% Aviation

The Ocean is Fisker's hotly anticipated electric car, and the company plans to produce up to 300'000 vehicles starting in late 2022. The five-seat SUV boasts some truly impressive specs: up to 350 miles of range, a solar roof and a luxury interior made from recycled plastic bottles and fishing nets. Fisker's founder and CEO, Henrik Fisker, said the company is committed to climate-friendly motoring. "Our vehicle is built in a CO₂-neutral factory that is mainly run by hydro. Our ESG effort and our sustainability effort is really something that we take seriously."

Weight is critical for electric vehicles, as lighter models use less energy and travel further between charges. To achieve these goals, Fisker sought help from GF Casting Solutions to develop a more efficient and sustainable car.

“At Fisker, we look for components with the highest recycled content and the lowest weight that meet our engineering and aesthetic requirements,” said Patrick Newsom, Director of ESG at Fisker. “We also value partners that embrace renewables and are working towards carbon neutrality.”

Sohil Fakur is Global Key Account Manager at GF Casting Solutions. In this position, he is the lead point of contact for all of GF Casting Solutions' key clients.





Patrick Newsom is Fisker's Director of ESG, responsible for the company's environmental, social and governance (ESG) initiatives. His work ensures Fisker meets its ambitious sustainability goals and continually reduces its environmental impact.

Lighter vehicles, lower emissions

GF Casting Solutions uses an aluminum alloy that is around 50% lighter than steel. The casting process also combines several components into one, significantly reducing production and transport emissions.

Sohil Fakur, Global Key Account Manager at GF Casting Solutions, says lightweight castings are critical for efficient, low-emission vehicles. "Traditionally, automakers may source 10 components from 10 different suppliers. Casting combines these parts together in a way that is not only more environmentally friendly, but also extends range and reduces emissions." In keeping with circular economy principles, GF Casting Solutions can also recycle 95% of the process-related scrap generated during the casting process within a closed loop recycling program.

Fisker's sustainability efforts also include a goal to completely recycle all Ocean leasing models – including their batteries – after 12 years on the road.



The road to climate-friendly driving

Together with Fisker, GF is helping to set new standards in sustainable mobility. Fisker has plans to produce completely CO₂-free cars by 2027, an aim that Henrik Fisker believes is as ambitious as it is necessary. "It is a tough goal, but I think it is good to set tough goals for the entire team, because in that way you really work towards something that is truly going to change the world."

As part of this landmark project, GF is proud to support Fisker in achieving its visionary goals. With lighter and more sustainable components, GF's contribution to this electric vehicle is a step towards a cleaner and greener future.

Two points of view

Why are lightweight parts so critical for Fisker as a car manufacturer?

Patrick Newsom: Weight has a significant impact on a vehicle's efficiency and range. The ability to create and source lightweight, cost-effective materials is critical for us to deliver accessible electric vehicles that offer safe and efficient mobility to our customers.

Why are the components developed by GF particularly lightweight?

Sohil Fakur: The castings are made of a unique aluminum alloy, making them around half the weight of steel equivalents. We co-developed nine components, which reduced energy and transport emissions while lowering the Ocean's total weight.

What do you value most about your collaboration with the GF Casting Solutions' team?

Patrick Newsom: GF is constantly challenging industry norms to improve its production methods. It is a true design partner capable of executing unique and efficient solutions that allow us to be very creative and build more sustainable cars.

What challenges were faced in the development of structural components for the Fisker Ocean?

Sohil Fakur: The Ocean is due to launch at the end of 2022, so our development and production had to meet a very strict timeline. Thanks to our extensive automotive experience, we were able to deliver an excellent product to specs and on schedule.



³⁴ [Source: IEA \(2021\), Tracking Transport 2021, IEA, Paris](#)



GF MACHINING SOLUTIONS – SUCCESS STORY

Award-winning educational partnership

Technology continues to evolve at a rapid pace. How do we ensure today's education prepares students for tomorrow's challenges? As a leader in sustainable innovation, GF is helping to train the next generation of technical specialists. Through shared knowledge and hands-on experience, graduates are now primed for success in their careers.

About Tianjin Light Industry Vocational Technical College and GF

Established in 2001, Tianjin Light Industry Vocational Technical College (China) is a state-owned public institution of higher education. It offers 33 higher vocational diploma programs and two skill-oriented undergraduate programs. The college has three of China's top specialties: mold design and manufacturing, photovoltaic power generation technology and application, and e-commerce. Tianjin Light Industry Vocational Technical College has around 10'000 students and 3'000 new graduates each year and is one of China's leading die-and-mold training campuses.



Young people participating in technical and vocational programs

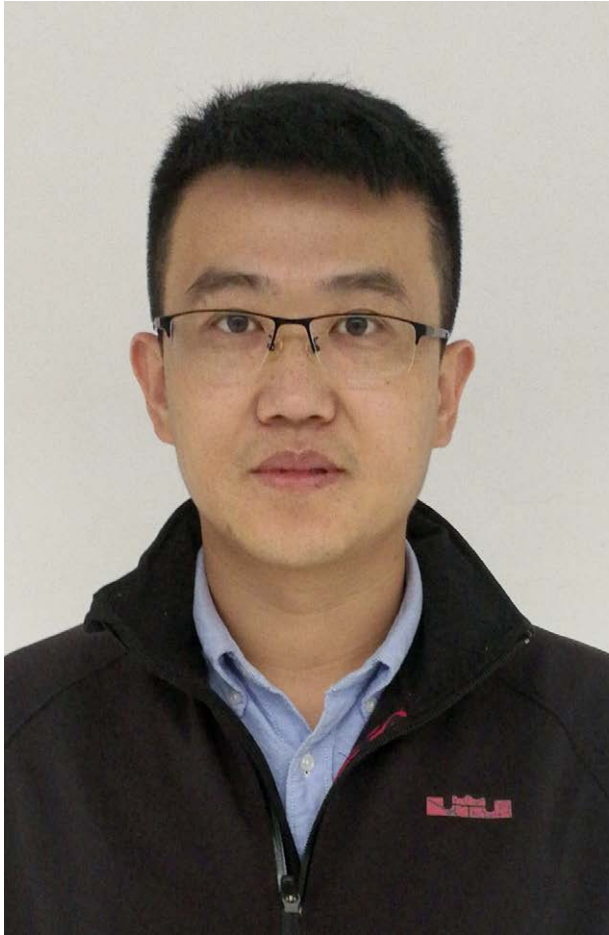
Education is a path to more fulfilling work, greater career prospects and a higher quality of life. However, worldwide only around 5% of young people aged 15–24 participate in technical and vocational programs.³⁵ To continue driving social and economic growth, there's an urgent need to raise these numbers.



In response to this challenge, GF formed a partnership with Tianjin Light Industry Vocational Technical College (China) in 2016. Since then, on the back of this partnership, GF has elevated its profile throughout the country. The college is one of China’s leading die-and-mold training institutions, with around 10’000 students and 3’000 graduates per year. Having celebrated its fifth anniversary in 2021, the collaboration with GF is enriching the students’ learning experience by helping them to meet the growing demand for technical prowess.

Wendy Shi is GF's Head of Education in China. She is responsible for promoting GF's advanced technology in Chinese institutions and cultivating skilled talent for GF and its customers.



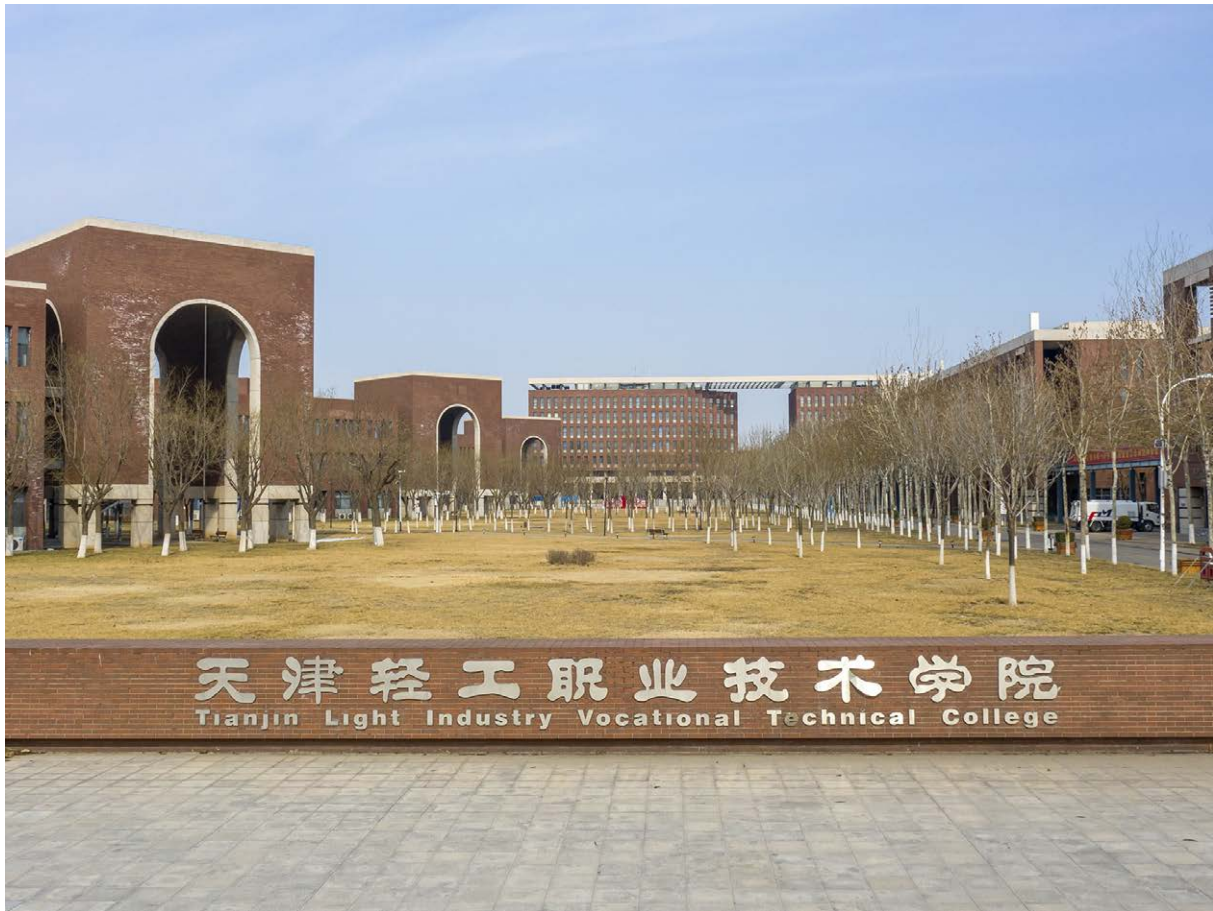


Zhou Jing is Cadre at the Faculty of Mechanical Engineering at Tianjin Light Industry Vocational Technical College. He also participated in the creation of the Chinese Technical Research Center for Industrial Precision Molding.

Investing in tomorrow's technical specialists

Zhou Jing, Cadre at the Faculty of Mechanical Engineering, says GF's support has been a revelation. "We urgently needed updated teacher training, learning materials and machines that our students use for practical training. GF has elevated our entire program, and our graduates have terrific career prospects."

GF provided eight state-of-the-art machines for tasks such as cutting, milling, laser processing and automation technology, supported by ongoing training. Subjects such as computerized numerical control (CNC) machining technology, mold design and manufacturing and intelligent manufacturing equipment technology feature hands-on classes with GF's machines. It's a win-win for the college: students learn at the cutting-edge of innovation, and staff receive training in machine operation, milling and automation.



“GF has an extensive track record in developing high-precision production systems. Its commitment to education and technical excellence made it the ideal partner for our college.”

Zhou Jing, Cadre at the Faculty of Mechanical Engineering,
Tianjin Light Industry Vocational Technical College

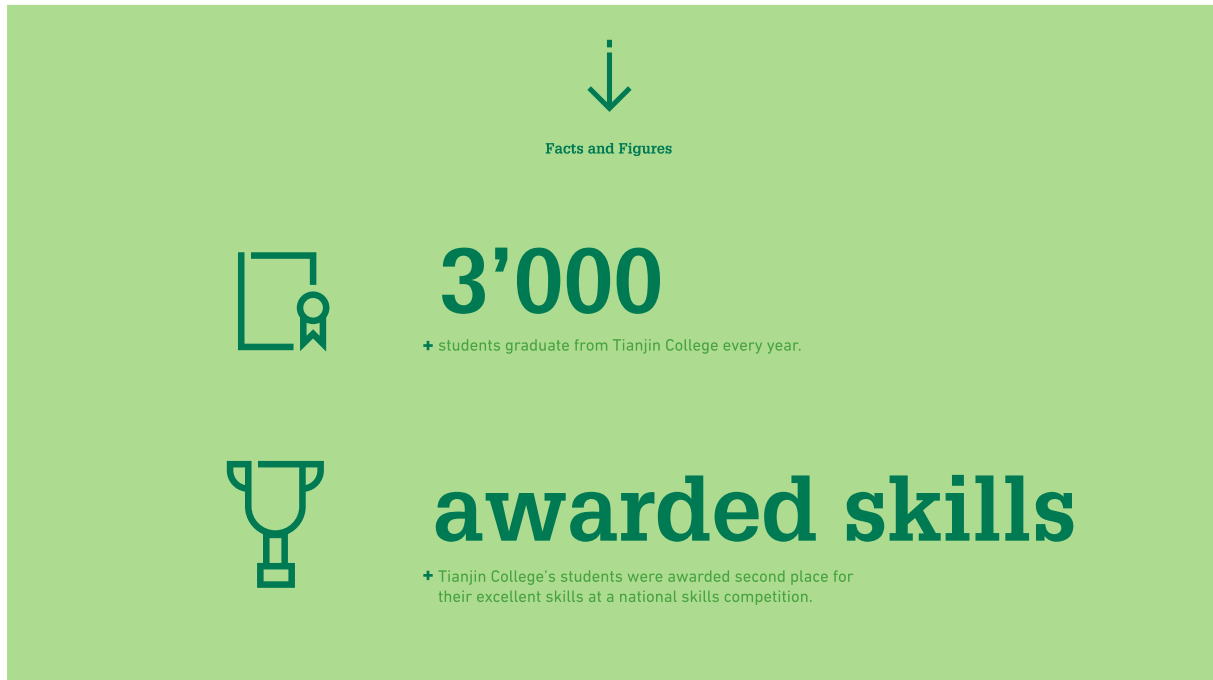
Learning from the best

Jia Zhihao is a student at Tianjin Light Industry Vocational Technical College. During his fifth semester, the promising student won second prize in the National Vocational Students Skills Competition. Through his college's partnership with GF, he has hands-on experience in die and mold machine structures, operation, programming and processing. "Thanks to GF's equipment and training, I have the exact qualifications I need to start my career in the CNC industry." Jia specifically enjoys production and processing work, which allows him to continuously improve his skills and learn more innovative die-and-mold machining techniques. "I'm very excited about the future, and I hope to become a CNC technical expert working for GF or one of its customers."



GF's Head of Education in China, Wendy Shi, says the partnership is a role model for technical collaborations. "We're developing students to become leaders in their field and their communities. Companies like GF only improve with the best people, and that all starts with education."

GF's partnership rewards everyone involved. The college benefits from GF's knowledge, equipment and industry relationships, while GF and its customers gain access to tomorrow's die-and-mold industry leaders.



An ongoing success story

GF's influence extends beyond the campus. The college's students took second place at the National Vocational Students Skills Competition in numerical control (NC) programming, processing and component assembly. One of the winning students, Jia Zhihao, said: "I'm very proud of my award and I now realize how well training with GF's machines has prepared me for my professional life."

The partnership has also paved the way for other rewarding collaborations. In the last five years, GF has partnered with 11 other institutions and opened another school in the mold-making field with Tianjin Light Industry Vocational Technical College. The campuses are close to GF's customers to create job opportunities and long-term relationships.

GF's collaboration with Tianjin Light Industry Vocational Technical College is a template for sustainable education. The college helps graduates find careers with GF and its customers, who can invest more resources into training. In the end, GF is doing more than fostering professional success: we are helping students build their networks.

Two points of view

What do you appreciate in particular about the cooperation with GF?

Zhou Jing: GF is an ideal partner as the company has a long track record in building precision die-and-mold machines and rich experience in education and talent development. GF is our preferred partner as the collaboration allows our students to train with the most advanced technologies and pursue excellent career prospects.

What are the main benefits for GF from the cooperation with Tianjin Light Industry Vocational Technical College?

Wendy Shi: The cooperation with the college helps GF in many ways. On the one hand, we can raise our profile in China and promote GF as an attractive employer. On the other, students receive state-of-the-art training and can work for our customers, thus building a very positive image of GF. Overall, the cooperation helps GF build stronger customer relationships and achieve sustainable long-term growth.

What do you have planned for the future of the cooperation?

Wendy Shi: We would be delighted to continue our partnership with Tianjin Light Industry Vocational Technical College. We are expanding our partnership and have considered including a Swiss college in the cooperation. We have also signed a contract agreement with the Chinese Ministry of Education for the next five years to develop similar projects in up to 100 other schools.

Zhou Jing: I am very confident and excited about the ongoing cooperation between GF and our college. I hope GF will keep up its commitment to the education of high-quality technical talents.



³⁵ Source: Adapted from UNESCO Institute for Statistics (UIS), <http://data.uis.unesco.org/#>, 10.11.2021

Performance Indicators

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Economic performance indicators

CHF million	2'021	2'020	2'019	2'018	2'017
Order intake	4'058	3'160	3'692	4'521	4'274
Orders on hand at year-end	814	514	563	623	773
Income statement					
Sales	3'722	3'184	3'720	4'572	4'150
EBITDA	412	299	374	529	491
Operating result (EBIT) before one-offs	278	185	281	382	352
One-offs		19	46		
Operating result (EBIT)	278	166	235	382	352
Net profit shareholders GF	214	116	173	281	252
Cash flow					
Cash flow from operating activities	288	342	318	397	410
Free cash flow before acquisitions/divestments	151	230	137	147	204
Free cash flow	110	224	132	-7	130
Balance sheet					
Assets	3'767	3'445	3'344	3'444	3'610
Liabilities	2'271	2'056	1'906	2'016	2'241
Equity	1'496	1'389	1'438	1'428	1'369
Net working capital	781	707	856	926	899
Invested capital (IC)	1'355	1'313	1'473	1'494	1'466
Net debt	54	117	232	238	183
Key figures					
Return on equity (ROE) %	13.8	7.9	12	19.9	20.1
Return on invested capital (ROIC) %	16.4	9.3	12.4	22.4	20.3
Return on sales before one-offs (EBIT margin before one-offs) %	7.5	5.8	7.6	8.4	8.5
Return on sales (EBIT margin) %	7.5	5.2	6.3	8.4	8.5
Asset turnover	2.8	2.3	2.5	3.1	3
Cash flow from operating activities in % of sales	7.7	10.7	8.5	8.7	9.9
Research and development					
Investments into research and development	113	112	127	127	112
Employees					
Employees at year-end	15'111	14'118	14'678	15'027	15'835
Europe	7'941	7'792	8'373	8'721	9'658
Asia	3'814	3'604	3'545	3'725	3'807
Americas	2'554	1'938	1'922	1'740	1'503
Rest of world	802	784	838	841	867

Environmental performance indicators

Environmental performance indicators ¹	Unit	2021	2020	2019	2018	2017
Energy						
Gross energy consumption	1'000 GJ	3'632	2'268	3'565	6'823	6'941
Electricity	1'000 GJ	2'342	2'087	2'427	3'249	3'296
Natural gas, biogas, fuel oil	1'000 GJ	1'066	765 ²	949	1'363	1'247
Coke	1'000 GJ	98	93	101	2'092	2'265
Fuel use (for internal transportation)	1'000 GJ	104	53	65	97	110
Other energy sources	1'000 GJ	22	34	22	22	23
Energy sold	1'000 GJ	-8	-8	-1	-82	-103
Net energy consumption	1'000 GJ	3'624	2'259	3'564	6'742	6'838
Renewable energy (incl. green electricity)	%	24	17	15	9	10
Energy intensity (net energy consumption per sales)	1'000 GJ / CHF million	0.97	0.71	0.96	1.47	1.65
GHG emissions (in CO₂e)						
Total CO ₂ e emissions ("market based" approach)	1'000 tonnes CO ₂ e	1'975	1'592	1'873	630	668
Scope 1 (Direct emissions: fuel-related energy consumption) ²	1'000 tonnes CO ₂ e	84 ⁸	68	77	312	325
Scope 2 market-based (Indirect emissions: electricity and district heating) ³	1'000 tonnes CO ₂ e	189 ⁸	216	263	312	337
Scope 2 location-based (Indirect emissions: electricity and district heating) ⁴	1'000 tonnes CO ₂ e	293 ⁸	297	333	411	468
Scope 3 (Indirect emissions) ⁵	1'000 tonnes CO ₂ e	1'702	1'308	1'533	6	7
Category 1: Purchased goods and services	1'000 tonnes CO ₂ e	1'176 ⁸	858	1'003		
Category 3: Fuel and energy-related services	1'000 tonnes CO ₂ e	55	47	55		
Category 4: Upstream transportation and distribution	1'000 tonnes CO ₂ e	43	36	43		
Category 5: Waste generated in operations	1'000 tonnes CO ₂ e	0	0	0		
Category 6: Business travel	1'000 tonnes CO ₂ e	2	2	7	6	7
Category 7: Employee commuting	1'000 tonnes CO ₂ e	17	15	17		
Category 9: Downstream transportation and distribution	1'000 tonnes CO ₂ e	32	28	32		
Category 10: Processing of sold products	1'000 tonnes CO ₂ e	16	13	16		
Category 11: Use of sold products	1'000 tonnes CO ₂ e	349 ⁸	298	348		
Category 12: End of life treatment of sold-products	1'000 tonnes CO ₂ e	12	10	12		
Sustainability Targets 2025: Scope 1 + 2 emission reduction (status at year-end)	1'000 tonnes CO ₂ e	273	284	330		
Sustainability Targets 2025: Scope 3 emission reduction (status at year-end) ⁷	1'000 tonnes CO ₂ e	1'702	1'308	1'533		
Air emissions						
Nitrogen oxides (NO _x)	1'000 tonnes	0.02	0.01	0.01	0.05	0.04
Sulfur oxides (SO _x)	1'000 tonnes	0.01	0.00	0.01	0.01	0.01
Volatile organic compounds (VOCs)	1'000 tonnes	0.05	0.05	0.05	0.06	0.05
Particulate matter	1'000 tonnes	0.004	0.002	0.001	0.005	0.001

Water and wastewater						
Total water consumption	1'000 m ³	2'304	2'013	2'417	2'759	2'966
City water from public supply	1'000 m ³	696	648	702	697	662
Ground and rain water	1'000 m ³	1'608	1'365	1'715	2'062	2'304
Water consumption of GF sites located in water stressed areas	1'000 m ³	457 ⁸				
Wastewater volume	1'000 m ³	1'803	1'772	1'961	1'961	2'098
Wastewater to sewage systems	1'000 m ³	593	674	750	814	944
Wastewater returned to nature, unpolluted	1'000 m ³	1'211	1'098	1'211	1'147	1'153
Sustainability Targets 2025: Water intensity index (status at year-end)		102	100			
Sustainability Targets 2025: Target line water intensity index ⁹ (water consumption per production volume ¹⁰)		96	100			
Waste and recycling						
Total waste	1'000 tonnes	103 ⁸	83	99	306	326
Non hazardous waste		83	73	91	286	307
Normal waste, recycling	1'000 tonnes	58	53	67	245	263
Normal waste, landfill or incineration	1'000 tonnes	25	20	24	41 ²	44
Hazardous waste	1'000 tonnes	20 ⁸	10	8	20	18
Hazardous waste, recycling	1'000 tonnes	15	5 ²	3	16	16
Hazardous waste, storage or incineration	1'000 tonnes	5	5 ²	5	4 ²	2
Recycled waste as % of total waste	%	70	71	71	85	86
Sustainability Targets 2025: Unrecycled waste intensity index (status at year-end)		91	100			
Sustainability Targets 2025: Target line unrecycled waste intensity index ⁹ (non-recycled waste per production volume ¹⁰)		96	100			
Recycled input material						
GF Piping Systems recycled input material ¹¹	1'000 tonnes	9				
Supplier sustainability assessment						
Key suppliers spend assessed with sustainability assessments ¹¹	% of total purchase volume	34 ⁸				
Monetary values						
Expenditure for environmental protection	CHF million	8	10	5	18	18
Energy costs	CHF million	81	65	72	130	128
Water and wastewater costs	CHF million	2.5	2.0	2.5	3.5	3.0
Waste disposal costs (-) and recycling credits (+)	CHF million	-1	1	3	9	8

1 The environmental performance indicators include all GF production companies.

2 Restatement of 2020 natural gas consumption as site that was recently acquired improved the management of environmental figures. In addition, waste data from 2018 - 2020 are restated as a site received a more comprehensive waste manifesto from the disposal company. These corrections exceeded the five percent threshold level, therefore triggering a restatement.

3 Market-based emissions refer to specific emission factors, e.g. from local utility provider and they account for market instruments such as guarantees of origin that might be purchased in order to reduce Scope 2 market-based emissions.

4 Location-based emissions refer to the average emission factors of the area where the electricity consumption takes place, e.g. average emission factor of one country.

5 In 2021, GF conducted a comprehensive Scope 3 analysis for the year 2019 whereas the 2020 figures were calculated based on revenue developments. As a result, all Scope 3 emissions for 2019 to 2021 is disclosed, providing a comprehensive assessment of total CO2e emissions. Five scope 3 categories are excluded as it was determined irrelevant to GF. The categories are capital goods, leased assets (both upstream and downstream), franchises, and investments.

- 6 GF's strategy period of 2025 covers a five-year cycle (2021 - 2025). The 21% reduction follows a reduction of a minimum 4.2% p.a. according to latest climate science to keep global warming to 1.5°C. The reduction target submitted to the SBTi follows the technical requirement of the SBTi and as a result cover more than 5 years, but maintains the minimum 4.2% absolute reduction pathway.
- 7 GF's scope 3 target focuses on Category 1 and 11, as those categories account for around 90% of total scope 3 emissions.
- 8 2021 PwC assured. The 2021 PwC assurance process was slightly adapted according to the KPIs of the Sustainability Framework 2025. Further details on the previous year assurance processes are available in the Sustainability Report 2020, by clicking on the following link: <https://sustainability-report.georgfischer.com/20/en/environmental-performance-indicators/>
- 9 The target line is calculated linearly based on the standardized baseline consumption (=100) and according to the defined target.
- 10 The production volume is defined based on the specificities of the businesses of the individual divisions: as "produced tonnes" for GF Piping Systems, as "gross value added" (it includes all operating income subtracting the costs of materials and products, changes in inventory, and operating expenses) for GF Casting Solutions and as "hours worked" for GF Machining Solutions.
- 11 According to the targets of the Sustainability Framework 2025 the key figures were extended and the data collection started in 2021 for the first time. As a result no previous year data is available.

+ GRI 201-1 | GRI 301-1 | GRI 302-1 | GRI 302-3 | GRI 302-4 | GRI 303-3 | GRI 303-4 | GRI 303-5 | GRI 305-1 | GRI 3

Social performance indicators

Social performance indicators ¹	Unit	2021	2020	2019	2018	2017
Employees						
Number of employees	Headcount	15'111	14'118	14'678	15'027	15'835
	FTE ²	14'532	13'562	14'073	14'413	15'163
Employees younger than 30	% of headcount	16	15	17	19	19
Employees between 30 - 50	% of headcount	58	59	57	54	53
Employees older than 50	% of headcount	26	26	26	27	28
Female employees						
	Headcount	2'952	2'812	2'958	2'512	2'347
	FTE	2'817	2'764	2'851	2'397	2'213
	% of headcount	19.5	19.9	20.2	16.7	14.8
Women on the Board of Directors	Number	2	2	2	2	2
	%	28.6	25.0	22.2	22.2	22.2
Women on the Executive Committee	Number	0	0	0	0	0
Women in management positions ³	FTE	114	97	100	88	90
	% of total management positions	15.8	15.8	16.4	14.8	14.2
Newly appointed managers						
Newly appointed male managers ⁴	Headcount	74				
Newly appointed female managers ⁴	Headcount	31				
	% of new appointments	30				
Part-time employees						
	Headcount	405	396	400	457	373
	%	2.7	2.8	2.7	3.0	2.4
Female part-time employees	Headcount	264	261			
	% of part-time employees	65	66			
Student interns	Headcount	98	104	133	174	145
Apprentices	Headcount	363	387	446	469	525
Employees with disabilities						
	Headcount	115	114	129	280	298
	%	0.8	0.8	0.9	1.9	1.9
Total new hires						
Total new hires	Headcount	2'842				
New hires, male	Headcount	2'279				
New hires, female	Headcount	563				
New hires of employees younger than 30 ⁴	Headcount	1'055				
New hires of employees between 30 - 50 ⁴	Headcount	1'438				
New hires of employees older than 50 ⁴	Headcount	349				
Total departures						
Total departures ⁵	Headcount	2'038	2'019	2'162	1'796	1'603
Departures, male ⁴	Headcount	1'610				
Departures, female ⁴	Headcount	428				
Departures of employees under 30 years ⁴	Headcount	553				

Departures of employees between 30 - 50 years ⁴	Headcount	1'113				
Departures of employees over 50 years ⁴	Headcount	373				
Total employee fluctuation ⁵	%	14.6	14.6	15.8	11.9	11.3
Employee surveys ⁶	Number of employees surveyed	5'431	3'289	5'448	6'341	6'987
Investigated incidents of discrimination	Number	0	2	1	3	1
Employees under collective bargaining agreement	Headcount	8'509	8'178			
	%	56	58			
Training and professional development						
Training and professional development	Number of GF employees with training (headcount)	10'209	9'394	10'517	11'558	12'192
	%	67.6	66.5	71.7	76.9	77.0
Training days	Days worked	22'975	18'860	30'527	36'974	38'822
	Days per employee	1.5	1.3	2.1	2.5	2.5
Health and safety						
Fatalities, work-related	Number	0 ⁷	0	0	0	0
Work-related accidents involving injury of GF employees	Number	260	180	282	425	407
Work-related accidents involving injury of leased personnel	Number	41	22	56	133	145
Work-related accidents involving injury of other third parties	Number	42	4	7	10	14
Sustainability Targets 2025: Lost time injury frequency rate (LTIFR)	per 1'000'000 hours worked	10.2 ⁷	9.2			
Sustainability Targets 2025: Target line lost time injury frequency rate (LTIFR) ⁸	per 1'000'000 hours worked	8.7	9.2			
Absence days due to work-related accidents or illness	Days worked	4'943	3'593	6'605	8'675	6'750
Absence rate due to work-related accidents or illness	% of total days worked	0.1	0.1	0.2	0.2	0.2
Total absence days	Days worked	121'114	113'478	127'228	148'361	139'407
Community						
Order volume from workshops employing disabled people	CHF million	2.5	2.5	2.6	2.9	2.4
Charitable donations	CHF million	2.5	2.9	3.5	4.0	4.5

1 The social performance indicators include all GF companies with ten or more employees.

2 FTE stands for Full Time Equivalents.

3 Management positions are defined as members of the management board of each business entity or managers who report to a managing director.

4 In 2021, the scope of social data reporting was extended and the collection of several figures started in 2021 for the first time. As a result no previous year data is available.

5 The definition of departures was slightly amended in 2021 and does not include internal transfers, and natural departures, e.g. retirements as of 2021 reporting period. In previous reporting periods, those departures are still included.

6 The figure represents the number of employees who were requested to participate in the survey.

7 2021 PwC assured. The 2021 PwC assurance process was slightly adapted according to the KPIs of the Sustainability Framework 2025. Further details on the previous year assurance process are available in the Sustainability Report 2020, by clicking on the following link: <https://sustainability-report.georgfischer.com/20/en/social-performance-indicators/>

8 The target line is calculated linearly based on the baseline data and according to the defined target.

+ GRI 102-8 | GRI 102-41 | GRI 401-1 | GRI 403-9 | GRI 404-1 | GRI 405-1 | GRI 406-1

About this report

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Disclosure information

This report covers the reporting period from 01 January to 31 December 2021. It was prepared in accordance with the GRI Standards: Core option (2016).

Starting with its first environmental report in 1997, GF has continually expanded the recording and collection of sustainability-relevant data. Initially, only environmental indicators were collected. Social indicators were added in 2005.

Reporting cycle

From 2005 to 2018, GF published a comprehensive Sustainability Report every other year, with an interim report in the intervening years. Since 2019, GF has been publishing a comprehensive report on an annual basis. Sustainability Reports from previous periods are available on the [GF website](#) and in the [online version of the Corporate Archives](#). Additionally, information on energy consumption, GHG emissions, and GF's management of water as a resource is also provided annually to [CDP](#) (Carbon Disclosure Project).

As of 2021, GF again participates in the S&P Global CSA (Corporate Sustainability Assessment), starting with the information covering the 2020 reporting period.³⁶ In addition, GF Piping System and GF Casting Solutions were reassessed by EcoVadis in 2021.

✚ [More information on ranking results in the chapter: Key figures for 2021](#)

✚ [More information on ranking results on GF's Investor Relations website](#)

Scope of data collection and reporting

In the year under review and in line with the organizational adjustments of GF, the scope of reporting was adopted accordingly:

- In 2021, one of GF Machining Solutions' sales offices in Vietnam joined reporting via GF's Sustainability Information System upon reaching the 10-employee threshold. The site's contribution to the total figures is small. The data is included in the absolute figures presented in the chapter [Performance indicators](#)
- In addition, all of GF's sales companies included data about company cars in their 2021 reporting, resulting in a minor increase in scope 1 emissions.
- One GF Casting Solutions site in Germany re-joined the reporting in 2021, after a major iron foundry part of the site was divested and closed in 2019/2020.

In line with the previous reporting periods, the information presented in this Sustainability Report accounts for the equity share that GF owns in the individual companies under its control. This is aligned with the approach used in financial reporting and is based on the following criteria:

- All companies in which GF owns 50% or more of equity are consolidated at 100% and
- For companies where GF has a joint venture participation of 50% or less, environmental and health and safety data are weighted accordingly.

Target scope and calculation for the Sustainability Framework 2025

The [Sustainability Framework 2025](#) was introduced in 2021. Its targets have to be achieved within five years: by year-end 2025. In order to provide companies with a realistic timeframe for target attainment, only companies that

joined GF by 2022 are included in the calculation for the achievement of the Sustainability Targets 2025. Companies that joined later have individual targets. Business acquisitions, divestments and closures can affect the results as well. Organizational adjustments that took place in 2021 are explained in the above section: Scope of data collection and reporting. For previous changes, please refer to the specific Sustainability Report of that year.

The level of achievement for the Sustainability Framework's targets regarding water and waste is calculated relative to production volume. Average consumption for the years 2018–2020 serves as a baseline to reflect a more realistic consumption trajectory.³⁷

In addition, the Sustainability Framework calculates its CO₂e emissions targets using adjusted 2019 GHG emissions as a baseline reference.

For the supply chain target, the purchase volume of 2020 is used by GF Piping Systems. As the division has a conservative supplier base, those suppliers do not change often. For GF Casting Solutions and GF Machining Solutions, the purchase volume was updated in 2021 as the supplier base has changed compared to 2020. Both divisions will update the purchase volume data on an annual basis.

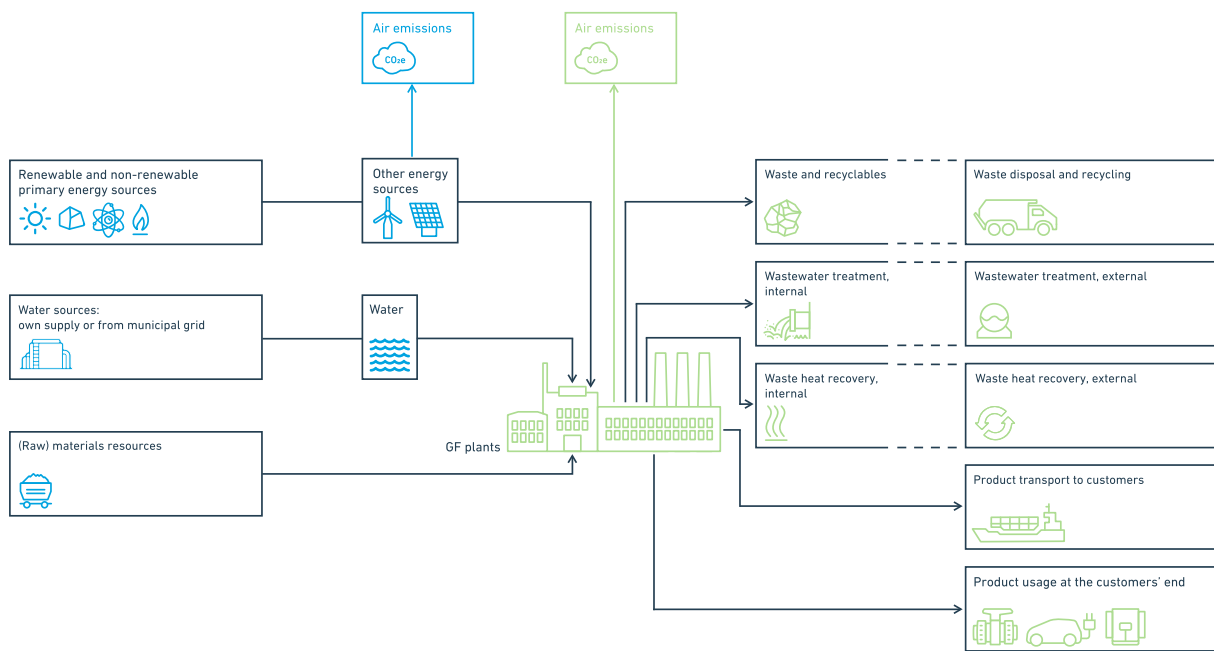
Economic performance indicators cover all of the companies under the scope of corporate consolidation, as reported in the GF Annual Report 2021.

In the year under review, GF had 139 companies. About 73% of them report their social and environmental indicators, which covers 97% of the production facilities and 78% of the total workforce.

The financial performance indicators follow Swiss GAAP FER principles (Swiss Generally Accepted Accounting Principles Accounting and Reporting Recommendations) and are consistent with those reported in the [Annual Report 2021](#).

The social performance indicators presented in this report are based on the data collected from all sales and production companies worldwide with more than 10 employees. They report this information to the sustainability teams at the divisional and corporate levels on a monthly, quarterly and bi-annual basis using the Sustainability Information System. Environmental performance indicators are reported by the production companies according to the same cycle. In addition, GF reports information about work-related incidents as they occur.

GF's environmental indicators are energy and water consumption (on the input side) and air emissions, waste, and wastewater (on the output side). GF also calculates the environmental impact of transportation at its facilities as well as business travel by plane or company car. In addition, in 2021, GF also calculated its scope 3 GHG emissions according to the Greenhouse Gas Protocol Corporate Standard for the first time. These emissions are the result of activities that GF does not directly control, but that it indirectly impacts in its value chain.



Recording limits for environmental data, as of December 31, 2021

Calculation methodology of scope 3 emissions data

In the year under review, all 15 scope 3 categories were screened to determine its relevance and the amount of CO₂e emissions. Two categories – purchased goods and services and the use of sold products – were found to contribute almost 90% of the total CO₂e emissions, whereas four categories were found to be irrelevant – leased assets, both upstream and downstream, as well as franchises and investments. Albeit less significant, the amount of CO₂e emissions were calculated for the remaining nine categories.

The scope 3 calculation included not only a quantification for the 2021 reporting year but was extended to 2019 and 2020. One of the reasons for calculating emissions over the three-year period is to establish a basis for comparison, but more importantly, 2019 is used as the base year for target setting over the 2021 to 2025 strategy period.

Scope 3 emissions data were calculated using a combination of methods for each category as prescribed by the GHG Protocol. For those categories that contribute most to emissions, primary data were used whereas for those activities that contribute least to emissions, secondary data were used. For the category on “purchased goods and services” supplier specific data based on GHG inventory sources for raw materials were obtained. For the “use phase of sold products” activity data were used based on the electricity consumed during operating hours for each type of machine.

Major assumptions made for calculating scope 3 emissions

Category 1: Purchased goods and services

For GF Piping Systems, the amounts of purchased raw material, pipes, glue, copper wires and other raw metals for fittings are included in the calculation.

For GF Casting Solutions, the amounts of purchased aluminum (primary, secondary), magnesium (alloy, pure), iron (scrap, pig), steel, alloys inoculants and other consumables are included in the calculation.

For GF Machining Solutions, emissions from purchased goods and services are excluded, due to immateriality after the first assessment.

GF's internal procurement systems serve as the database for all divisions.

Services were excluded from the purchased goods and services category due to the low emission intensity compared to the raw materials purchased for all three divisions.

For all three divisions, a combination ofecoinvent, supplier declarations and third-party research was used as sources for emission factors. In addition, for GF Machining Solutions, emission factors were derived from representative machines based on the share of sales per machine type.

Category 11: Use of sold products

For both GF Piping Systems and GF Casting Solutions, the products don't consume energy in the use phase, whereas for GF Machining Solutions, energy is consumed for its machines, for example EDM, milling and laser machines.

In those cases, the electricity consumption was based on the depreciation tables taken from the German Federal Ministry of Finance, while emission factors for electricity were taken from the International Energy Agency, including CH₄ and N₂O.

For GF Piping Systems, electric actuators were excluded as this was estimated to be consuming less than 0.1% of electricity during the use phase over a 10 year period.

In case of any further detailed question on the assumptions taken, the calculation approach or the emission factors please reach out to the Corporate Sustainability Team, at sustainability@georgfischer.com

External assurance

Transparent and verified reporting is important to GF. Therefore, the Sustainability Report is [externally assured by PricewaterhouseCoopers AG \(PwC\)](#). This includes the validation and verification of selected environmental and social performance indicators relevant to the GRI-Standards: Core option.

+ GRI 102-10 | GRI 102-45 | GRI 102-48 | GRI 102-50 | GRI 102-52 |
GRI 102-54

³⁶ Formerly known as SAM CSA and Dow Jones Sustainability Rating.

³⁷ In any given year, some of the indicators may be influenced by random weather fluctuation, such as a cold winter, which translates into an increase in energy consumption for heating.

GRI/SASB content index

102 General Disclosures

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2021	Annual Report 2021	Other
Organizational profile					
102-1		Name of the organization	Landing page		
102-2		Activities, brands, products, and services	Corporate profile		
102-3		Location of headquarters	Corporate profile		
102-4		Location of operations	Worldwide presence		
102-5		Ownership and legal form		Organization of GF	
				GF share and shareholders	
102-6		Markets served	Corporate profile		
102-7		Scale of the organization	Worldwide presence		
			Key figures 2021	Key figures 2021	
102-8	RT-IG-000.B	Information on employees and other workers	Social performance indicators	Key figures 2021	
102-9		Supply chain	Value chain		
102-10		Significant changes to the organization and its supply chain	Scope of data collection and reporting	Consolidated statement of changes in equity	4 Corporate Structure
102-11		Precautionary principle or approach	Environmental protection		
			Topics of material importance		
102-12		External initiatives	CDP ranking on Climate Change and Water Security		UN Global Compact
			Human rights		CDP
102-13		Membership of associations			UN Global Compact
					SwissHoldings association
Strategy					
102-14		CEO statement	Letter to our stakeholders		
102-15		Key impacts, risks, and opportunities		TCFD Report	
Ethics and integrity					
102-16		Values, principles, standards, and norms of behavior	Business conduct		Values & purpose
					Code of Conduct
102-17		Mechanism for advice and concerns about ethics	Corporate compliance		GF Transparency Line
Governance					
102-18		Governance structure	Governance	Governance bodies	
102-19		Delegating authority	Governance		
102-20		Executive-level responsibility for economic, environmental, and social topics	Governance		

Stakeholder engagement		
102-40	List of stakeholder groups	Stakeholder dialogue
102-41	Collective bargaining agreements	Employee representation
		Social performance indicators
102-42	Identifying and selecting stakeholders	Stakeholder dialogue
		Value chain
		Topics of material importance
102-43	Approach to stakeholder engagement	Stakeholder dialogue
		Topics of material importance
102-44	Key topics and concerns raised	Stakeholder dialogue
		Topics of material importance
Reporting practice		
102-45	Entities included in the consolidated financial statements	Scope of data collection and reporting Scope and principles of consolidation
102-46	Defining report content and topic boundaries	Topics of material importance
102-47	List of material topics	Topics of material importance
102-48	Restatements of information	Scope of data collection and reporting
102-49	Changes in reporting	Topics of material importance
102-50	Reporting period	Disclosure information
102-51	Date of most recent report	Disclosure information
		GF Sustainability Report 2020
		GF Sustainability Report 2019
102-52	Reporting cycle	Reporting cycle
102-53	Contact point for questions regarding the report	Contacts
102-54	Claims of reporting in accordance with the GRI Standards	Disclosure information
102-55	GRI content index	GRI content index
102-56	External assurance	External assurance

200 Economic Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2021	Annual Report 2021	Other
GRI 201: Economic performance 2016					
103-1/2/3		Management approach disclosures		Letter to Shareholders	
				Strategy 2025	
201-1		Direct economic value generated and distributed	Key figures for 2021	Georg Fischer Ltd income statement	
			Economic performance indicators	1.6 Income taxes	
				Key figures 2021	
GRI 203: Indirect economic impacts 2016					
103-1/2/3		Management approach disclosures	Sustainability management at GF		
203-1		Infrastructure investments and services supported	Corporate citizenship	Communities and NGOs	
			GF's contribution to SDG 6		
GRI 205: Anti-corruption 2016					
103-1/2/3		Management approach disclosures	Corporate Compliance		
205-2		Communication and training about anti-corruption policies and procedures	Corporate Compliance		
GRI 206: Anti-competitive behavior 2016					
103-1/2/3		Management approach disclosures	Good governance		
206-1		Legal actions for anti-competitive behavior, anti-trust, and monopoly practices ¹			
GRI 207: Tax 2019					
103-1/2/3		Management approach disclosures	Tax management		GF Tax Policy
207-1		Approach to tax	Tax management		
207-2		Tax governance, control, and risk management	Tax management		
207-3		Stakeholder engagement and management of concerns related to tax	Tax management		
207-4		Country-by-country reporting ²			

1 Omission GF is not aware of any legal actions against it for anti-competitive behavior, anti-trust, and monopoly practices that took place during the reporting period. GF can confirm that no fines or non-monetary sanctions were imposed on it in 2021.

2 Omission GF's incentives are business and market driven, not tax driven. For GF strong tax governance is established (see GF's tax policy), the tax payment follows the business.

300 Environmental Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2021	Annual Report 2021	Other
GRI 301: Materials 2016					
103-1/2/3		Management approach disclosures	Waste		GF Corporate Environmental Management Policy
301-1		Materials used by weight or volume ¹	Environmental performance indicators		
GRI 302: Energy 2016					
103-1/2/3		Management approach disclosures	GHG emissions		GF Corporate Environmental Management Policy
			Sustainability management at GF		GF Corporate E-mobility Policy
302-1	RT-IG-130a.1	Energy consumption within the organization	Key figures for 2021		
			GHG emissions		
			Environmental performance indicators		
302-3		Energy intensity	Environmental performance indicators		
302-4		Reduction of energy consumption	GHG emissions		
			Environmental performance indicators		
GRI 303: Water and effluents 2018					
103-1/2/3		Management approach disclosures	Water		
			Sustainability Framework 2025		
303-1		Interactions with water as a shared resource	Water		
			Sustainability Framework 2025		
303-2		Management of water discharge-related impacts	Water		2021 CDP water security questionnaire
303-3		Water withdrawal ²	Environmental performance indicators		
303-4		Water discharge ²	Environmental performance indicators		
303-5		Water consumption	Water		
			Environmental performance indicators		
GRI 305: Emissions 2016					
103-1/2/3		Management approach disclosures	GHG emissions		GF Corporate Environmental Management Policy
			Sustainability management at GF		
			Sustainability Framework 2025		
305-1		Direct (Scope 1) GHG emissions	GHG emissions		

			Environmental performance indicators	
305-2	Energy indirect (Scope 2) GHG emissions	GHG emissions	Environmental performance indicators	
305-3	Other indirect (Scope 3) GHG emissions	GHG emissions	Environmental performance indicators	
305-4	GHG emissions intensity	Environmental performance indicators		
305-5	Reduction of GHG emissions	GHG emissions	Environmental performance indicators	
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	Environmental performance indicators		
GRI 306: Waste 2020				
103-1/2/3	Management approach disclosures	Waste		Closing the Loop: Circular Economy at GF
		Sustainability Framework 2025		
306-1	Waste generation and significant waste-related impacts	Waste		
		Product portfolio		
306-2	Management of significant waste-related impacts	Waste		
		Product portfolio		
306-3	Waste generated	Waste		
		Environmental performance indicators		
306-4	Waste diverted from disposal	Waste		
		Environmental performance indicators		
		Sustainability Framework 2025		
306-5	Waste directed to disposal	Waste		
		Environmental performance indicators		
GRI 307: Environmental compliance 2016				
103-1/2/3	Management approach disclosures	Environmental protection		GF Corporate Environmental Management Policy
307-1	Non-compliance with environmental laws and regulations	Environmental protection		
GRI 308: Supplier environmental assessment 2016				
103-1/2/3	RT-IG-440a.1	Management approach disclosures	Supply chain	
			Sustainability Framework 2025	
308-1	New suppliers that were screened using environmental criteria	Supply chain	Sustainability Framework 2025	

1 Omission Data is only available for GF Piping Systems, the division for which recycling and the circular economy are focus topics. Data on non-renewable and renewable materials used helps the division understand the status of its operations and how it can improve. Data is not available for GF Casting Solutions (its components are already fully recyclable) or for GF Machining Solutions (according to Scope 3 assessment, the impact of its purchased good and services on its overall footprint is very low).

2 Omission The types of water withdrawal and water discharge by GF sites are indicated in the breakdown provided within the "Environmental performance indicators" table. No other withdrawal or discharge methods are applicable. The information on water withdrawal and discharge methods is collected from and provided by GF sites.

400 Social Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2021	Annual Report 2021	Other
GRI 401: Employment 2016					
103-1/2/3		Management approach disclosures	Employee engagement		
			Stakeholder dialogue		
			Sustainability Framework 2025		
401-1		New employee hires and employee turnover	Social performance indicators		
401-3		Parental leave ¹			
GRI 403: Occupational Health and Safety 2018					
103-1/2/3		Management approach disclosures	Health and safety		
			Sustainability Framework 2025		
403-1		Occupational health and safety management system	Health and safety		
403-2		Hazard identification, risk assessment, and incident investigation	Reducing the risk of accidents		
403-3		Occupational health services	Health and safety		
403-4		Worker participation, consultation, and communication on occupational health and safety	Reducing the risk of accidents		
403-5		Worker training on occupational health and safety	Reducing the risk of accidents		
403-6		Promotion of worker health	COVID-19 response management		
			Promotion of worker health		
403-7		Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Product and service information and labeling		
			Health and safety		
403-8		Workers covered by an occupational health and safety management system	Health and safety		
403-9	RT-IG-320a.1	Work-related injuries	Safety indicators		
			Social performance indicators		
			Sustainability Framework 2025		
			Key figures for 2021		
GRI 404: Training and education 2016					
103-1/2/3		Management approach disclosures	Employee engagement		
			GF's contribution to SDG 4		
404-1		Average hours of training per year per employee	Social performance indicators		

404-2	Programs for upgrading employee skills and transition assistance programs	Employee engagement Diversity and inclusion	
GRI 405: Diversity and equal opportunity 2016			
103-1/2/3	Management approach disclosures	Diversity and inclusion Sustainability Framework 2025	
405-1	Diversity of governance bodies and employees	Diversity and inclusion Sustainability Framework 2025 Social performance indicators	Members of the Board of Directors Members of the Executive Committee
GRI 406: Non-discrimination 2016			
103-1/2/3	Management approach disclosures	Diversity and inclusion	Code of Conduct
406-1	Incidents of discrimination and corrective actions taken	Diversity and inclusion Social performance indicators	
GRI 412: Human rights assessment 2016			
103-1/2/3	Management approach disclosures	Human rights Supply chain	GF Corporate Human Rights Policy
412-1	Operations that have been subject to human rights reviews or impact assessments ²		Internal Audit
GRI 414: Supplier social assessment 2016			
103-1/2/3	Management approach disclosures	Supply chain	GF Corporate Human Rights Policy
414-2	Negative social impacts in the supply chain and actions taken	Supply chain	
GRI 415: Public policy 2016			
103-1/2/3	Management approach disclosures	Stakeholder dialogue Public policy	
415-1	Political contributions	Public policy	
GRI 416: Customer health and safety 2016			
103-1/2/3	Management approach disclosures	Product and service information and labeling	
416-1	Assessment of the health and safety impacts of product and service categories ³		
GRI 417: Marketing and labeling 2016			
103-1/2/3	Management approach disclosures	Product and service information and labeling	
417-1	Requirements for product and service information and labeling	Product and service information and labeling	
GRI 419: Socioeconomic compliance 2016			
103-1/2/3	Management approach disclosures	Good governance	
419-1	Non-compliance with laws and regulations in the social and economic area ⁴	Good governance	

1 Omission Information is not available for all the countries where GF operates. In the future, the data collection process will be expanded.

2 Omission Human rights topics are included in internal audit procedures at individual locations. The selection of these locations is based on systematic and disciplined risk assessments in internal auditing. Details on the specific locations cannot be disclosed due to the underlying confidentiality as required by the internal audit charter.

3 Omission Information on the exact percentage of significant product and service categories assessed for health and safety impacts is currently unavailable.

4 Omission GF is not aware of any significant incidents of non-compliance with laws and regulations in the social and economic area that took place during the reporting period.

+ GRI 102-55

External assurance

Independent practitioner's limited assurance report

on the selected sustainability indicators in the Sustainability Report 2021 to the Board of Directors of Georg Fischer AG

Schaffhausen

We have been engaged by the Management to perform assurance procedures to provide assurance on the selected sustainability indicators published in the Sustainability Report 2021 of Georg Fischer AG, Schaffhausen and its consolidated subsidiaries ('GF' for short) for the period ended 31 December 2021.

The following specified sustainability indicators published in the Sustainability Report 2021 are within the scope of our limited assurance engagement and are referenced with footnote 7 or 8 '2021 PwC assured':

- Selected environmental performance indicators: 'GHG emissions – Scope 1' on page 134, 'GHG emissions – Scope 2 – market-based' on page 134, 'GHG emissions – Scope 2 – location-based' on page 134, 'GHG emissions – Scope 3 – Category 1: Purchased goods and services' on page 134, 'GHG emissions – Scope 3 – Category 11: Use of sold products' on page 134, 'Water consumption of GF sites located in water stressed areas' on page 135, 'Total waste' on page 135, 'Hazardous waste' on page 135, 'Key suppliers spend assessed with sustainability assessments' on page 135;
- Selected social performance indicators: 'Fatalities, work-related' on page 138, 'Lost time injury frequency rate' on page 138.

We have not carried out any work on data reported for prior reporting periods.

Criteria

The management reporting processes for the sustainability reporting and the related sustainability indicators were prepared by GF based on the sustainability reporting guidelines in accordance with the 'GRI Standards' published in October 2016 by the Global Reporting Initiative and on the Greenhouse Gas Protocol Initiative of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) (hereafter referred to as the 'suitable Criteria').

Inherent limitations

The accuracy and completeness of sustainability indicators in the Sustainability Report 2021 of GF are subject to inherent limitations given their nature and methods for determining, calculating and estimating such data. GHG quantification is subject to inherent uncertainty, because of incomplete scientific knowledge used to determine GHG emission factors and the values needed to combine emissions of different gases. Our assurance report should therefore be read in connection with the 'GRI Standards' published in October 2016 by the Global Reporting Initiative and on the Greenhouse Gas Protocol Initiative of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

Responsibility of the Board of Directors of Georg Fischer

The Board of Directors of Georg Fischer AG is responsible for preparing the Sustainability Report 2021 (including the GHG statement) in accordance with suitable Criteria. This responsibility includes the design, implementation and maintenance of the internal control system related to the preparation of the Sustainability Report 2021 of GF that are free from material misstatement, whether due to fraud or error. Furthermore, the Board of Directors is responsible for the selection and application of the suitable Criteria and adequate record keeping.

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PricewaterhouseCoopers AG is a member of the global PricewaterhouseCoopers network of firms, each of which is a separate and independent legal entity.

Our independence and quality controls

We are independent of the Georg Fischer AG in accordance with the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants (IESBA Code). We have fulfilled our other ethical responsibilities in accordance with the IESBA Code, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

PricewaterhouseCoopers AG applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Practitioner's responsibility

Our responsibility is to perform a limited assurance engagement and to express conclusion on the selected sustainability indicators in the Sustainability Report 2021 of GF. We planned and performed our procedures in accordance with the International Standards on Assurance Engagements (ISAE 3000) (Revised) 'Assurance engagements other than audits or reviews of historical financial information' and with the International Standard on Assurance Engagements (ISAE 3410) 'Assurance Engagements on Greenhouse Gas Statements', issued by the International Auditing and Assurance Standards Board. These standards require that we plan and perform our procedures to obtain limited assurance on whether the selected sustainability indicators (including the GHG statement) were prepared, in all material aspects, in accordance with suitable Criteria.

Based on risk and materiality considerations, we performed our procedures to obtain sufficient and appropriate assurance evidence. The procedures selected depend on the assurance practitioner's judgement. A limited assurance engagement under ISAE 3000 (Revised) and ISAE 3410 is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks. Consequently, the nature, timing and extent of procedures for gathering sufficient appropriate evidence are deliberately limited relative to a reasonable assurance engagement and therefore less assurance is obtained with a limited assurance engagement than for a reasonable assurance engagement.

Summary of the work performed

Our limited assurance procedures included, amongst others, the following work:

- *Evaluation of the application of Corporation guidelines*
Reviewing the application of the internal sustainability reporting guidelines.
- *Site visit and management inquiry*
 - Remotely visiting selected sites of Georg Fischer Casting Solutions Linamar and Georg Fischer Piping Systems Shawnee in the United States of America.
 - Interviewing personnel responsible for internal sustainability reporting and data collection at the sites and at the Group level.
- *Assessment of the selected sustainability indicators*
Performing tests on a sample basis of the evidence supporting the selected sustainability indicators concerning completeness, accuracy, adequacy and consistency.
- *Review of documentation and analysis of relevant basic policies and principles*
Reviewing relevant documentation on a sample basis, including the sustainability policies of GF, management of reporting structures and documentation.

We have not carried out any work on data other than outlined in the scope and subject matter section as defined above.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our assurance conclusions.

Conclusion

Based on our work performed nothing has come to our attention causing us to believe that in all material respects the selected sustainability indicators on pages 134 to 138 in the Sustainability Report 2021 of Georg Fischer AG and referenced with a footnote no 7 or 8 are not prepared '2021 PwC assured' in accordance with suitable Criteria.



Intended users and purpose of the report

This report is prepared for, and only for, the Board of Directors of Georg Fischer AG, and solely for the purpose of reporting to them on selected sustainability indicators in the Sustainability Report 2021 (including the GHG statement) and no other purpose. We do not, in giving our conclusion, accept or assume responsibility (legal or otherwise) or accept liability for, or in connection with, any other purpose for which our report including the conclusion may be used, or to any other person to whom our report is shown or into whose hands it may come, and no other persons shall be entitled to rely on our conclusion.

We permit the disclosure of our report, in full only, to enable the Board of Directors to demonstrate that they have discharged their governance responsibilities by commissioning an independent assurance report over the selected sustainability indicators in the Sustainability Report 2021 (including the GHG statement), without assuming or accepting any responsibility or liability to any third parties on our part. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Board of Directors of Georg Fischer AG for our work or this report.

PricewaterhouseCoopers AG

Stephan Hirschi

Irina Schöpfer

Zurich, April 7, 2022



Links to selected sustainability indicators:

- [GHG emissions – Scope 1](#)
- [GHG emissions – Scope 2 – location-based](#)
- [GHG emissions – Scope 2 – market-based](#)
- [GHG emissions – Scope 3 – Category 1: Purchased goods and services](#)
- [GHG emissions – Scope 3 – Category 11: Use of sold products](#)
- [Water consumption of GF sites located in water stressed areas](#)
- [Total waste](#)
- [Hazardous waste](#)
- [Key suppliers spend assessed with sustainability assessment](#)
- [Accident rate, as LTIFR](#)
- [Fatalities, work-related](#)

✚ GRI 102-56

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All photos for the GF Sustainability Report 2021 were taken in strict compliance with the locally applicable COVID-19 protection regulations.

Disclaimer

The statements in this publication relating to matters that are not historical facts are forward-looking statements that are not guarantees of future performance and involve risks, uncertainties, and other factors beyond the control of the company.

The Sustainability Report 2021 of GF is also available in German. In the event of any discrepancy, the English version shall prevail.

We thank our customers for their consent to publish the joint success stories.

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