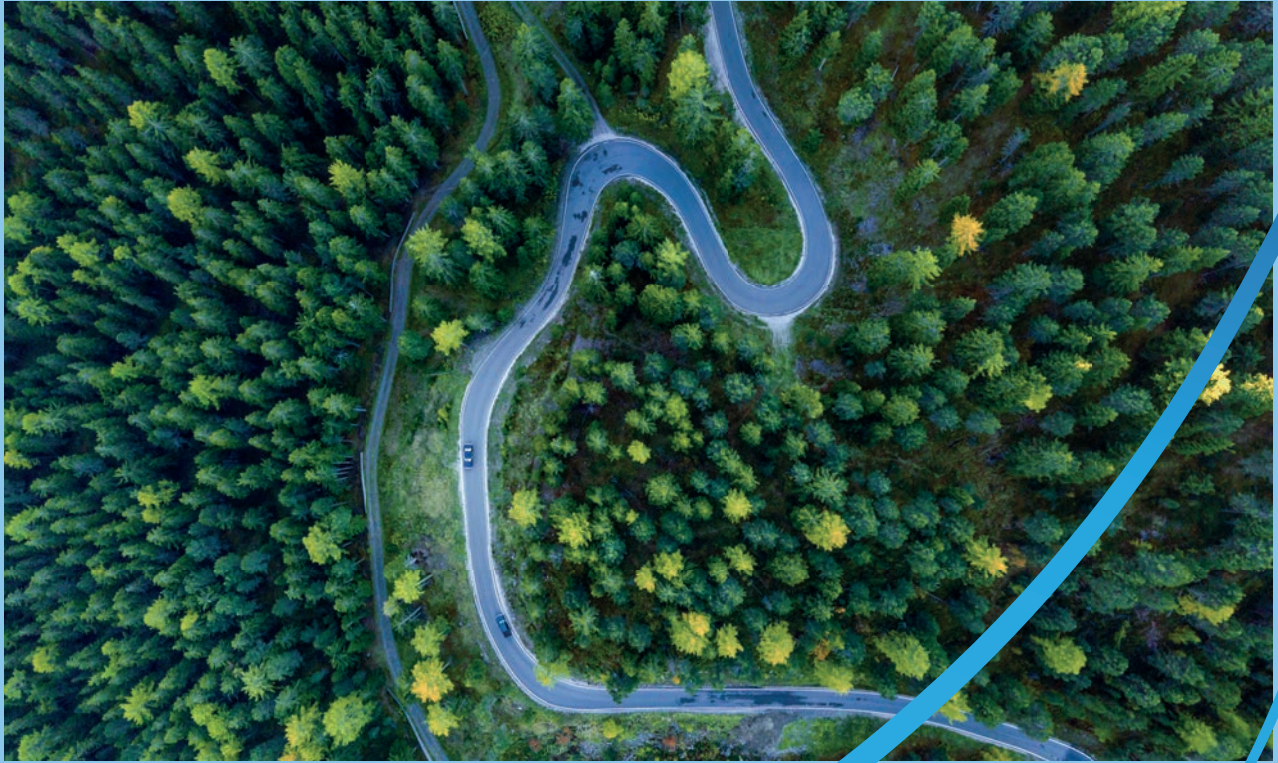


**+GF+**



# Sustainability Report

**Going forward and shaping the future**

# Sustainability Report

## Sustainability key figures

Sustainability key figures.....	89
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## Progress on sustainability

Progress on Sustainability Framework 2025.....	93
Sustainability governance.....	99

## Product portfolio

Product portfolio.....	106
GF Piping Systems.....	110
GF Casting Solutions.....	115
GF Machining Solutions.....	119

## Climate and resources

Climate and energy.....	123
Water footprint.....	134
Natural resources.....	139

## People and well-being

Safety and well-being.....	145
Diversity and inclusion.....	154
Fair and attractive employer.....	160

## Our stakeholders

- Stakeholder engagement.....168
- Material topics.....176
- Business ethics and compliance.....180
- Responsible supply chain.....187
- Corporate citizenship.....193

## Disclosure information

- Reporting approach.....197
- Environmental performance indicators.....207
- Social performance indicators.....210
- GRI/SASB content index.....213
- External assurance.....221
- Contacts.....225

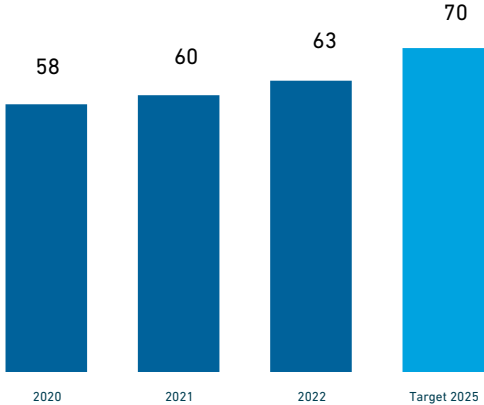
# Sustainability key figures 2022

Click here to see the [financial key figures](#).

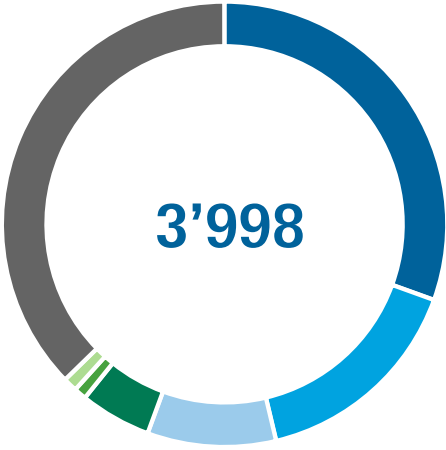
The presented Sustainability key figures follow the targets of GF's [Sustainability Framework 2025](#) which is an integral part of the strategy 2025.

# Product portfolio

**Sales with social or environmental benefits  
% of total sales**



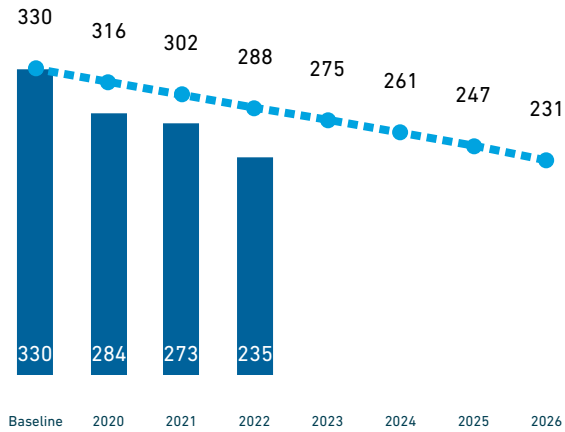
**2022 sales with social or environmental benefits  
in CHF million**



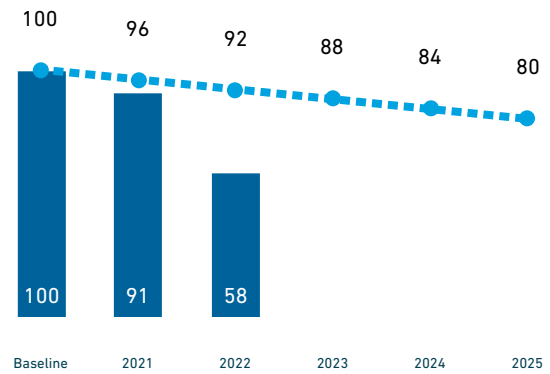
- 31% Mitigating climate change**
- 16% Conserving water**
- 9% Promoting safety**
- 5% Ensuring health**
- 1% Delivering education**
- 1% Sustainable buildings**
- 37% No direct or substantial impacts**

# Climate and resources<sup>1</sup>

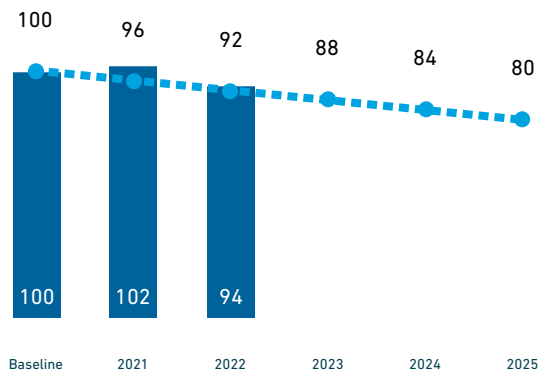
**CO<sub>2</sub>e emissions (scope 1 and 2)**  
in 1'000 tonnes



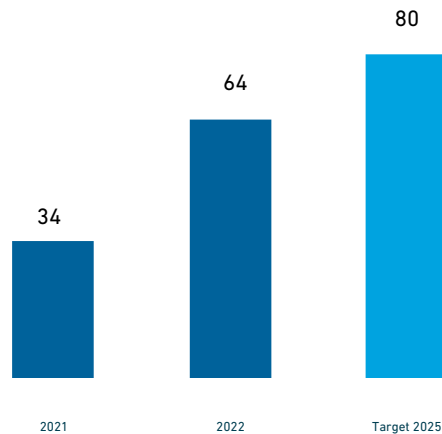
**Unrecycled waste intensity index**  
(unrecycled waste per production volume) in %



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

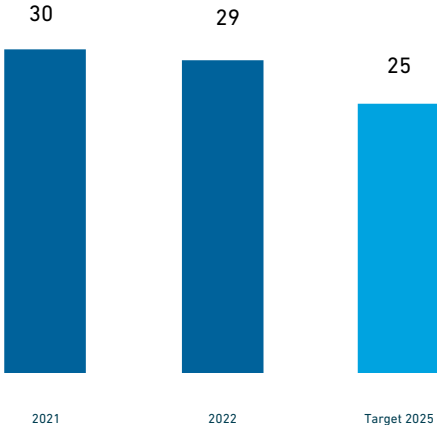


**Conducted sustainability assessments of key suppliers**  
in % of procurement spend

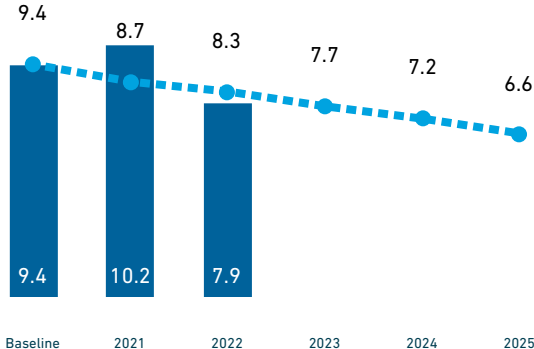


# People and well-being

**Newly appointed women managers in %**



**Accident rate as lost time injury frequency rate (LTIFR)<sup>2</sup> per million hours worked**



+ GRI 303-1 | GRI 305-1 | GRI 305-2 | GRI 305-5

<sup>1</sup> In order to report data in time for the publication of the 2022 Sustainability Report, data for environmental figures are actuals for the period from January to September, where available from January to October, and forecasted for the remaining period from October/November to December 2022. Further information on the forecasting methodology is available in the [Reporting approach](#).

<sup>2</sup> In 2022, following GF's target calculation approach four GF companies were newly added to the sustainability targets 2025. The change of scope in reporting was only visible in the baseline of the accident rates target and therefore the target and the baseline was adjusted. Further details are available: [Reporting approach](#)


# Progress on Sustainability Framework 2025

An integral part of the GF Strategy 2025, the Sustainability Framework defines eight clear targets to achieve across the company's operations as part of its roadmap to become a sustainability and innovation leader providing superior customer value. Reflecting the company's commitment to transparency, this report discloses the progress made in the second of this five-year journey.






# Progress in 2022

In the past year, GF made good progress against most of its targets. The following provides an overview of where GF stands with regards to its targets and what has been achieved during 2022.





## Product portfolio

Target 2025	Status 2022	Progress in 2022
<div style="display: flex; align-items: center;">  <div> <p><b>Product portfolio</b></p> <p><b>70% of sales</b> with social or environmental benefits</p> </div> </div>		<p><b>GF generated 63% of its sales from products, systems or solutions that deliver social or environmental benefits.</b></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. All divisions aim to maximize the social and environmental benefits of their innovations. For this purpose, a sustainability radar was developed to quickly evaluate different options.</p> <p>Further details are available in <a href="#">Product portfolio</a>.</p>



## Climate and resources

Target 2025	Status 2022	Progress in 2022
<div style="display: flex; align-items: center;">  <div> <p><b>SBT CO<sub>2</sub>e emissions</b></p> <p>Reduce <b>absolute scope 1 and 2 CO<sub>2</sub>e emissions by 30%</b> by 2026</p> </div> </div>		<p><b>GF reduced its scope 1 and 2 emissions by 29% compared with the baseline.</b></p> <p>In 2022, the SBTi validated GF's <a href="#">GHG emissions targets</a>.</p> <p>GF made significant progress toward achieving this target in the year under review. The increase of renewable energy by 31%, contributed to this great achievement. In addition, several sites invested to install <a href="#">photovoltaic (PV) systems on the roofs of buildings</a>.</p>

Further details are available in [Climate and energy](#).



### SBT CO<sub>2</sub>e emissions

Reduce **scope 3 CO<sub>2</sub>e emissions by 34.6% per tonne of processed material and use of sold products** by 2030



**The scope 3 intensity increased to 3.9 tonnes of CO<sub>2</sub>e per tonne of processed material and use of sold products compared with the baseline.**

The main reason was the planned ramp-up phase of magnesium components and change of content in the iron foundry of GF Casting Solutions. The other two divisions decreased the intensity due to their investment in bio-based material for GF Piping Systems' products and reduced electricity consumption of machines.

Further details are available in [Climate and energy](#).



### Water

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



**GF's water intensity in high-stress areas decreased by 6% compared with the baseline.**

Compared to 2021, the company decreased its water intensity. The main improvements stem from water management measures at a GF Casting Solutions site in China and GF Piping Systems sites in Indonesia and the US.

Further details are available in the [Water footprint](#).



### Waste

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



**GF reduced the intensity of waste sent to landfill or incineration by 42% compared with the 2018–2020 average.**

The main contribution to the target achievement was the sand recycling programs at the GF Casting Solutions site in Leipzig (Germany) and the GF Piping Systems site in Sissach (Switzerland). During the reporting year, GF recycled 78% of its waste.

Further details available in [Natural resources, materials and waste management](#).



**Supply chain**

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



**GF assessed 64% of its procurement spend in 2022, which is in line with achieving its five-year goal.**

GF has partnered with the rating agency EcoVadis to conduct these sustainability assessments. In addition, the company accepts similar ratings and in-house developed sustainability risk screenings. In 2022, the responsible procurement team continued with the supplier assessments and started with a series of webinars to help suppliers improve their ratings. In total, approximately 600 suppliers out of some 1'200 key suppliers were assessed. In the upcoming years, the team will continue with the assessments and work in parallel to improve the supplier's score, if necessary.

Further details are available in [Responsible supply chain](#).



People and well-being

Target 2025	Status 2022	Progress in 2022
-------------	-------------	------------------



**Diversity and inclusion**

**25% of newly appointed managers are women**



**29% of newly appointed managers were women, meaning GF exceeded its target.**

All three divisions contributed to this progress. In the year under review, several awareness raising trainings and leadership programs took place in various GF locations worldwide. To further advance the D&I initiatives, GF conducted a specific survey at the end of 2022. Those results are being analyzed in the first quarter of 2023. To move beyond the gender focus, the internal employee magazine **Globe** focused on various aspects of diversity in GF in all facilities in its last 2022 issue.

Further details are available in the section [Diversity and inclusion](#).



**Employee engagement**

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



**Two divisions conducted an employee engagement survey during 2022, a global survey is planned for 2023.**

GF Casting Solutions conducted an employee survey that 2'228 employees participated in, with 79% considering the division as an "employer of choice". GF Machining Solutions carried out a similar survey in November 2022 that had a participation rate of 65.8% and an employee satisfaction rate of 74.1%. Local management teams have started to work on improvement measures to raise employee satisfaction.

Further details are available in [Fair and attractive employer](#).



**Health and safety**

Reduce **accident rate by 30%**



**GF's accident rate dropped to 7.9 LTIFR in 2022. The total number of accidents were 265 which equals a 12% reduction in the number of accidents compared with 2021.**

This progress is mainly due to a focus on safety, the continuous improvements implemented and the "Zero Risk/Be aware Be safe" campaign.

Further details are available in [Safety and well-being](#).



Exceeded



On track



Below expectations

# Sustainability Framework 2025



## Product portfolio

Innovate products and solutions for a sustainable lifecycle



## Product portfolio

70% of sales with social or environmental benefits



## Climate & resources

Decouple resource consumption from growth

### SBT CO<sub>2</sub>e emissions

Reduce absolute scope 1 and 2 CO<sub>2</sub>e emissions by 30% by 2026

Reduce scope 3 CO<sub>2</sub>e emissions by 34.6% per tonne of processed material and use of sold products by 2030



### Water

Reduce water intensity by 20% in high-stress areas



### Waste

Reduce waste intensity by 20% sent to landfill or incineration



### Supply chain

Perform sustainability assessments for 80% of procurement spend



## People & well-being

Pursue a diverse, engaging and safe work place



## Diversity and inclusion

25% of newly appointed managers are women



## Employee engagement

At least 80% recommend GF as an employer of choice



## Health and safety

Reduce accident rate by 30%

+ GRI 3-3 | GRI 303-1 | GRI 305-5 | GRI 403-9 | GRI 405-1

# Sustainability governance

As an integral part of GF's business and corporate culture, sustainability is a core focus for GF throughout its entire organization – from the highest decision-makers on its Board of Directors to its individual divisions, sites and teams. Its governance structure defines clear responsibilities and accountabilities in its sustainability planning, implementation, tracking and reporting.

Under this sustainability governance structure, GF works to continually raise the sustainability benefits of its product portfolio, lower its green house gas emissions (GHG), reduce waste and preserve natural resources, while creating a safe, diverse, inclusive and engaging workplace. It achieves these goals through defined key performance indicators (KPIs) and tracking and reporting across all levels of the company, in compliance with international standards and strict internal policies. GF's commitment to sustainability governance is reflected in its external ratings, where it consistently receives positive assessments from the world's leading rating agencies.



GF achieves its sustainability goals through defined key performance indicators (KPIs) and tracking and reporting across the company.

## Sustainability ratings

Rating agency	Performance	Performance
	2022	2021
<b>CDP</b> (A is the highest score.)	A- on climate	A- on climate
	A- on water	A- on water
<b>S&amp;P Global CSA</b>	<b>63/100</b>	60/100
<b>MSCI</b> (AAA is the highest score.)	<b>AA</b>	AA
<b>Sustainalytics</b>	ESG Risk Rating: 25.2 (Medium Risk) (last update March 2022) <b>Score 59/413</b> (update November 2022)	ESG Risk Rating: 25.3 (Medium Risk) <b>Score 46/363</b>
<b>ISS ESG</b>	<b>C+ prime status</b>	C+ prime status
<b>ISS quality scores</b> (1 is the highest score. Scores updated throughout the year, last update December 2022)	<b>1 - Environment</b> <b>1 - Social</b> <b>2 - Governance</b>	<b>1 - Environment</b> <b>2 - Social</b> <b>4 - Governance</b>

### CDP

In December 2022, for the third year in a row, the London-based CDP (formerly, Carbon Disclosure Project) rating agency awarded GF an A- rating (leadership level) for its efforts regarding climate change and water security. GF's management of its environmental and climate impacts is embedded in its Sustainability Framework 2025.

### S&P Global CSA

In 2022, GF obtained an overall score of 63, an increase of two points compared with 2021. For the very first time, [GF was recognized as a Sustainability Yearbook Member](#) for its good rating performance in 2022 in the S&P Global Sustainability Yearbook. Only 708 companies qualified for the yearbook out of over 7'800 in 61 industries that were assessed. The S&P Global Corporate Sustainability Assessment (CSA) is an annual evaluation of companies' sustainability practices. The CSA focuses on sustainability criteria that are both industry-specific and financially material.

## EcoVadis

Both GF Piping Systems and GF Casting Solutions received an EcoVadis silver medal, placing them among the top 25% of companies assessed. The award recognizes their performance in 2022 on criteria relating to the environment, labor and human rights, ethics and sustainable procurement.

## MSCI

In 2022, GF maintained a AA rating from MSCI, a global agency that measures and ranks companies' management of financially relevant sustainability risks and opportunities. GF was among just 28% of companies to achieve a AA score in 2022.

## Financial Times (FT) and Statista Climate Leaders list

After reducing its GHG emission intensity by 10.9% between 2015 and 2020, GF now ranks among the top five of 26 machinery and industrial equipment companies in the 2022 FT and Statista Climate Leaders list. The financial media outlet and the statistics portal recognize companies that achieve the greatest reduction in their scope 1 and 2 greenhouse gas (GHG) emission intensity in a five-year period. The FT and Statista have defined emission intensity as tonnes of GHG emissions per EUR 1 million of revenue.

# Environmental management system

An environmental management system (EMS) enables GF to manage resources more efficiently and sites to take corrective actions if their consumption exceeds defined targets. An EMS also helps facility operators create data-driven approaches for improving energy efficiency and reducing consumption.

At the end of 2022, 93% of GF's legal entities with production facilities reported their data into the Sustainability Information System (SIS) tool and 89% of them had an EMS in place that was certified to ISO 14001, an internationally recognized standard for environmental management systems. In addition, nine facilities from GF Piping Systems and GF Casting Solutions were certified to the energy management standard ISO 50001. These nine sites account for 47% of GF's total energy consumption.

# Health and safety management system

GF has formalized its goal of reducing injuries through its global adoption of the occupational health and safety (OHS) management system according to ISO 45001. The company had committed that all its production plants worldwide must be certified to ISO 45001 and that newly acquired companies have up to three years from their acquisition to achieve certification. At the end of 2022, 48 plants, representing 86% of production companies, were ISO 45001 certified. GF Urecon's newly acquired companies have now been certified to ISO 45001.



## Governance

The GF Board of Directors is responsible for the company's overall sustainability performance. In mid-2020, sustainability came under the remit of the Nomination Committee, which was renamed the Nomination and Sustainability Committee. More information about the areas of focus and meetings held in the year under review can be found in the chapter [Nomination and Sustainability Committee](#). GF measures its overall progress against a predetermined timeline and the strategy cycle.

The Sustainability Committee also ensures that executive compensation is aligned with GF's sustainability goals – in particular, the eight targets of the [Sustainability Framework 2025](#). As a result, each Executive Committee member's [short-term incentive \(STI\)](#) is linked to the company-wide CO<sub>2</sub>e emission target. Members also have individual targets linked to initiatives such as the zero accidents campaign, as well as circular economy benchmarks or targets to implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

The Executive Committee oversees GF's progress in reaching its strategic goals and targets. It also conducts performance reviews between two and four times per year and within each division's management meetings. These reviews allow the Executive Committee to take the strategic and operational actions needed to ensure the company is on track to meet its sustainability goals.

To assist the Executive Committee in implementing the Sustainability Framework 2025, GF established the Corporate Sustainability Council (CSC). Headed by the CSC Chairperson, who advises the Executive Committee, the council also oversees and coordinates all sustainability-related activities. The CSC meets twice a year. Members include the CEO, CFO, divisional presidents, corporate and divisional sustainability teams and high-level members of management.

The CSC's key responsibilities include the following:

- tracking and reporting GF's progress in its Sustainability Framework 2025;
- supporting the Executive Committee in making decisions on cross-divisional sustainability projects and initiatives;
- coordinating and supervising these projects and initiatives; and
- reporting their progress to the Executive Committee.

## Corporate Sustainability

Corporate Sustainability manages and coordinates all relevant sustainability activities within GF and with its external stakeholders. In a broader sense, it also raises organizational awareness about sustainability and climate-related risks. Its core duties include implementing the Sustainability Framework 2025 as an integral part of the Strategy 2025 and collaborating with the divisions to support the rollout of sustainability activities.

Corporate Sustainability is also responsible for the transparent annual disclosure of the company's sustainability performance in the annual sustainability report and other channels. The department's ongoing cooperation with external ESG rating agencies is an important task and is closely linked to Investor Relations. It also works in close contact with each division's sustainability teams to track the progress of individual sites, business units and divisions against their targets.

Reporting to the CFO, the Head of Corporate Sustainability leads the Corporate Sustainability team in focusing on key strategic, cross-functional sustainability-related projects and initiatives. They are also responsible for sustainability reporting, including coordinating with external ESG rating agencies. The Head of Corporate Sustainability participates in Sustainability Committee meetings.

# Sustainability in GF divisions

To meet the goals of the Sustainability Framework 2025, all of GF's divisions and departments are responsible for continuously integrating sustainability into their activities, products and solutions. The divisional sustainability units review their sustainability performance every quarter and present the results to their respective management teams.

The divisions review:

- the achievement of sustainability targets and the implementation status of agreed actions;
- the monitoring of the sustainability performance of GF's business partners; and
- the development and marketing of products and solutions that provide customers with sustainability benefits.

Every year, the divisions establish a list of actions needed to achieve the company's sustainability targets. Among their responsibilities, the divisional sustainability managers:

- ensure their locations define and submit initiatives to meet defined goals;
- aggregate overviews for their division to track progress; and
- coordinate with Corporate Sustainability on status, cross-divisional information sharing and dispute escalation, where needed.

GF provides incentives to achieve its corporate targets at various levels within the company. For example, it defines individual goals for Executive Committee members and for the corporate and divisional sustainability teams.

Board of Directors  
Nomination and Sustainability Committee

The Board of Directors is represented by Nomination and Sustainability Committee (NSC).

Corporate Sustainability Council

Executive Committee

The NSC strategically consults and oversees the GF sustainability program. In addition it aligns in close collaboration with the Executive Committee the compensation targets and releases the annual sustainability report.

The Corporate Sustainability Council assists the Executive Committee in strategic cross-divisional decisions and steers the rollout of Sustainability Framework 2025. It monitors and reports progress of GF's targets.

The Executive Committee drives the implementation and update of the Sustainability program, prepared in consultation with the Board of Directors.

Corporate and divisional Sustainability Teams

The Corporate and divisional Sustainability teams manages and coordinates the operative sustainability measures following GF's material topics. They connect local actions with strategic goals to ensure alignment across the company and external stakeholder requests.

# EU taxonomy for sustainable activities

## 1 Relevance of the EU taxonomy at GF

The European Commission has set climate targets for 2030 underpinned by an action plan, the European Green Deal, to reduce the European Union's net greenhouse gas (GHG) emissions to zero by 2050. A core element of the European Green Deal is the EU taxonomy, a classification system for defining "environmentally sustainable" economic activities. In accordance with Article 10 (3) of Regulation (EU) 2020/852, an activity is "sustainable" ("taxonomy-aligned") if it makes a substantial contribution to at least one of six environmental objectives according to the technical screening criteria defined by the EU taxonomy:

1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems

In addition, the activity may not significantly harm the achievement of other objectives and must comply with "Social Minimum Safeguards". Companies are then required to disclose the proportions of sales, capital and operating expenditures for their taxonomy-eligible (economic activities that are described and have technical screening criteria in the taxonomy) and taxonomy-aligned economic activities.

GF supports the EU Taxonomy Regulation as an important step in sustainably transforming the economy. In 2022, GF assessed its business activities against the developed taxonomy criteria and voluntarily disclosed information on its implementation of the EU Taxonomy Regulation and taxonomy-eligible activities, but without financial ratios as it does not yet fall under the taxonomy's regulatory scope. However, mandatory reporting will be required from GF in the future with the adoption of the Corporate Sustainability Reporting Directive (CSRD).

## 2 Internal approach and methodological background

To implement the EU taxonomy's requirements, GF set up a project group led by the heads of Investor Relations and Corporate Sustainability. The core team worked closely with the Sustainability and Controlling specialists from the three business divisions of GF Piping Systems, GF Casting Solutions and GF Machining Solutions. In addition, the functional departments were also involved in the process.

First, the project group conducted mapping sessions to assign GF's economic activities to the taxonomy's relevant activity descriptions to identify those covered by the EU Taxonomy Regulation, known as taxonomy-eligible activities. In addition to revenue-relevant activities, the project group also considered cross-cutting activities, to which only capital and operating expenditures are attributed. In a second step, the taxonomy-eligible activities were also selectively checked for taxonomy alignment. To follow the EU taxonomy's approach in future reporting periods, GF will enhance the taxonomy alignment checks for its activities and seek to disclose taxonomy KPIs.

There is a general uncertainty around the initial reporting requirements based on the EU Taxonomy Regulation. For GF, this is because the taxonomy covers only particular focus industries, which account for the largest share of GHG emissions. In addition, the taxonomy only focuses on original manufacturers rather than all supply chain contributors such as component manufacturers. As a result, only GF Casting Solutions has some degree of exposure to the EU taxonomy, whereas GF Piping Systems and GF Machining Solutions have minor overlapping potential within the scope of their activities. Furthermore, many of the taxonomy's regulations and notes have unclear or ambiguous formulations, leading to a level of interpretation.

### 3 Taxonomy-eligible activities

The following activities defined by the EU Taxonomy Regulation have been identified for the recognition and assignment of GF sales revenues, CAPEX and OPEX.

- **3.1. "Manufacture of renewable energy technologies"** includes solutions for solar photovoltaic (PV) panels, biogas and biofuel plants, heat pumps and geothermal energy plants from GF Piping Systems.
- **3.2. "Manufacture of equipment for the production and use of hydrogen" (3.2)** includes solutions by GF Piping Systems used in hydrogen storage tanks.
- **3.3. Manufacture of low-carbon technologies for transport** covers the manufacture, repair, maintenance, retrofitting, repurposing and upgrade of low-carbon transport vehicles, rolling stock and vessels. The activity includes GF Casting Solutions products for EVs and hybrid cars, such as e-axles, shock towers and cross-car beams. It also includes components for fuel cells produced by GF Piping Systems. However, the interpretation is subject to uncertainty as the inclusion of automotive parts under the activity 3.3 is still under discussion.
- **3.4. Manufacture of batteries** includes manufacturing rechargeable batteries, battery packs and accumulators for transport, stationary and off-grid energy storage, and other industrial applications. It also includes manufacturing-related components, such as battery active materials, battery cells, casings and electronic components. GF Casting Solutions produces many of these components for the automotive industry, such as battery housings. GF Piping Systems contributes products into the redox flow battery industry with projects in Japan and Europe.
- **3.6. Manufacture of other low-carbon technologies** is a collective activity for further solutions aimed at substantially reducing GHG emissions. GF Piping Systems contributes water supply and distribution solutions, enabling landfill gas capture and CO<sub>2</sub> storage. GF Machining Solutions contributed to the Blue Competence initiative of the Verband Deutscher Maschinen- und Anlagenbau (VDMA, or Machinery and Equipment Manufacturers Association), which promotes sustainability in mechanical and plant engineering.
- **3.9. Manufacture of iron and steel** includes the manufacturing of iron (including alloy melting) by GF Casting Solutions and iron fittings produced by GF Piping Systems. However, it is not yet clear if only the melting process or also the casting process is eligible. In GF's opinion, only the melting process can be considered eligible.

In addition to revenue-relevant activities, cross-cutting activities to which only capital and operating expenditures are attributed were also considered, such as solar PV projects.

GF aims to gradually expand its reporting and disclosure of taxonomy-eligible and taxonomy-aligned activities, including the proportions of sales, capital and operating expenditures. To date, only the first two environmental objectives have been assessed. In a next step, the technical screening criteria of the remaining four activities will be assessed as soon as the final criteria are released. However, a trend is already emerging. For example, GF Piping Systems' solutions, such as corrosion-resistant piping and leak detection, are enabling the industries mentioned in the draft of the technical screening criteria.

✚ GRI 2-9 | GRI 2-12 | GRI 2-13 | GRI 2-14 | GRI 3-3

# Product portfolio

GF is committed to becoming a global sustainability and innovation leader providing superior customer value.

Across its divisions, the company enables the safe and reliable transport of water and gas, empowers greener forms of mobility, and advances energy-efficient and clean manufacturing. As part of its sustainability approach, the company also supports its customers with value-adding services throughout the entire life cycle of each solution.

**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



In 2022, 63% of GF sales (60% in 2021) delivered a social or environmental benefit. In 2022, GF focused its innovations on improving energy efficiency and increasing its use of recycling components as part of its circular economy approach.

By 2025:



**Product portfolio**  
**70% of sales with social or environmental benefits**

The remaining 30% consists of products that have not recently been substantially upgraded by GF's divisions in terms of sustainability contributions. This covers the following:

- **GF Piping Systems:** applications in the non-renewable energy industry, as this does not contribute to the transformation
- **GF Casting Solutions:** non-automotive products for different industries, as traditionally weight reduction was the key lever for emission reduction during use phase
- **GF Machining Solutions:** machines that were not recently upgraded with energy efficiency features or improved ergonomics for the operator

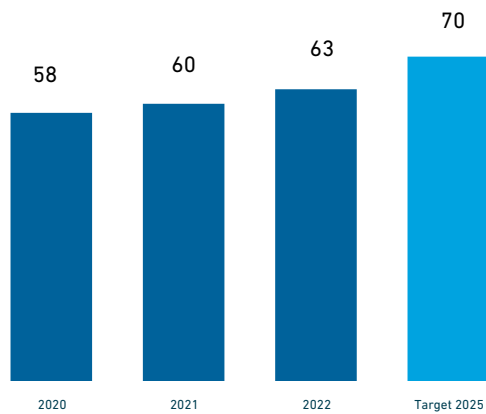


GF enables the safe and reliable transport of water and gas, empowers greener forms of mobility, and advances energy-efficient and clean manufacturing.

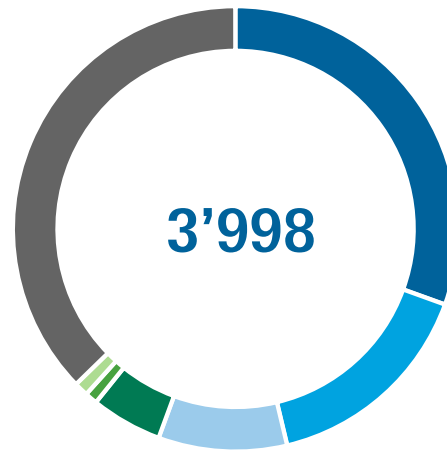
## The GF approach to sustainable products

To improve the sustainability impact of its products and services, the company follows a clear guideline: each new solution must demonstrate an improvement in at least two of the three sustainability dimensions (environmental, social and economic) compared with its previous generation. In cases where no predecessor exists, it must demonstrate these benefits in comparison to its main competing product or service.

**Sales with social or environmental benefits**  
% of total sales



**2022 sales with social or environmental benefits**  
in CHF million



- 31% Mitigating climate change
- 16% Conserving water
- 9% Promoting safety
- 5% Ensuring health
- 1% Delivering education
- 1% Sustainable buildings
- 37% No direct or substantial impacts

## Defining categories to measure impact

In each sustainability category, the company measures the benefits of each new solution using the following criteria and definitions:

- **Environmental benefits:** reduced CO<sub>2</sub>e emissions; reduced energy consumption and/or water consumption; materials that are biodegradable, recyclable and/or recycled may add longevity
- **Social benefits:** improved ease of operation, enabling users to maximize the solution's potential and efficiency; enhanced health, safety and security of users
- **Operational and economic benefits:** improved efficiency and/or productivity compared with previous (or competing) solutions; compatible with the circular economy

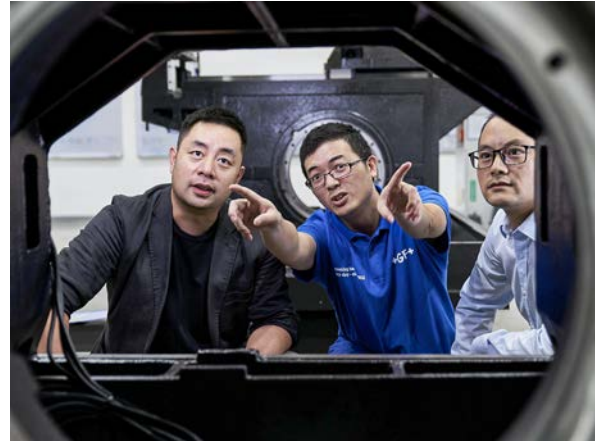


Each new solution must demonstrate an improvement in at least two of the three sustainability dimensions (environmental, social and economic) compared with its previous generation.

## GF's sustainability assessment methodology

To incorporate environmental and social benefits into the early stages of its product development, the company has adopted a unique sustainability assessment methodology. All three divisions – GF Piping Systems, GF Casting Solutions and GF Machining Solutions – adopted and developed it for their respective solutions and markets.

The methodology incorporates the "radar model", which provides a quantifiable means of improving the sustainability of new products and solutions. In this model, teams assign values to many important criteria, such as raw materials, weight, energy consumption or logistics methods. The radar then calculates the values into a total score used to compare the social or environmental benefits of the new solution with its previous version or with competitors' products in the same category.



To incorporate environmental and social benefits into the early stages of its product development, the company has adopted a unique sustainability assessment methodology.

Using the company's sustainability assessment methodology, project managers can use the radar model to simulate and compare various possibilities quickly and easily. For example, via a simple color-coded system, managers can adjust various criteria to find more sustainable solutions, such as changing a product's materials to reduce its weight and logistical carbon footprint.

Each division has adapted the methodology to suit its respective processes and goals. GF Piping Systems focuses on raw materials and recyclability, GF Casting Solutions aims to use more sustainable materials and reduce energy, while GF Machining Solutions seeks greater energy efficiency. The company's product and supply chain experts assess all final proposals to ensure they meet the company's strict quality, safety and performance standards.

+ GRI 203-1



# GF Piping Systems' product portfolio

GF Piping Systems develops solutions reflecting its belief that "everything is connected". Its cutting-edge products and systems combine leading design efficiencies with digital innovations and strict environmental standards.

## Strategy and solutions

As the leading flow solutions provider for the safe and sustainable transport of fluids, GF Piping Systems develops solutions reflecting its belief that "everything is connected". The division creates advanced flow solutions that ensure the safe and sustainable transport of water, gas and chemicals. Its cutting-edge products and systems combine leading design efficiencies with digital innovations and strict environmental standards.



GF has created and published LCAs and EPDs for the Butterfly Valve 565 and other key products.

To create "[connections for life](#)", the division works to:

1. ensure its customers benefit from a consistent flow of fluids without safety issues, leakages or any other environmental concerns;
2. support its customers' decarbonization goals by lowering their energy consumption and GHG emissions; and
3. reduce each solution's environmental impact by incorporating more sustainable materials and increasing system efficiencies during installation and operation.

The Sustainability Framework 2025 is the foundation of GF Piping Systems' sustainability performance. As part of the framework's targets, the division is committed to ensuring each innovative product delivers environmental and social benefits. To achieve this, the division uses sustainability assessment tools and life cycle assessment (LCA) along the entire innovation process, from idea to product launch.

This tool guides and educates the innovation teams, directing their ideas, R&D efforts and innovation processes towards the framework's targets. This tool also offers the innovation teams ideas on areas where sustainability can be improved and guides them in terms of implementation. It also gives guidance on how different aspects of the circular economy principle can be integrated into an innovation project.

Additionally, in 2022, the division accelerated the development and publication of life cycle assessments (LCAs) in partnership with external consultants. The aim is to understand and reduce the environmental impacts of new and existing products, especially key products such as the Butterfly Valve 565 and COOL-FIT.

Due to the growing need for LCAs and environmental product declarations (EPDs), GF Piping Systems continues to verify and document the impact of its solutions throughout all phases of its life cycle – from production use phases to end-of-life. In this context, GF has created and published LCAs and EPDs for the Butterfly Valve 565, the COOL-FIT 2.0/4.0 Systems, and MULTI-JOINT couplers. When a new LCA is available, the division's sales staff receive support via internal training sessions to ensure customers receive clear and accurate information about the environmental performance of a product or system within their current installed base or future installations.

GF Piping Systems' innovative products and solutions address a variety of challenges. These include:

- 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 energy-efficient solutions for the 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; and
- enabling the efficient use of water in industrial processes with reliable and innovative process automation solutions.

## Key innovations in 2022

GF Piping Systems is helping make the marine industry more environmentally friendly thanks to its lightweight, corrosion-free solutions. The weight reduction the solutions provide makes it possible to reduce fuel consumption and increase load capacity. With a design lifetime of at least 25 years, these solutions are persistently efficient. They are helping lower vessels' maintenance and overall lifetime costs – and reduce downtime as much as possible.

In 2022, the division developed and brought to market the world's first fire-retardant pipe jacket solution to use lightweight, corrosion-free plastic piping systems in essential applications on ships and offshore locations. The unique HEAT-FIT pipe jacket system meets the International Maritime Organization's (IMO) stringent fire resistance regulations, making thermoplastic piping systems resistant to temperatures around 1'000°C for at least 30 minutes under pressure. The HEAT-FIT jackets are made of durable and flexible materials to withstand the demanding conditions of the marine industry.



The unique HEAT-FIT pipe jacket system makes thermoplastic piping systems resistant to temperatures around 1'000°C for at least 30 minutes under pressure.

Another key innovation is the Ball Valve 543 Pro, which has many enhanced features compared with its predecessor, while retaining its original quality features. For example, a reinforced security break point in the stem interface prevents leaks from excessive wear or force, and two integrated sealing rings in the stem interface provide double safety. Additionally, the Ball Valve 543 Pro features a manual spring return unit ("dead man's lever"), a unique safety feature that enables customers to safely operate valves by automatically resetting the valve into closed position, which keeps the chemicals safely in the piping system and avoids unintended flow. This reliable, compact and cost-effective solution ensures end-to-end process safety and easily eliminates potentially far-reaching risks. The Ball Valve 543 Pro offers complete reliability and is expandable using optional accessories.



The Ball Valve 543 Pro ensures end-to-end process safety, keeping chemicals safely in the piping system and eliminating potentially far-reaching risks.

Today, generating hot water for a building often requires more energy than heating a well-insulated building. To address this problem, GF Piping Systems, together with scientists from the Ostfalia University of Applied Sciences, has developed an online calculator to easily and quickly determine the amount of energy needed to provide hot water in buildings. It can also simulate potential savings and financial payback periods, depending on the technical optimization measures selected by the user.



GF Piping Systems, together with the Ostfalia University of Applied Sciences, has developed an online calculator to easily and quickly determine the amount of energy needed to provide hot water in buildings.

The newly introduced IR PVC-U system is a groundbreaking solution for water treatment applications and the chemical processing sector. It combines two areas of expertise at GF Piping Systems: the heritage of the PVC-U piping system and its market-leading infrared welding machines. This eliminates cementing and improves workplace safety by avoiding hazardous fumes that would otherwise require ventilation. This change improves process reliability and security by using a machine-controlled process that limits the risk of human error and saves the parameters for each weld. With welding obstacles eliminated, it is possible to increase chemical resistance and use PVC-U with media like sulfuric acid at 98%.



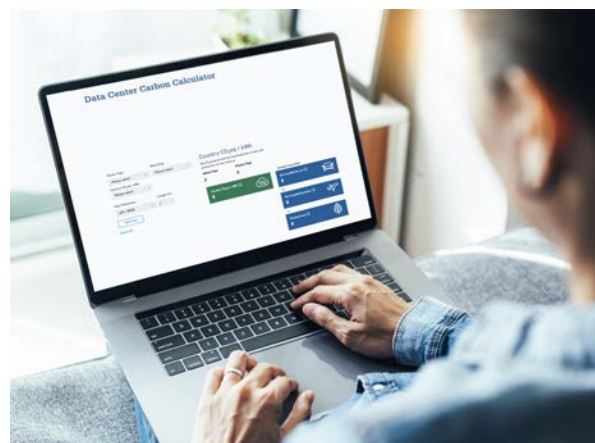
The newly introduced IR PVC-U system eliminates cementing and improves workplace safety by avoiding hazardous fumes.

With its COOL-FIT 2.0 Systems, GF Piping Systems provides several advantages to building owners and industrial leaders, changing how they plan, install and operate cooling applications across their enterprise. The newly introduced COOL-FIT 2.0 Push System is an addition to the existing system and bridges the gap with additional dimensions covering the final meter between the main pipeline and the HVAC unit, improving energy efficiency and ensuring maintenance-free operation for 25 years thanks to unique material properties and safe jointing technology. The heat pump market is one of the fastest-growing markets in both building technology and industry applications. COOL-FIT is already used in these applications; the next step is therefore to evaluate the perfect product fit. A pre-insulated solution will help to provide highest energy efficiency.



Thanks to its unique material properties and safe jointing technology, the COOL-FIT 2.0 Push System improves energy efficiency and ensures maintenance-free operation for 25 years.

To enable data center owners and operators to compare the carbon footprint of plastic pipes to metal pipes within their planned construction or existing enterprise, GF Piping Systems introduced a [carbon calculator](#). This calculator evaluates the energy required to produce the raw materials and the energy needed during the production of the pipes. The core data used to generate this comparison is openly published data available in environmental databases. The results are calculated in kilograms of CO<sub>2</sub>e per meter of pipe. The low weight per meter of plastic pipe compared to metal results in a far lower carbon footprint for plastic pipes compared to metal pipes.



GF Piping Systems introduced a carbon calculator that enables data center owners and operators to compare the carbon footprint of plastic pipes to metal pipes within their planned construction or existing enterprise.

# GF Casting Solutions' product portfolio

GF Casting Solutions' lightweight solutions help its customers reduce CO<sub>2</sub>e emissions and develop alternative drive systems.



## Strategy and solutions

As a future-oriented company and as a driving force for innovation in the casting and additive-manufacturing world, GF Casting Solutions aims to take the lead in shaping the development of sustainable mobility. The division's lightweight solutions help its customers reduce CO<sub>2</sub>e emissions and develop alternative drive systems. In close cooperation with its customers and partners, the division guarantees that it provides targeted solutions for the challenges faced in the market – from the initial concept and its precise realization to its validation.

The Sustainability Framework 2025, which is an integral part of the Strategy 2025, serves as GF Casting Solutions' guiding star. In its own Strategy 2025, the division is committed to growing within the e-mobility and renewable energy sectors, with a strong strategic focus on e-drive components and structural parts.

The sustainability framework aligns the division's innovation process, as well as its material, product and process development, with environmental criteria. Ultimately, the division aims to adopt a holistic approach to sustainability by developing sustainable products in a socially and environmentally conscious way along the entire value chain.

In this regard, GF Casting Solutions continuously strengthens its product development and sales organization to foster even earlier customer engagement in developing innovative products that deliver environmental benefits. To receive approval, each innovation must undergo a sustainability assessment at an early project stage and provide clear added value from a sustainability point of view.

At a production level, the division also supports process innovations to ensure best-in-class performance at its facilities and foundries. For example, using artificial intelligence reduces raw material losses and scrap rates during the ramp-up of new products. To take another example, using additive manufactured prototypes makes it possible for the division to obtain, test and improve geometries in early design stages before starting actual series production.



In close cooperation with its customers and partners, GF Casting Solutions guarantees that it provides targeted solutions for the challenges faced in the market.

GF Casting Solutions empowers sustainable mobility by developing advanced lightweight products combined with cutting-edge production processes. Thanks to the excellent lightweight design of its die-cast magnesium cross car beam, the division won first prize in the "Magnesium" category at the 2022 European Die Casting Award ceremony.

These innovations provide distinct advantages to customers, particularly those in the automotive and aerospace sectors, where developing alternative drive systems and lightweight components is critical to reducing GHG emissions. Using fewer and lighter components lowers a vehicle's weight, which is one of the most effective ways to reduce fuel consumption or extend battery range, resulting in lower emissions during the vehicle's lifetime.

The division also enables sustainable energy generation by designing and manufacturing state-of-the-art power plant components, including 3D-printed metal equipment – allowing for nearly unlimited design options. In addition, it helps reduce GHG emissions by producing advanced combustion chambers enabling the use of renewable energy sources (eg, hydrogen) in gas power plants.

With circularity as a core focus, each GF Casting Solutions component is made from aluminum, magnesium, iron or superalloys – all of which can be recycled nearly indefinitely. All alloy and production details are stored in a unique QR code laser-marked onto every product.



The GF Casting Solutions' lightweight die-cast magnesium cross car beam met key award criteria, such as innovation, quality, economic viability, resource-efficient construction and complexity.



A unique QR code laser-marked on GF Casting Solutions components enables them to be recycled.



## Key innovations in 2022

GF Casting Solutions has now entered a strategic partnership with the open innovation platform STARTUP AUTOBAHN to drive innovation through rewarding collaborations with start-ups and corporate partners. Powered by Plug and Play Germany, the international platform provides an interface to foster partnerships between emerging tech companies and industry-leading corporations.

Through this partnership and strong relations to world-class universities, the division aims to accelerate its proof of concept development across a range of new products, processes and services. The division uses a multilayered central innovation process to identify promising innovations and start-ups. Collaborations may range in scope from developing joint proofs of concept (POCs) to long-lasting collaborations, with the ultimate goal of commercialization-ready implementation.

During 2022, GF Casting Solutions initiated a pilot with a start-up specializing in developing automated carbon-management solutions for industrial companies. The pilot aimed to measure product carbon footprints using a scalable, highly automated, certified method. Both partners have gained important learnings in this project – notably, on managing a product's carbon footprint – and built up their capacity for digitized sustainability processes.

# GF Machining Solutions' product portfolio

GF Machining Solutions provides state-of-the-art machining solutions to a broad range of industrial partners, many of which create products that enrich our everyday lives.

## Strategy and solutions

GF Machining Solutions strives to be at the forefront of energy-efficient and sustainable manufacturing. As part of its goal to set the standard for intelligent machining solutions and become a trusted partner for the global precision machining industry, it provides state-of-the-art machining solutions to a broad range of industrial partners, many of which create products that enrich our everyday lives.



GF Machining Solutions' laser texturing technology offers a cleaner and faster alternative to chemical etching.

The division supports each machine throughout its entire life cycle, driving a new era of manufacturing that is more intelligent, connected and environmentally friendly. The division's laser texturing technology offers a cleaner and faster alternative to chemical etching. Benefits include eliminating the use of hazardous substances, reduced scrap thanks to a fully digital and repeatable process, and lower energy consumption.

The Sustainability Framework 2025 is the roadmap for the division's sustainability journey. To minimize its environmental impact, the division has two primary goals:

- **to maximize resource efficiency throughout each machine's life cycle.** The division works closely with its customers from the pre-sales concept phase to the end of the equipment's life cycle, when the machine can be refurbished. Remote access solutions offer faster response times and a suite of remote maintenance services.



Benefits include eliminating the use of hazardous substances, reduced scrap thanks to a fully digital and repeatable process, and lower energy consumption.

■ **to reduce each machine's energy consumption.** In addition to delivering maximum performance, GF Machining Solutions' innovations also help its customers reduce their energy consumption. For example, many of the machine models feature energy management systems (such as the Econowatt function) that initiate standby mode during idle periods while keeping auxiliary functions activated to maintain precision. Thanks to features such as improved control efficiency, higher energy efficiency and intelligent temperature control, the MILL X U series consumes 7% less energy than its predecessor.

The division is working to significantly reduce each machine's lifetime carbon footprint via several steps. Firstly, the divisional R&D team has introduced energy reduction programs to drive hardware and software improvements that it implements and monitors annually. Starting with a 2020 baseline, GF Machining Solutions is targeting a reduction of 20% in energy consumption per machine for its laser machines, 20% for electrical discharge machining (EDM) and 35% for milling by 2025. As part of these multi-year programs, the R&D team presents its energy-reduction targets, including how and when they will achieve them, to management.



Many of the division's machine models feature energy management systems, such as the Econowatt function.

Secondly, to integrate the review process across broader management levels, GF Machining Solutions has adopted the sustainability radar – shared across all divisions – to perform sustainability assessments during its new product development. Using this tool, it is possible to measure and proactively manage the carbon footprint. The division will review implementation when key milestones are reached during the development process.

Finally, the division is working on improvements with its suppliers to ensure its purchased components have a smaller environmental footprint than previous generations.

## Key innovations in 2022

In 2022, GF Machining Solutions continued its circularity drive, building on its 2021 spool redesign to make them recyclable by focusing on the EDM wire itself. In selected locations, the division has implemented recycling partnerships that are yielding their first results, recycling used EDM wires into new metal parts, such as faucets.

To reduce material consumption in wire EDM, the division has developed software algorithms. This process removes material from metal workpieces using electrical current supplied via a thin tight wire. Using the Intelligent Spark Protection System, customers now have greater control over the wear of the wires. The algorithm detects strain on the wire and adjusts its running speed accordingly. In doing so, the software ensures that the machine is using the minimum amount of wire that the cut requires. This can result either in less wire consumption (and waste) or faster cutting, which could result in less energy consumption.



[https://www.youtube.com/embed/A0i1L5Cb\\_a8](https://www.youtube.com/embed/A0i1L5Cb_a8)

# Climate and energy

As a leading company in the machining and manufacturing sectors, GF works across divisions to make meaningful reductions in its scope 1, 2 and 3 GHG emissions.

GF is committed to reducing energy consumption and greenhouse gas (GHG) emissions, critical steps in the ongoing efforts to slow down climate change. As a leading company in the machining and manufacturing sectors, GF sets an example, working across divisions to make meaningful reductions in its scope 1, 2 and 3 GHG emissions.



## Science Based Targets initiative (SBTi)

In September 2022, GF reached an important milestone in its environmental journey when the [SBTi](#) validated the company's science-based targets (SBTs) to reduce GHG emissions along its value chain. These targets demonstrate the company's commitment to long-term climate action and its willingness to address the challenge that climate change represents for the world.



As part of its global commitment to invest in photovoltaic (PV) installations, GF installed several additional systems during 2022.

The company's goals are to reduce absolute scope 1 and 2 GHG emissions by 30% by 2026. By 2030, it will also reduce its scope 3 GHG emissions from purchased goods and services and the use of sold products by 34.6% per tonne of processed material and use of sold products, using 2019 as a baseline.

To meet these ambitious goals, GF is accelerating its key measures to reduce GHG emissions across the three divisions, which have put in place roadmaps to support the company's targets and their customers' sustainability journeys.



### SBT CO<sub>2e</sub> emissions

Reduce **absolute scope 1 and 2 CO<sub>2e</sub> emissions by 30%** by 2026

Reduce **scope 3 CO<sub>2e</sub> emissions by 34.6% per tonne of processed material and use of sold products** by 2030

The SBTi is an internationally recognized framework for climate change goals that provide a clearly defined pathway for companies to reduce GHG emissions, aligned with the research community's latest understanding of climate change. Targets are considered science based if they support the Paris Agreement's goals to limit global warming to well below 2°C above pre-industrial levels and make efforts to limit warming to 1.5°C.



SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

## Energy usage and GHG emissions

GF's scope 1 and 2 GHG emissions account for about 13% of the total GHG impact of the company. The remainder comes from scope 3 emissions in the company's value chain. The recently approved science-based targets (SBTs) consider all three scopes of emissions.

Almost 90% of the company's total GHG emissions occur in the upstream and downstream sections of its value chain; they are classified as scope 3 emissions. In 2021, 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 were identified as material in the 2019 emission inventory as they contribute to 90% of GF's scope 3 emissions.<sup>1</sup> Moving forward, the company will increase its focus on reducing emissions attributable to purchased goods and services (category 1) and the use of sold products (category 11).<sup>1</sup>

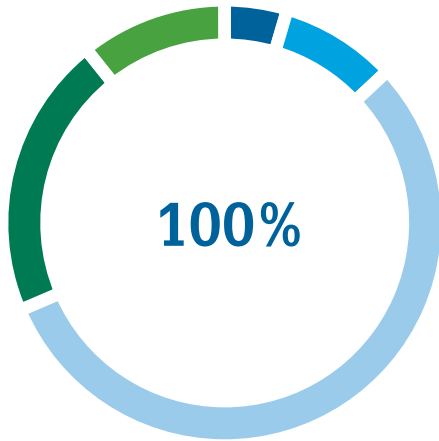
## Progress in 2022

GF is on track to meet its scope 1 and 2 emission reduction targets for 2022. Compared with 2021, total scope 1 and 2 emissions decreased in the reporting year by 14% and by 29% against the 2019 baseline. According to the 2022 forecast, GF increased its scope 1 emissions by 2% and reduced its scope 2 emissions by 38% compared with 2019 baseline data. This progress was due to several factors including the reduced energy consumption in China, a divestment from a joint venture (GF Linamar) in the US, energy efficiency measures and an increase in renewable energy consumption.

In 2022, renewables accounted for 31% of total energy consumption (up from 24% in 2021). The vast majority (95%) come from purchasing approximately 992'000 GJ of renewable electricity, primarily hydro and wind power. The remaining amount was self-generated hydro and solar power, and purchased renewable district heat.<sup>2</sup> Total fuel consumption in 2022 decreased by 7% compared with 2021, mainly due to the divestment of the GF Casting Solutions site.

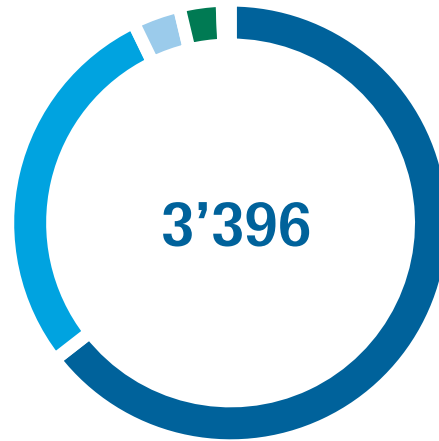


**CO<sub>2</sub>e emissions per scope  
in % of total emissions**



- 5% Scope 1 emissions (stationary fuels)
- 8% Scope 2 market-based emissions (electricity + district heating)
- 55% Scope 3 emissions (category 1)
- 21% Scope 3 emissions (category 11)
- 11% Scope 3 emissions (remaining categories)

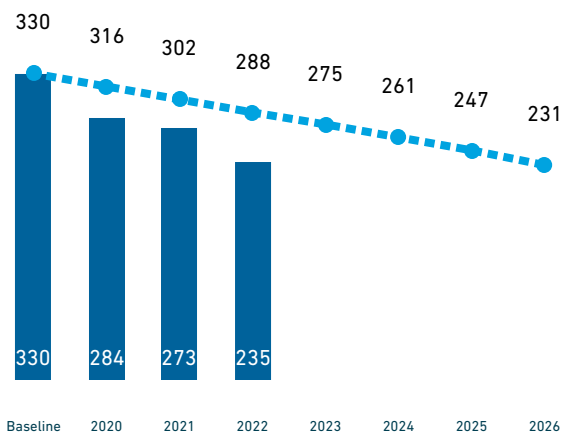
**Energy sources  
in 1'000 GJ**



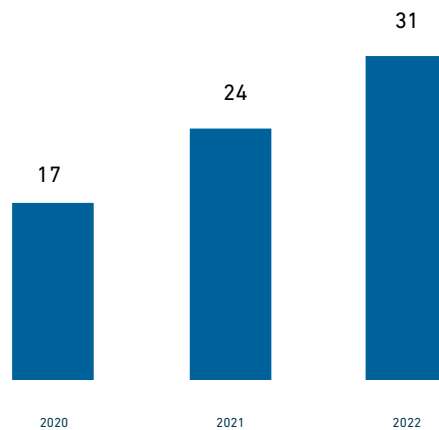
- 65% Electricity
- 28% Natural gas, biogas, fuel oil
- 3% Coke
- 3% Fuel use (for internal transportation)
- 1% Other energy sources

An analysis shows that scope 3 emissions account for close to 90% of GF's CO<sub>2</sub>e emissions, while scope 1 and 2 emissions make up the remaining 10%.

**CO<sub>2</sub>e emissions (scope 1 and 2)  
in 1'000 tonnes**



**Renewable energy (incl. certified green electricity)  
in %**



# Actions for managing energy and mitigating climate impact

GF's SBT action plan includes purchasing renewable electricity in different countries, investing in energy efficiency measures and self-generating renewable energy where possible. These actions help reduce the company's current GHG emissions as well as those projected to arise from the growth of the business.

## Renewable energy

Following the scope 2 roadmap and given that 65% of GF's total consumed energy is electricity, increasing the amount of renewable energy is key to achieving its GHG goals. In 2022, 20 production sites purchased certified renewable electricity, covering 46% of the company's total purchased electricity. Going one step further in this area, GF Casting Solutions has committed to using 100% renewable electricity by 2025. As part of this goal, in 2022, around 46% of the division's production sites purchased renewable electricity.

For the first time this past year, renewable electricity was purchased in Germany, Indonesia and the US – in addition to Austria, China, Switzerland and Turkey, where renewable electricity had been purchased.

In 2021, GF made a global commitment to invest in photovoltaic (PV) installations and installed several additional systems during 2022. To aid in this effort, GF's project team created a manual to support sites in conducting their first economic assessments to help determine whether onsite renewables are technically possible and make economic sense for a particular location.

In 2022, three of GF Piping Systems' facilities completed solar PV installations: in Ratnagiri (India), Albershausen (Germany) and Traisen (Austria). At the Ratnagiri site, for example, solar energy now covers one-third of its electricity needs, reducing its associated emissions by around 30%. In addition to installing solar panels, the Traisen site has significantly increased – from 1'900 MWh to 5'700 MWh annually – its use of hydroelectric power, generated at a river near the factory.

GF Casting Solutions installed 2.0 MW of roof-mounted PV capacity, highlighted by a 1.4 MW system on the iron foundry in Kunshan (China) that will prevent 1'200 t of CO<sub>2</sub>e emissions each year. The division also completed a 0.6 MW PV installation in Shenyang (China) that will avoid 700 t of CO<sub>2</sub>e emissions annually. In addition, construction work is ongoing for a 1.0 MW installation in Suzhou (China).

In 2022, 50% of GF Casting Solutions' total electricity demand came from renewable generation, using sources aligned with SBTi requirements. Overall, 31% of the division's total energy demand was supplied by renewable sources, and it is planning more on-site PV and hydropower projects for its European plants in 2023.



GF Casting Solutions installed 2.0 MW of roof-mounted PV capacity, such as this 1.4 MW system on the iron foundry in Kunshan (China).

In Switzerland, GF Machining Solutions completed a 0.122 MW solar system at its facility in Langnau and a 1.5 MW system at its facility in Biel/Bienne, the latter of which should supply around 25% of the site's annual electricity demand. Its site in Schorndorf (Germany) has also installed a 0.44 MW solar PV system, which it expects to become operational in the first quarter of 2023.

Several GF Machining Solutions sites are also exploring large-scale solar PV installations, including a location in the Czech Republic.

The investment in renewables is paying off. During 2022, GF Machining Solutions' Swiss sites in Langnau and Biel/Bienne joined the System 3R International facility in Vällingby (Sweden) as carbon-neutral sites.

In 2022, Vällingby production site reduced its scope 1 and 2 emissions significantly and the remaining 1 t (<0.01% of GF's scope 1 emissions) of residual emissions (from company cars) was offset using a certified Swiss-based forestry project. The Langnau and Biel/Bienne facilities reduced their scope 1 and 2 CO<sub>2</sub>e emissions by at least 90% compared with 2019 adjusted baseline data by purchasing renewable electricity. Biel/Bienne's switch from natural gas to biogas heating also contributed to this outcome.

## Energy efficiency

The most important step a company can take to reduce its GHG impact is to increase energy efficiency wherever possible. GF's leadership has made it their priority and supports efforts across the divisions to identify opportunities for energy efficiency.

For example, the Sustainability team at GF Piping Systems collaborated with the Global Manufacturing team to organize several best practice exchanges on energy efficiency across different sites. The exchange allowed sites to share their best practices and identify local actions to increase energy efficiency.

Furthermore, GF Piping Systems launched a pilot program at three sites in Turkey that, with the help of a leakage detection device, regularly checks for leaks in air pressure systems, which are a common source of energy inefficiency and increased operating costs for manufacturing companies. Currently, the average observed leak rate in the plastic processing industry is around 40%.<sup>3</sup>

In the pilot project at GF Hakan's plants in Çerkezköy and Şanlıurfa (both in Turkey):

- 354 leaks were identified
- 45% of identified leaks were eliminated
- More than CHF 60'000 were saved, with potentially higher ongoing savings due to rising energy costs

The success of these pilot programs led GF Piping Systems to implement this initiative across Europe and develop plans to launch the program in the Americas.

The division has also launched several energy efficiency initiatives across all sites, such as replacing injection-molding machines and installing LED lighting and free cooling chiller units. GF Hakan in Turkey is working to become ISO 50001 certified by pursuing several measures, including retrofitting its existing machines with insulation and recovering their waste heat for other purposes.

In 2022, various GF Piping Systems facilities in the US invested in plastic processing machines and replaced several old injection molding machines with more efficient models. By using servo-hydraulic drives and variable displacement pumps, each new machine is expected to reduce its associated energy consumption by up to 50% compared to conventional machines.

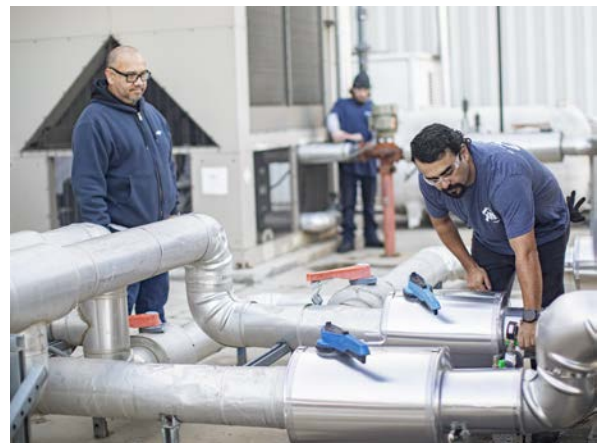


GF Piping Systems launched several energy efficiency initiatives across all sites, such as replacing injection-molding machines.

Two US locations of GF Harvel – Bakersfield, CA, and Easton, PA – replaced four old chillers with new, more efficient air-cooled models to supply process water. These replacement chillers increase line performance, reduce production scrap and improve energy efficiency through new drive and fan technology.

The Bakersfield and Easton sites also deployed Project Shine, where teams inspect each production line to assess and repair any safety, mechanical or cosmetic issues. Bakersfield has completed three of its nine extrusion lines and Easton has completed six of its 22 extrusion lines. GF expects full completion of the project during 2023.

GF Casting Solutions continued its energy efficiency program at all production sites by upgrading equipment such as compressors, frequency conversion motors and improving general infrastructure. In addition, every month, the division's environment, health and safety (EHS) managers and energy managers share information about the status of their projects to help strengthen its global network.



GF Harvel replaced four old chillers with new, more efficient air-cooled models to supply process water, such as here in Bakersfield (CA).

For example, the optimized heat recovery process at GF Casting Solutions in Novazzano (Switzerland) now fuels all internal hot water systems with process heat, eliminating the need for oil heating. At the Herzogenburg (Austria) site, it implemented new software that allows the energy-optimized ramp-up and shut-down of ovens on days without active production. Compared with 2021, the site reduced its electricity consumption by 10%.

## Building for the future

In accordance with GF's Environmental Standards, all newly constructed or renovated buildings include planning for energy efficiency measures from the outset of a project.

For example, a new GF Piping Systems plant in Yangzhou (China) has been built to maximize energy efficiency and minimize its environmental impact, with energy-saving features including:

- heat recovery from compressors to heat shower water
- geothermal energy to heat and cool offices
- LED lighting installations
- roof tower cooling

The site also uses GF's COOL-FIT technology for the energy-efficient design and operation of its cooling systems.

GF Casting Solutions also completed a new plant in Shenyang, its second high-pressure die-casting (HPDC) plant in China. The 80'000 m<sup>2</sup> plant features die casting machines with closing forces of up to 4'400 t each. The plant uses the latest environmental and climate-friendly technologies, such as light chimneys (a system that uses a mirror tube to direct and diffuse natural daylight into building interiors), on-site solar panels and e-mobility charging stations.

Both the Yangzhou and Shenyang sites are on track to receive LEED Silver certification and several ISO certifications<sup>4</sup> by the end of 2023.

GF Signet is moving its operations into a new upgraded facility in Irwindale, CA (US) that is expected to receive LEED Silver certification. This facility has a target to achieve a 50% reduction in grid electricity use, including >18% reduction in consumption through energy efficiency measures and a >50% reduction by generating on-site renewable energy. The site will also have sub-metering of its water and electricity systems, part of its sustainability strategy to support data-driven reductions and greater consumption transparency.



The Shenyang plant features light chimneys and on-site solar panels.

## E-mobility

Part of the comprehensive strategy to reduce GHG emissions across the company includes electrifying the logistics and transport solutions utilized in GF's operations. GF Casting Solutions is reducing its intercompany transport emissions through two new initiatives. In 2022, the first e-truck for its Austrian plants in Altenmarkt and Herzogenburg was ordered. It will make its Austrian intercompany and external warehouse logistics CO<sub>2</sub>e neutral and save up to 75 t of CO<sub>2</sub>e emissions annually.

Additionally, at its iron foundry in Leipzig (Germany), GF Casting Solutions has decided to upgrade three of its heavy-load forklifts (up to 5 t each) with electric versions. The division also continued fulfilling the updated car leasing requirements in 2022 to ensure that each replacement model is a 100% battery electric vehicle (BEV), with three BEVs currently in use and 21 additional vehicles on order.



GF Casting Solutions continues to expand its fleet of cars with battery electric vehicles, such as here in Altenmarkt (Austria).



## Efforts to reduce scope 3 emissions

At the end of 2021, GF finalized its first scope 3 assessment, which identified actions to address and reduce supply chain emissions. Following on from this, in 2022, the divisions focused on defining project teams, creating business cases and working through the first stages of their CO<sub>2</sub>e reduction roadmaps. GF is already exploring several opportunities to reduce emissions in its value chain, including material substitution, supplier engagement and more efficient logistics services.

### Bio-based materials

GF Piping Systems is creating scope 3 roadmaps with its plastic resin suppliers to commercialize more bio-based materials and reduce the CO<sub>2</sub>e intensity of its piping solutions. The division introduced bio-based polyvinyl chloride (PVC) in its industrial PVC portfolio in Europe in late 2021. Between January and October 2022, the division processed more than 1'000 t of bio-attributed PVC in its European operations. This achievement made it one of the first pressurized industrial piping companies to process bio-based PVC commercially. By processing bio-based materials, the division is reducing its scope 3 emissions and offers customers solutions with a lower carbon footprint.

In addition, GF Piping Systems is approaching suppliers to collaborate on other CO<sub>2</sub>e-reducing initiatives. Using a supplier assessment tool, it is seeking to foster collaborations on more sustainable materials and renewable energy projects.



GF Piping Systems is one of the first pressurized industrial piping companies to process bio-based PVC commercially.

### Supplier engagement

To reduce its scope 3 emissions, GF Casting engaged with key suppliers, particularly those supplying raw materials such as aluminum and magnesium, to explore opportunities to source materials with lower GHG footprints. For example, the scaling of low-carbon technologies is crucial to achieving long-term emission reductions.

In 2022, the division also joined several industry networks to improve material specifications and recycling rates, and increase the use of secondary (recycled) materials. In addition, it has integrated robust scope 3 reporting in its procurement system, providing greater visibility and tracking of emissions along its value chain.

During the year, GF Casting also held capacity-building workshops with key suppliers to explain its emission-reduction efforts, share its expectations and encourage key stakeholders to reduce their emissions. In this effort, the division reached suppliers representing close to 50% of its total external spend.

## Efficient logistics

GF Machining Solution' logistics networks have a relatively small environmental footprint, however, the division continually seeks different ways to minimize its impact. This includes analyzing its transport systems to achieve greater optimization, reducing the amount of shipping required and adopting greener forms of transport, such as using sea freight instead of air freight.

During 2022, the division also continued with its "InOutIn" sustainable delivery system, which helps dramatically reduce the amount of packaging and transport needed to deliver each machine. This system features custom-equipped Euro 6 trucks for greater fuel efficiency, an efficient packaging solution (going from 750 kg of wood in the previous packaging method to 15 kg of wood with this system) and efficient truck loading as more machines can be transported per truck due to the reduction of packaging. Furthermore, the efficient packaging solution allows for shorter installation times at the customer site due to the simplification of the packaging. In 2023, the division will continue refining its "InOutIn" system to make its deliveries even simpler and more sustainable.



<https://www.youtube.com/embed/uNxW9V9faqg>

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

<sup>1</sup> Detailed information on scope 3 calculation can be found in the [Reporting approach](#)

<sup>2</sup> Biogas was purchased in 2019 and again in 2022 and contributed <0.01% of the total renewable energy consumption.

<sup>3</sup> Robin Kent, **Energy Management in Plastics Processing**, edition 2013, Plastics information direct

<sup>4</sup> This includes: ISO 14001, ISO 45001 and ISO 50001 for GF Piping Systems' Yangzhou site. For GF Casting Solutions' site in Shenyang, it is expected to achieve ISO 14001 by the end of 2022 and ISO 45001 and ISO 50001 by early 2023.



# Water footprint

GF strives to be a sustainability leader offering solutions that ensure water can be delivered safely and with minimal environmental impact, while continually working to reduce its own footprint.

Clean water is the foundation of individual, social and environmental health. However, many areas of the world face ongoing challenges in maintaining access to clean water and leak-free water transport. GF strives to be a sustainability leader offering solutions that ensure water can be delivered safely and with minimal environmental impact, while continually working to reduce its own footprint.

While water use is particularly high in upstream processes such as aluminum and plastic manufacturing, the company's production facilities generally use only small amounts of water in closed-loop cooling systems. In addition, all its sites comply with applicable laws and regulations governing wastewater discharge. As a result, its facilities discharge most of their water as unpolluted water into natural water systems and send the rest to municipal sewage systems.



Clean water is the foundation of individual, social and environmental health.

## Progress in 2022

### Water intensity index

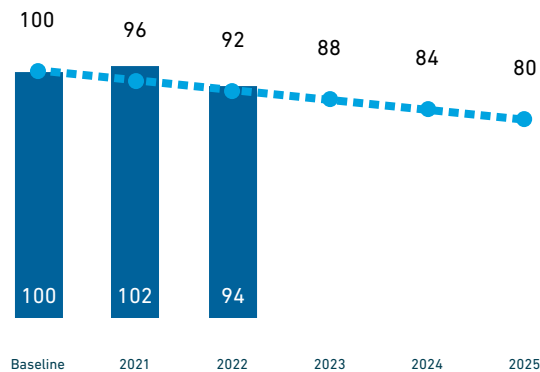
For the strategy cycle 2025, GF set a goal to reduce water intensity by 20%, compared with the 2018–2020 average used as its baseline, at sites operating in areas with high water stress. This target is binding for 14 facilities across all three divisions. Compared with the baseline (2018–2020 average), facilities in water-scarce locations decreased their absolute water consumption by 14%, in line with the target.

By 2025:



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

### Water intensity index (water consumption per production volume) in %<sup>1</sup>



In 2022, the company reduced its total water consumption by 2% compared with the full year 2021. This reduction was due to factors such as GF Casting Solutions' enacting strict water consumption plans at sites in Kunshan and Suzhou (both in China), and in Herzogenburg (Austria) and its divestment from the Mills River, NC (US) facility, combined with several water-saving initiatives at GF Piping Systems' sites in the US and Indonesia. Like in previous years, the majority (70%) of the company's total water supply came from groundwater and rainwater. The three divisions are also developing various water conservation measures to reduce their consumption further.

## Actions for better water management at sites in water-stressed areas

GF Piping Systems adopted various water-saving measures across its nine sites located in China, Indonesia, Turkey and the US. These measures range from installing compact chiller and water limiter systems to filtering and recycling water from hydrostatic pressure tests on pipes.

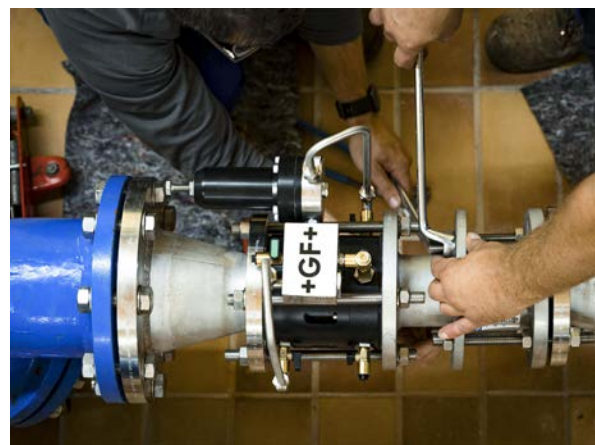
GF Casting Solutions focused on water conservation measures in its four plants in water-scarce areas, particularly in China, Romania and Germany. Its high-pressure die casting (HPDC) plant in Suzhou (China) renovated the water pipe infrastructure around its casting cells. In addition, though not a water-scarce area, its HDPC site in Herzogenburg reduced its overall water consumption by 33% in 2022 compared with 2021.

### Smart meters to prevent water leaks

GF Casting Solutions plants in Kunshan and Suzhou installed smart metering devices to maintain reliable consumption profiles and receive early warnings about leakages. The Suzhou plant installed these devices on three of its main water pipes, which are expected to reduce its total water consumption by up to 7% per year. By carefully monitoring and promptly fixing leakages, as well as rebuilding water pipes above ground to simplify maintenance and avoid rust, these sites lowered their combined water consumption by 12% in 2022 compared with 2021.

### Other upgrades and efficiency measures

Various sites across all three divisions have invested in improvements and efficiency upgrades to reduce their water consumption.



State-of-the-art technology such as NeoFlow protect water distribution networks from excess pressure, while reducing leakage rates and pipe bursts.

This was seen at GF Piping Systems, at the GF Central Plastics site in Dallas, TX (US), where they installed a more compact and efficient chiller system that decreased its water use by 7% in 2022. The division's GF Indonesia site in Jawa Barat continued with various water-saving projects it started in 2021. In particular, this site reduced its water pressure from 2 bar to 1.2 bar, installed water limiters of 30'000 l per day to meet increasingly stringent government regulations, scheduled periodic maintenance, and repaired and redesigned a separator tank.

In addition, the Jawa Barat site has begun reusing the water from hydrostatic pressure tests on its pipes, which is collected in a tank, filtered and recycled for the same purpose. Through these combined initiatives, the site has lowered its water consumption by 26% compared to its baseline (the average from 2018 to 2020).

GF Casting Solutions in Pitești (Romania) installed a new evaporator unit that can clean up to 1'000 l of water per day and make it reusable on-site. This initiative saves around 252'000 l of water per year, 1.5% of the site's annual consumption.



The Jawa Barat site of GF Piping Systems has begun reusing the water from hydrostatic pressure tests on its pipes, which is collected in a tank, filtered and recycled for the same purpose.

## Participating in UN World Water Day

At its sites in Çerkezköy and Şanlıurfa (both in Turkey), GF Hakan Plastics organized a water awareness day for UN World Water Day in 2022. Employees took part in various training sessions and presentations, learning about water scarcity and protecting natural water resources, particularly in their home country. They also submitted their own water-saving suggestions, to which a committee allocated points, with a prize going to the highest-scoring idea. Thus, beyond raising awareness about water scarcity, this day was valuable in creating a roadmap to reduce long-term water consumption.



+ GRI 3-3 | GRI 303-1 | GRI 303-2 | GRI 303-5

<sup>1</sup> GF's divisions define production volume according to the nature of their particular business. GF Piping Systems defines it as "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

The GF environmental strategy embraces the principles of a circular economy and all major steps of the product life cycle.

GF takes a holistic approach to managing the environmental impacts of its operations. Its environmental strategy embraces the principles of a circular economy and all major steps of the product life cycle. These include the selection of raw materials in the design phase, conserving natural resources during manufacturing, recovering scrap or waste materials, and responsibly disposing of or recycling products at the end of their life cycle.

GF actively works to preserve resources through various steps. Firstly, it continually seeks new and effective ways to reuse or recycle the materials it uses in its manufacturing processes. Secondly, it fosters partnerships with other industrial companies to reuse scraps, by-products and waste materials from its production processes, reducing the overall demand for energy and resources. Finally, although most of GF's waste is non-hazardous, it ensures there are reliable systems and processes in place to reduce the environmental impact of the waste it generates.



GF fosters partnerships with other industrial companies to reuse scraps, by-products and waste materials from its production processes, reducing the overall demand for energy and resources.

## Progress in 2022

GF recycles the majority (78%) of its waste. In addition, some divisions sold their waste material in 2022. GF Piping Systems sold over 600 t of used sand and GF Casting Solutions provided its construction industry partners with around 8'000 t of used core sand. This generates additional income and reaffirms the value of a circular economy approach.

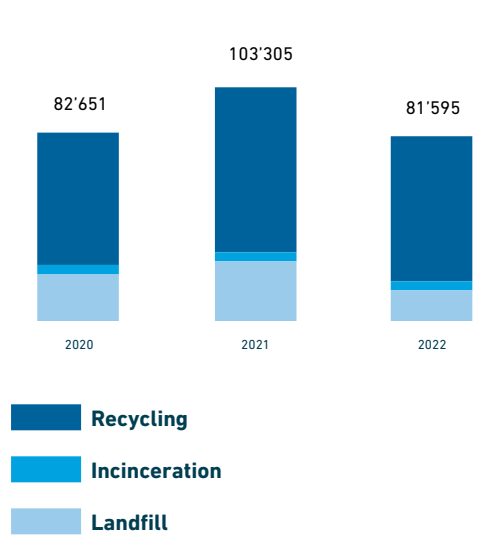
**By 2025:**



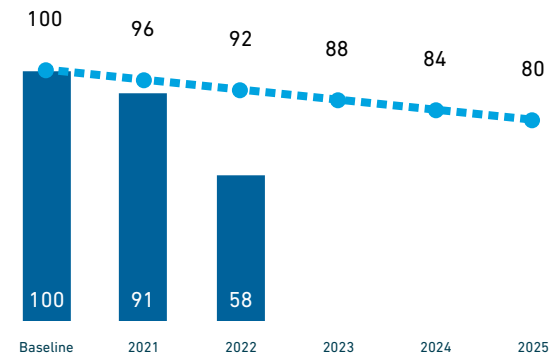
**Waste**

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

**Waste disposal  
(in tonnes)**



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



**Unrecycled waste intensity index**

In 2022, GF’s unrecycled waste intensity was 34 percentage points below its target value for the year. Therefore, the company is currently on track to meet its target at the end of 2025. This achievement was mainly due to sand recycling at the GF Casting Solutions site in Leipzig (Germany) and the GF Piping Systems site in Sissach (Switzerland).

In addition, recycling programs at GF Piping Systems’ facilities in Switzerland, Turkey and the US also contributed to the target. The division’s US recycling program includes the external regrind of all high-density polyethylene (HDPE), which can be used in production as reworked material.

# Actions for effective use of natural resources

All three GF divisions continued their efforts throughout the year to reduce, reuse and recycle their natural resources more effectively.

**Reducing wastewater**

In March 2022, the GF Casting Solutions site in Altenmarkt (Austria) upgraded its wastewater treatment systems by installing two new vacuum evaporators. As a result, the site now only disposes of a very small amount of concentrated wastewater sludge (5% of total volume) through a certified disposal company. The site forwards the rest of its wastewater directly to a local purification plant.

Overall, the vacuum evaporators have significantly upgraded the site’s ability to reuse natural resources and reduce its waste and CO<sub>2</sub>e emissions. Through this latest project, Altenmarkt’s recycling rate is now above 94%.



## Reducing waste

GF Piping Systems joined Operation Clean Sweep® (OCS) to prevent plastic litter from entering the environment, taking the division a step closer to its goal of "zero pellet loss" to protect the environment and waterways. OCS is an international initiative to prevent the loss of plastic granules (such as pellets, flakes and powders) along the entire plastics value chain. Working with this initiative, the division is incorporating a few small but important changes in its facilities management and operations to prevent plastic granules from being released into the environment. In a first phase, the division is rolling out the program in its European plastic processing plants and aims to gradually implement it worldwide, even in areas that have local alternatives.



**Prevent microplastics in the environment:  
see it, stop it, clean it and recycle it!**

To engage its employees in this area, GF Piping Systems apprentices at GF JRG in Sissach (Switzerland) spent an afternoon learning how to manage and reduce waste under the motto "No Time to WASTE". After a short introduction, the apprentices collected litter from around the site – mostly cigarette ends – and learned about how the company disposes of waste. The division's apprentices then visited a local bulk goods shop, where consumers can bring their own containers for unpackaged food and non-food items and reduce or eliminate the need for plastic packaging. Finally, back at their site, the apprentices created a poster and shared their thoughts and experiences with vocational trainers.



"No Time to WASTE": GF JRG apprentices learn how to manage and reduce waste at their Swiss site in Sissach.

## Re-using activated carbon

At GF Piping Systems, the GF JRG site in Sissach initiated its first process to reactivate (reuse) activated carbon, a material that filters pollutants out of the air in the foundry. While the site previously disposed of its used activated carbon after a designated period of time, the reactivation process allows it to reuse the material.

Using this new process, the site avoids sending around 9 t of waste to landfill each year. This measure contributed to reducing hazardous waste at this site by 20% in 2022 compared with 2021. The site's overall recycling rate is 86%.

## Recycling waste sand

Waste sand is produced during casting due to balancing the inflow of sand from cores, sand blasting and sieving, over-burning and contamination. In 2022, as part of a new concept, GF Piping Systems found a top-tier copper producing and recycling company that will buy the company's used sand and recycle it, preserving an increasingly rare natural resource. Overall, the plant is now recycling 87% of its total waste amount, continuing the adoption of circularity principles in its iron foundry business. The site already uses a high proportion of recycled material (over 80% of iron scrap). All of its raw waste material is either re-melted and reused on-site or provided to partners and included in new ingots.

## Reusing other materials

GF Machining Solutions has implemented a "No Material Waste" program, in which employees can upload, to the division's intranet, pictures of functioning but unused material. The project started after two apprentices in Biel/Bienne (Switzerland) noticed usable material lying around unused or being thrown away. They developed the idea of creating an online platform where people can upload their unused materials so that those who need them can access them.

To this end, the apprentices submitted a proposal to the division's intrapreneurship program "Kickbox". The aim of this program is to tap into the intrapreneurship of employees to come up with new ideas that may lead to technical innovations or new business models. The "No Material Waste" program has since moved from the validation to the pilot phase, with the aim of testing a working prototype in Biel/Bienne, before moving into the final implementation phase. At the end of 2022, computer screens topped the list of the most-exchanged products on the platform.

# Circular economy initiatives

For GF, a [circular economy](#) aims to keep materials and resources in the product cycle for as long as possible, by reusing, refurbishing and re-manufacturing them before recycling. Throughout the year, all three divisions have targeted new initiatives to source reusable materials and components while enhancing their waste management processes to enable reuse.

GF Piping Systems launched a new range of pipes made from reworked polyvinylidene difluoride (PVDF) material instead of virgin PVDF. With this new product line, high-value reworked production material is used to create new high-value products instead of being sold to a recycling partner. By using the material more efficiently, the division is reducing waste and applying the circular economy principle in more of its product lines.

The division also conducted its first workshops with external partners to identify opportunities to apply the "cradle-to-cradle" principle to its solutions. According to this principle, products are designed in such a way that they can be reused or recycled beyond their first life cycle, so that they do not end up in incineration or landfill. The division sees this principle as an effective way to create more circular economy-based solutions in the future.

The GF Piping Systems site in Shawnee, OK (US) has increased its use of reworked material (both external and production scrap) into products where the design allows. As a result, by the end of 2022, the site had increased its total recycling rate to 80%, up from 75% in 2021.

GF Casting Solutions' products are made from secondary aluminum or iron scrap, whenever customer specifications allow. Iron casting uses over 80% scrap, which is melted down into high-quality alloys directly in the division's foundries. Aluminum products that are not structural parts (required to withstand high forces during a vehicle's use phase) are cast in secondary alloys made of up to 80% recycled content.

After successfully implementing the sustainability radar into its R&D processes, GF Machining Solutions can today assess the sustainability performance of new machines during the R&D phase. Subsequently, the division can use that assessment to identify ways to improve the circularity characteristics of its machines during the planning phase, for example, by increasing the number of parts and spare parts that are recycled and recyclable.

The division has started recycling its electrical discharge machining (EDM) spools and wires at selected sites. The EDM spools are recycled into new spools (combined with a variable amount of virgin material), and it supplies used EDM wires to a partner company that produces faucets using the raw material. In 2022, the division extended its offer to 30 of its customers across Belgium, Germany and Italy to recycle their used wire. In addition, European customers now have the option to source EDM wires locally, which reduces transportation – and thus their carbon footprint by 15%.



GF Machining Solutions has started recycling its electrical discharge machining (EDM) spools and wires at selected sites.

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

# Safety and well-being

As a progressive and responsible employer, GF places the highest priority on the health, safety and well-being of its employees.

A safe and healthy working environment is the foundation of strong employee engagement, high productivity and exceptional customer value. As a progressive and responsible employer, GF places the highest priority on the health, safety and well-being of its employees. It endeavors to create a zero-risk workplace through regular cross-site safety audits, awareness campaigns and appropriate safety measures. Overall, GF continually instills a safety mindset in its employees and empowers them to take responsibility for health and safety, both for themselves and others.

**3** GOOD HEALTH AND WELL-BEING



**8** DECENT WORK AND ECONOMIC GROWTH



## Progress in 2022

In 2022, thanks to the concerted efforts of its employees, GF reported zero work-related fatalities for the seventh year in a row. During the reporting year, the overall accident rate – measured using the lost-time injury frequency rate (LTIFR) – decreased to 7.9 per 1 million working hours with a total of 265 accidents, compared with a LTIFR of 10.2 (301 accidents) in 2021<sup>6</sup> (which equals a 12% reduction in the number of accidents compared with 2021).

Data shows that 86% of those involved in accidents were GF employees, while 14% were leased employees. More than half (56%) of the total accidents were minor injuries to the upper extremities, primarily fingers, hands and arms. The most common causes of injuries were workers struck by objects (51%), followed by slipping, tripping or falling (25%). In terms of working locations, most accidents occurred in production plants (81%), followed by warehouses (5%).

**By 2025:**

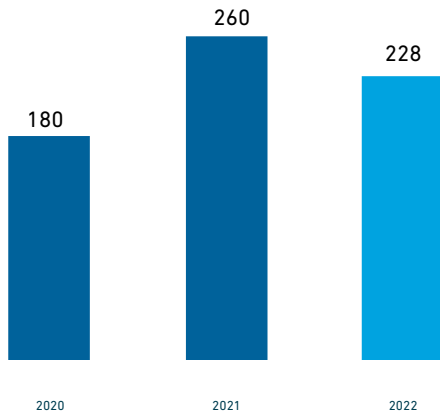


**Health and safety**  
Reduce **accident rate by 30%**

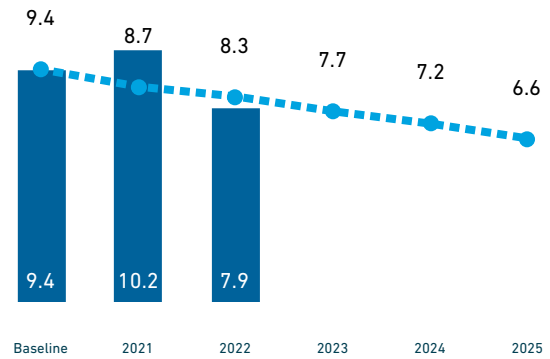


Employees use handrails on stairs to prevent themselves from slipping, tripping or falling.

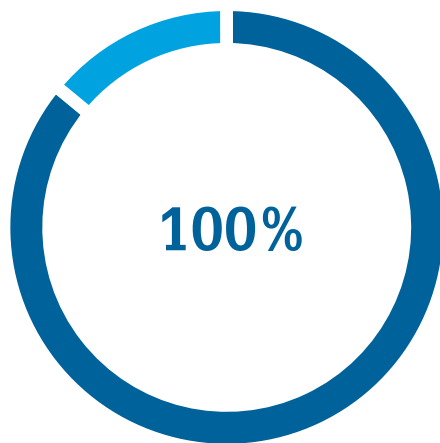
**Number of accidents among GF employees**



**Accident rate as lost time injury frequency rate (LTIFR)<sup>1</sup> per million hours worked**



**Share of accidents, GF employees and leased personnel, 2022 (in %)**



- 86% GF employees
- 14% Leased employees

As part of its Sustainability Framework 2025, GF aims to reduce its accident rate by at least 30% against the three-year average (2018–2020) of 9.4<sup>6</sup> as the baseline LTIFR. The three-year average used as a baseline takes into account temporary site closures due to COVID-19 health measures in the first half of 2020.

To raise safety performance, all three divisions have intensified their safety campaigns to increase awareness and strengthen GF's safety mindset. This includes building time and space into meetings so that employees can share and discuss unsafe conditions or near misses. Different communication tools – such as safety videos or events – continue to reinforce health and safety messages. Building upon its Culture Movement program, GF will continue to foster a strong safety culture at all sites, specifically as this pertains to its [value related to "Caring"](#). Through this value, GF underpins the importance of caring for colleagues and team members, giving constructive feedback on behavioral safety as well as acting as a role model.



Acting as a role model to foster a strong safety culture is linked to the GF value related to "Caring".

## Safety Standards

The GF Safety Standards contain binding health and safety instructions for the entire company. They apply to all GF and leased employees. The standards set out the applicable regulations and organizational, personal technical measures designed to make daily working practices as safe as possible. They also detail the safety requirements for a wide range of high-risk areas including, but not limited to, the maintenance of equipment, working at height, the use of forklifts/towing vehicles for transportation and storage, and the management of hazardous substances.



The GF Safety Standards set out the applicable regulations and organizational, personal and technical measures designed to make daily working practices as safe as possible.



## Improving safety through hazard and risk identification

On both a routine and non-routine basis, GF conducts risk assessments in accordance with corporate and local procedures. It seeks to identify any major risk areas and implement preventative action plans. In line with best practices in safety management and GF Safety Standards, these plans follow the STOP principle. Substitution and technical measures taking precedence over organizational and personnel ones is a method companies use to reduce exposure to hazards for their employees. GF documents these assessments and then summarizes the defined protective measures and safety rules as new operating instructions.

## Actions for creating a zero-risk workplace

To ensure full compliance with its safety standards, GF continued to conduct cross-site safety audits (CSSAs) at the divisional level between the operations of each location. Management teams in all divisions receive a summary of the findings and recommended follow-up actions.

GF conducted CSSAs at 45 facilities worldwide, representing 75% of its total production sites. In China, safety teams from GF Casting Solutions and GF Machining Solutions cooperated in conducting cross-divisional CSSAs at each other's sites. Due to travel restrictions, the Environment, Health and Safety (EHS) Manager at GF Machining Solutions audited its US site. In Europe, safety teams from GF Machining Solutions sites carried out CSSAs on each other.

## Communication and training

GF works to instill a safety mindset in its employees to ensure the safety of everyone in the workplace. Since 2015, the company has run a "Zero Risk"/"Be Aware – Be Safe" campaign at the divisional level to improve the safety awareness of its employees, contractors and visitors. In 2022, all three divisions continued to expand their campaigns.

GF Piping Systems continued to drive across all sites – both production facilities and in sales companies – the implementation of "Be Aware – Be Safe" campaign that it had launched in 2021, with materials (such as posters and videos) and safety events. The local safety manager of the business units tailored training sessions to the needs of the business and cascaded them to all employees. The positive effect of this can be seen in GF Indonesia, where 1'000 consecutive days with zero injury-related lost-time incidents were recorded, testifying to the effectiveness of the safety program over time.



"Gemba" walks take site managers to the shop floor to identify unsafe situations and improve safety behaviors.



GF Piping Systems continued its safety "gemba" walks (Japanese for "the actual place"), which it has implemented at all production sites. Based on lean management principles, these walks take site managers to the shop floor to identify unsafe situations and improve safety behaviors to prevent injuries and property loss.

In raising safety awareness, the division aims to go beyond creating a safe work environment by developing safety-conscious employees. That is why, in 2022, the division reinforced the core message that all employees have the authority to stop any unsafe work activity they see by using their "Stop Work Authority" card. Available in 13 different languages, the card is a new feature of the "Stop Work Authority" program launched in 2021.

In addition, to prevent incidents that could result in severe injury or fatality, GF Piping Systems communicated a list of life-saving rules to support its existing safety management systems, programs and policies. These rules cement the division's commitment to continuously improving its safety culture.

As well as launching a global best-practice exchange to encourage all sites to collaborate and share their best practices, the division also required each site to hold an annual safety event with its employees.

In the same division, at the GF Harvel facility in Little Rock, AR (US), an internal safety observation program promotes safety awareness in the workplace by recording unsafe conditions and behaviors. Through monthly staff participation, it encourages ownership of the company's safety culture by making all employees feel included and fostering positive conversations about safety.

GF Casting Solutions focused on raising awareness about identifying risk-reduction opportunities. As part of its division-wide health and safety training, it provided sites with engaging training sessions to enhance employees' risk awareness and offered solutions to help resolve any identified risks.

The division's "Zero Risk" campaign entered its third phase at the start of 2022 with a renewed focus on risk awareness and accident prevention. More specifically, this phase focused on educating employees about potential risks in their working areas and empowering them to address and report them to management and to local EHS teams.

## GFPS' Life-Saving Rules



The list of life-saving rules complements existing safety management systems, programs and policies.



Monthly staff participation encourages ownership of the company's safety culture by making all employees feel included and fostering positive conversations about safety.

The division also started publishing a monthly "Safety First" moment – a brief safety talk about a specific subject at the beginning of a meeting or shift – focusing on crucial health and safety messages. These moments provide employees with discussion points on key health and safety topics within the division, including risk awareness, near-miss reporting and seasonal risks.

GF Machining Solutions started a new safety campaign to raise awareness among staff and visitors, as well as to identify near-misses and unsafe conditions. The division launched the campaign with an educational video highlighting the importance of near-misses and hazardous conditions. The video also highlighted the need for all staff to report such situations to safety officers so they can take action. Finally, during the year, five or six scheduled exchanges between safety officers enabled them to share best practices and keep the momentum on driving the safety mindset within the division.

Moreover, the division requires all sites to report near misses. By providing valuable insights into risky situations, the reports enable the division to take a proactive approach to safety and accident prevention. Analysis of the collected data informs new safety measures as part of the division's overall goal to achieve zero accidents.

GF Machining Solutions also introduced safety moments at the start of daily meetings in production. Lasting no more than five minutes, this practice encourages employees to tell a personal story about safety and to raise any unsafe conditions they have seen. By serving as a powerful reminder that safety is the top priority, these safety moments play a key part in embedding a safety-conscious mindset in an ongoing culture change.



## Accident reporting and prevention of potential accidents

When an accident occurs, GF requires the relevant site to report it within three days – along with a root-cause analysis and the corrective measures implemented – via the company-wide accident reporting tool. This procedure enables the company to gauge the effectiveness of its safety measures and initiatives.

In addition, on a monthly or quarterly basis, all divisions prepare regular accident reports with safety recommendations for divisional management as well as safety officers and employees. Reflecting the high priority GF has put on health and safety, information on this topic is included in the monthly reports provided to the Board of Directors.

After a near-miss or accident, the hazard identification is reviewed and, if necessary, the risk assessment is updated. The head of the department, the safety manager and the managers are responsible for regularly monitoring the implementation of technical and practical safety measures and identifying improvements.

GF Casting Solutions launched its Near-Miss and Observation Reporting tool and made it available to all divisional locations in all relevant languages. The tool enables employees to anonymously report a near-miss or observation – either digitally or physically – to their local EHS teams and management. The Near Miss and Observation reporting tool encourages employees to provide input on solutions and other ways of addressing reported risks.

## Safety award

In August 2022, GF Central Plastics in Shawnee, OK (US) won the Pinnacle of Safety Award. The award recognizes an Oklahoma Safety Council member company for achieving the highest level of excellence in its industry in terms of its management commitment, safety culture as well as exceptional health and safety performance.



Cassandra Wiggins and Lewis Chambers from GF Central Plastics receive the Pinnacle of Safety Award with Betsey Kulakowski, Executive Director for the Oklahoma Safety Council

## Employee well-being

Beyond its focus on safety, GF also offers its employees opportunities to improve their health and well-being. These can include discounted rates at sports and fitness classes, workshops to manage their work/life balance and on-site yoga classes.

GF Hakan Plastik in Ankara (Turkey) launched the Ergoffice Desk Exercise Program. It aims to provide office employees, who often work in seated positions for longer periods, an opportunity to recharge and be more productive. Participants follow an Ergoffice exercise instructor online three days a week, for 15 minutes of exercises at their desks during their breaks.

Due to its success, GF Health – the competence center for health, encompassing all areas of life in Schaffhausen (Switzerland) – has offered the program as a pilot to office employees at its corporate headquarters, at GF Piping Systems and GF Casting Solutions. Like the program in Turkey, the exercises are offered three times a week for 15 minutes under the guidance of a physiotherapist. With these and other measures, GF Health aims to optimize the health and well-being of all employees at the four Swiss locations in the long term.



Beyond its focus on safety, GF also offers its employees opportunities to improve their health and well-being, such as the Ergoffice Desk Exercise Program offered by GF Health in Switzerland.

+ GRI 3-3 | 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

<sup>1</sup> In 2022, following GF's target calculation approach four GF companies were newly added to the sustainability targets 2025. The change of scope in reporting was only visible in the baseline of the accident rate target and therefore the target and the baseline was adjusted. Further details are available: [Reporting approach](#)

# Diversity and inclusion

As a globally active company, GF is committed to greater diversity and inclusion on many levels. The goal is to create a diverse and inclusive work environment where inspiration, cooperation and innovation can grow and employees are empowered to perform at their best.

GF supports a diverse and inclusive culture where people's unique identities, experiences and perspectives come together to create intelligent customer solutions and address societal and environmental challenges.



**Diversity** refers to accepting and celebrating the rich spectrum of personal and social differences that make each person unique. These include, but are not limited to, ethnic or national origin, gender, sexual orientation, age, physical and mental ability, as well as religious and political beliefs or associations.

**Inclusion** refers to fostering a work environment where all individuals are treated fairly and respectfully, have equal access to opportunities and resources, and feel empowered to contribute to their personal and organizational success.



Different identities, experiences and perspectives help create intelligent solutions to meet customer needs, and societal and environmental challenges.

## New policy on diversity, engagement and inclusion

In 2022, GF published its new [Diversity, Engagement and Inclusion Policy](#), consolidating various directives and practices. The policy aims to achieve the company's three primary goals:

1. reinforce its commitment as a fair and attractive employer that promotes diversity and inclusion (D&I);
2. support its strategy to become a sustainable leader fostering a diverse, engaging and safe working environment; and
3. reaffirm its corporate values relating to Caring, Learning and Performance

# Gender balance

## Progress in 2022

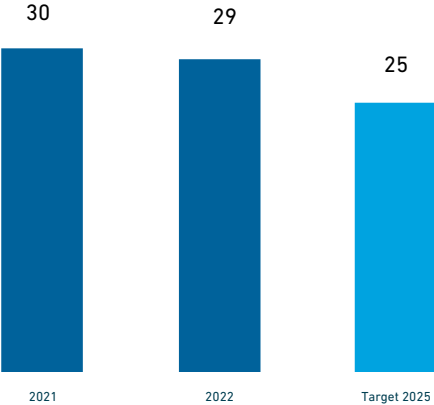
In 2022, 29% of newly appointed managers were women (compared with 30% in 2021). GF is exceeding its target of 25% newly appointed women managers by 2025. Also in 2022, 17.2% (165 full-time equivalents or FTEs) of managers were women – compared with 15.8% in 2021 or 114 FTEs in 2021. Overall, 20% of employees (2'941 FTEs) were women in 2022 (compared with 19.5% or 2'817 FTEs in 2021).

By 2025:



**Diversity and inclusion**  
**25% of newly appointed managers are women**

**Newly appointed women managers in %**





## Empowering women

GF's target for empowering women at work is in line with the United Nations [Sustainable Development Goal \(SDG\) 5](#) – "Empower all women and girls". In particular, the company focused on target 5.5: "Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life".

In line with these goals, an independent federal wage equality analysis confirmed that the company's wages across genders in Switzerland are fair and equitable. In the year 2022, GF further conducted the equal pay analyses in Switzerland with a certified external partner using the well-accepted L&M-Aba R<sup>®</sup> method. The outcome confirms compliance with GF's internal equal pay for equal work pay practices and guidelines. The analyses conducted in the year 2021 have been successfully verified by an independent external auditor. The analysis conducted in 2022 is currently being verified. GF will provide information about the outcome of the audit in its next report.

To further support women's empowerment, the company also encourages regular engagement and exchanges between its women Board members and women employees.



GF's target for empowering women at work is in line with the UN SDG 5 – "Empower all women and girls".

## Actions for promoting gender equality

GF joined "Advance", a business association of 120 leading Swiss companies promoting gender equality. Through its membership, employees – including women leaders from various departments – participated in online "Advance" events and shared best practices with D&I experts from other companies.

HR launched the "Women@GF" initiative to strengthen the influence of women in the company. Over 450 participants across all three divisions joined events focused on topics such as emotional intelligence, work-life balance and the benefits of networking for women. Towards the end of 2022, GF Casting Solutions expanded this initiative, renaming it "Diversity@GF" and opening it up to all colleagues interested or involved in these important topics.



The "Women@GF"/"Diversity@GF" initiative focuses on topics of importance to women and others – including personal branding, negotiating skills and overcoming challenges.



As part of its participation in Engineer's Day 2022, GF offered an online exchange for women interested in science, technology, engineering and mathematics (STEM). During the event, women in engineering roles at the company talked about their jobs and contributions. The exchange enabled STEM professionals and university graduates to gain valuable insights about GF employees, their careers and their professional experiences.

In addition, the company launched its first-ever employer branding social media campaign focusing on women working in various fields. "The Winning Formula" global campaign highlighted what working at the company is like and what makes women successful at GF.



<https://www.youtube.com/embed/4MAIEhD3K8w>

## D&I training and development

The company formally rolled out two training programs it had piloted in 2021. They aimed to raise awareness about the strengths of D&I and promote its broader adoption. In the first program, "Women in Leadership", 24 women leaders from Germany, Austria and Switzerland came together to compare, discuss and strengthen their leadership styles and extend their network of women professionals.

In the second program, 24 recruiters and managers from these same countries participated in awareness training regarding unconscious biases in recruiting, promotion and performance evaluations. The sessions covered topics ranging from improving self-awareness to enhancing one's visual and verbal perception. This training helps these experts to acknowledge and reduce unconscious biases in performance reviews and during conversations with team members about their career progression.



Participants in the "Women in Leadership" program discuss and strengthen their leadership style and network.

## First global D&I survey

Late in 2022, GF also conducted its first global D&I survey across all three divisions and its corporate headquarters. The survey measured employees' attitudes and perceptions of a diverse and inclusive workplace. The company will use the results, due in the first quarter of 2023, to identify areas where improvements are required.

## Moving beyond gender balance

In late 2022, D&I was the focus of an issue of **Globe**, the global employee magazine published in eight languages. In it, employees shared their day-to-day experience with D&I. The example of a four-member team at GF Machining Solutions in Chicago, where the diverse backgrounds – including age, gender, work experience, cultures and personalities – is representative of the many employees in the company. For this team, diversity means that everyone has specific, individual skills and experiences. As one team member says, when problem solving, what matters is working together as one team to get the best input, not how people look.



In problem solving, what matters is working together as one team to get the best input.

## Career development for mature employees

In Switzerland, GF offers employees aged 45 and older options to support them with a professional re-orientation should they want or need to change direction in their career, or if they would like to continue working beyond retirement age.

These employees have access to a platform run by "Loopings", a specialist agency that works with companies to prolong or help change the career or profession of employees in this age group. The platform provides them with information on life-long learning, opportunities to network with others, as well as webinars and other events on professional development at this stage in one's professional life.

In addition, employees aged 58 and older may take a specific three-day course to prepare for changes in their lifestyle upon retirement. Employees' partners are also invited and encouraged to attend the program.

# Fair and attractive employer

Through its values and culture, GF encourages all employees to cooperate, grow and take pride in their work.

Engaged and motivated employees represent GF's values and are the driving force for its long-term success. The company therefore strives to promote an inspiring work culture centered on its values related to "Caring", "Learning" and "Performance". Through its values and culture – reinforced through ongoing training and development – the company encourages all employees to cooperate, grow and take pride in their work.

4 QUALITY  
EDUCATION



8 DECENT WORK AND  
ECONOMIC GROWTH



17 PARTNERSHIPS  
FOR THE GOALS



#### Three values underpin the company's culture

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



In 2022, with the support of about 300 "Change Agents", some 2'400 employees took part in experiments focusing on how to embed these three values in their day-to-day work as part of the [Culture Movement](#).

## Employee engagement

In December 2022, GF Casting Solutions conducted an employee survey that 2'228 employees participated in, with 79% indicating the division as an "employer of choice". Though this is slightly below 80% overall, this result shows that the division is on the right track. GF Casting Solutions continues to work on raising this score with corresponding action plans for each site. GF Machining Solutions carried out a similar survey in November 2022 that had a participation rate of 65.8% and an employee satisfaction rate of 74.1%. Local management teams have started to work on improvement measures to raise employee satisfaction. GF Piping Systems did not carry out an employee engagement survey in 2022. In 2023, GF will conduct a global survey.

By 2025:



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

## Actions for promoting GF as an attractive employer

Throughout 2022, the company continued to promote its vision and culture through various channels. One example of this was an employer branding campaign on social media that showcased employees and their experience, giving potential recruits deeper insights into the employee experience. The campaign also sought to inspire current employees to further their careers within the company.

In April, more than 3'000 employees took part in a pulse check survey to gauge how well the three values related to "Caring", "Learning" and "Performance" are embedded in daily working life. The results show that the cultural evolution is progressing well and that most employees are familiar with the values. The company will continue to promote these during 2023.



[https://dms.licdn.com/playlist/C4E05AQEVQdavVsBj6g/mp4-360p-30fp-crf28/0/1664862333769?e=2147483647&v=beta&t=84KqliRGlyCMn\\_f-bbMb\\_5uMX\\_Fb45jsbzN5Dzw4VUk](https://dms.licdn.com/playlist/C4E05AQEVQdavVsBj6g/mp4-360p-30fp-crf28/0/1664862333769?e=2147483647&v=beta&t=84KqliRGlyCMn_f-bbMb_5uMX_Fb45jsbzN5Dzw4VUk)

Corporate HR launched a global employer attractiveness challenge where local HR teams shared their experiences with ideas and events they have implemented. When they shared their experience, each team had the chance to receive points from a jury consisting of representatives from all divisions. At the Corporate HR summit in April 2022, the most successful team (from Shawnee, OK, US) won CHF 1'000 to fund their events. These measures strengthened employee retention and positively impacted employee turnover.

## Learning and development

As part of its focus on innovation, GF places great importance on the professional and personal growth of its employees. In 2022, to enable employees to learn or refresh their knowledge at their own pace, HR strengthened the global learning management system, "MyLearning@GF", by putting courses online that were previously taught in person. They include "The 4 Disciplines of Execution" (4DX) and "The 7 Habits of Effective People" (7 Habits).

In 2022, approximately 8'200 employees engaged with the online platform. In addition, over 950 employees took part in in-person courses as part of the GF Academy – all of these were made available on "MyLearning@GF".

## Employee training

Course or platform	Number of trainings	Number of participants
The 4 Disciplines of Execution (4DX)	31	368
7 Habits	25	346
GF Academy	14	241

# Training and apprenticeships

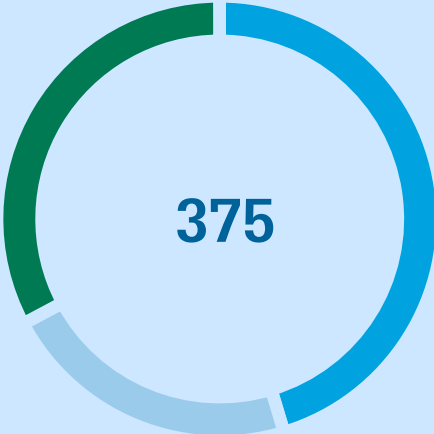
The Swiss system of vocational education and training is one of the hallmarks of the country's economic success. As part of its commitment to innovation, the company has been training apprentices in technical and commercial professions for over 100 years.

Due to its effectiveness in developing young people who want to grow their skills in a trade, GF aims to expand the Swiss model of apprenticeships to other locations around the globe. In 2022, 375 apprentices across its Austrian, German, Swiss and US sites participated in this valuable dual approach to professional education and on-the-job training. Part of the success of this approach lies in its ability to nurture young people's abilities.



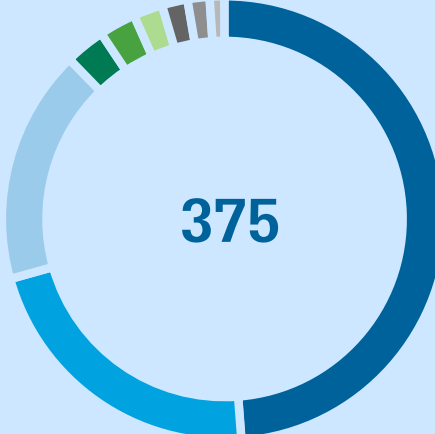
Apprentices receive both educational and on-the-job training, like as here in Altenmarkt (Austria).

Number of apprentices



- 0% GF Corporation
- 45% GF Piping Systems
- 22% GF Casting Solutions
- 33% GF Machining Solutions

Number of apprentices per country



- 49% Switzerland
- 22% Austria
- 17% Germany
- 3% USA
- 3% Turkey
- 2% Italy
- 2% Spain, France
- 1% China
- 1% Brasil, Canada, India



## Embracing the next generation of talent

GF recognizes that upcoming generations bring new ideas, energy and perspectives in their approach to work. The company therefore strives to build trust and cooperation between different generations of employees. It encourages them to learn from one another through a variety of mentoring and coaching processes.

The company promotes itself as an attractive employer in a variety of ways. This includes job and student fairs, open days for schools, apprentice exchanges between divisions, as well as collaborations with universities and advanced technical colleges around the world.

The company has joined UNITECH, a pan-European network that makes it possible for companies to recruit top graduates from some of the leading technical universities in Europe. These engineering students are required to complete a case study focusing on leadership and management scenarios. The students then undergo a yearly program that ends with an internship at GF or other companies.

In Switzerland, as part of National Future Day, the company invited school-aged children to join their parents for a day to gain insights into day-to-day life in the workplace. Over 80 children took part in 2022 at many sites across the country.



Trust and cooperation between generations brings new ideas, energy and perspectives.

## Employee fluctuation

In 2022, the global employee fluctuation rate was 13.8% (compared with 14.6% in 2021). Throughout the year, the company took concrete measures to improve talent retention, such as providing employees with a talent management platform where they can learn and develop their skills in line with the corporate values.

## Employee representation

GF respects its employees' right to join employee representation bodies. Many of these agreements exist in various locations and entities around the world, including Austria, China, France, Germany, Japan, Sweden, Switzerland and Taiwan. In countries where the law grants employees the right of codetermination, this right is protected and valued. In 2022, 58% of the company's employees were represented by a collective bargaining agreement.

[+](#) [GRI 3-3](#) | [GRI 401-1](#) | [GRI 404-2](#)

# Stakeholder engagement

GF operations and solutions affect its stakeholders in different ways. For the company, engaging with its stakeholders and working with them on important issues lies at the heart of its way of doing business.

When it comes to reviewing its progress against its own goals, being transparent with internal and external stakeholders enables the company to remain accountable. Such engagements help shape corporate policies and commitments, target sustainability investments as well as strengthen relationships with stakeholders.



Engaging with its stakeholders and working with them on important issues lies at the heart of GF way of doing business. | Photo © Thomas Oehrl

## Employees

In November 2022, the company launched its new intranet platform "We@GF", strengthening employees' interactions and improving the way the company communicates with employees globally. The associated smart app has the potential to engage more employees, so employees without a PC can use it to access content on the platform.

Championed by Corporate Sustainability and its divisional counterparts, sustainability is an integral part of GF's business. Corporate Sustainability worked with the divisional teams to organize employee workshops on topics ranging from science-based targets to diversity and inclusion, as well as a global internal sustainability conference planned for 2023.

17 PARTNERSHIPS  
FOR THE GOALS



In November, the company launched the GF Susty Fund with the aim of engaging with employees and enabling them to leave a positive sustainability footprint. The fund provides financial support for employees' sustainability project ideas in areas such as introducing biodiversity measures for a site or its surroundings, raising sustainability awareness, offering sustainability training within the company, providing support to start-ups or science projects linked to environmental benefits, or for community projects with clear social or environmental benefits.

At the divisional level, GF Piping Systems' Mystery Coffee, a networking initiative, gave employees the opportunity to sign up to a platform where they could meet with one another for a virtual exchange after being randomly matched. To date, some 1'000 employees have participated in such exchanges, fostering and improving cross-departmental and cross-country relations.

Also in 2022, as part of its continuous improvement process (CIP), GF Casting Solutions launched its "CIP Meets Sustainability" program, showcasing ideas from employees to further embed sustainability into day-to-day operations. Key areas covered were sustainable products, climate protection and resource conservation.

In September 2022, GF Machining Solutions introduced a "Success Reward" to celebrate and recognize actions by outstanding employees or teams who embrace the new GF values and help achieve the division's Strategy 2025. In particular, recognition will go to employees showing a positive attitude in their work, a commitment to quality and a willingness to take initiative for the good of the community.

Lastly, in March 2022, women employees in China organized a series of activities to celebrate International Women's Day.



**+GF+**

**GF Susty Fund**  
Bringing your best sustainability ideas to life

**Got a brilliant sustainability idea?  
Need some funding to get going?**

**Types of projects**

- Biodiversity measures for your site or its surroundings
- Sustainability awareness or training
- Sustainability CAPEX (funds to acquire, upgrade and maintain physical assets)
- Support start-ups or science projects linked to environmental benefits
- Community projects with clear social or environmental benefits



GF Casting Solutions launched its "CIP Meets Sustainability" program, showcasing ideas from employees to further embed sustainability into day-to-day operations.

## Customers

GF's products and solutions address the needs of its customers while enabling them to become more sustainable. In 2022, GF Piping Systems launched its "Connections for life" campaign, which focuses on some of today's most pressing sustainability issues, for example, overcoming water loss, improving energy efficiency, ensuring clean water, improving water quality and providing operational safety. The campaign brings to life how solutions such as process automation or cooling systems provide opportunities to improve efficiency, lower a company's carbon footprint and save precious resources, such as water.



The GF Machining Solutions Academy delivers bespoke training for the division's customers' technicians.

At Euroguss 2022, Europe's largest die-casting trade fair, GF Casting Solutions showcased how it is developing sustainable and innovative solutions to address the challenges of mobility in the future. The division is already making vehicle components lighter, integrating more functions and shortening time-to-market.

The GF Machining Solutions Academy serves as a unique platform for engaging with the division's customers. The academy delivers bespoke training for customers' technicians, thus providing knowledge transfer and enabling customers to realize the full potential of the division's solutions throughout their life cycle.

GF Machining Solutions took part in key international trade shows during 2022, with September marking an exceptional period of customer engagement. This includes events such as the International Manufacturing Technology Show (IMTS) in Chicago, IL (US), the AMB International Exhibition for Metal Working in Stuttgart (Germany) and Micronora in Besançon (France).



GF Machining Solutions took part in key international trade shows during 2022, such as the AMB International Exhibition for Metal Working in Stuttgart (Germany).



## Investors

GF participated in a total of 20 roadshows and investor conferences, meeting with investors and analysts, throughout the year. Sustainability remained a key topic, reflecting the growing importance of sustainability for investors and analysts, especially in areas such as sustainable finance and regulatory compliance.

The Chairman of the Board of Directors, the Chairwoman of the Compensation Committee and the Head of Investor Relations held about 20 dedicated meetings on sustainability and governance during ESG roadshows with the investor stewardship and sustainability teams of institutional investors and leading proxy advisors.

In September 2022, the company hosted its sixth Capital Markets Day, which is held once every three years. In line with the Strategy 2025, the event focused on innovation and sustainability. Over 60 analysts and journalists attended this event, and expressed their appreciation for the opportunity to discuss new technologies, applications and manufacturing methods directly with the members of the Executive Committee, senior management and experts.

During the event, a presentation on the Sustainability Framework 2025 and targets provided insights into how the divisions are bringing social or environmental benefits to the market with their products. These benefits include:

- mitigating water loss at a time of rapidly increasing water scarcity;
- empowering sustainable mobility with new technologies; and
- developing technologies for factories of the future.



Analysts and journalists at the sixth Capital Markets Day discussed new technologies, applications and manufacturing methods with the members of the Executive Committee, senior management and experts.

## Suppliers

Building and maintaining trusting, long-term relationships with sourcing and logistics partners is vital to GF's strategic business success. In addition to focusing on its own sustainability impact, the company also supports its suppliers on their sustainability journey. Through onboarding, reviews and assessments, the company works closely with its suppliers and business partners to identify, measure and reduce their sustainability impacts. The company provided webinars and training materials to its suppliers as part of its ongoing efforts to foster a sustainability-oriented supplier ecosystem.

## Universities and research institutes

This year's Capital Markets Day also inspired the more than 50 university students who attended a dedicated afternoon session that included a Q&A session with GF's Executive Committee. The students, who highly appreciated the open interaction, took a strong interest in the company's sustainability framework and progress towards its targets.

GF has now joined UNITECH, which enables it to recruit top graduates from leading technical universities in Europe. Founded in 2000, this pan-European network brings together the academic and corporate worlds to develop talented young engineers and enable them to successfully manage future challenges in global industry.



The GF Capital Markets Day inspired the more than 50 university students who attended a dedicated afternoon session.

## Regulators and industry associations

Operating across over 30 countries, GF complies with all applicable laws and regulations. As a member of the Conference Board, a global non-profit business membership organization and research group, the company engages with many councils and working groups. Throughout the year, the company continued to engage with the Corporate Responsibility and Sustainability Council, which focuses on sustainability topics. These include the need to shift from reporting on activity to reporting on impact, the circular economy, support for and alignment with UN Sustainable Development Goals (SDGs), and stakeholder communication.

As a member of Swissmem, the association for the Swiss technology industry, GF hosted the association's first in-person meeting. Company representatives shared its approach to sustainability reporting and listened to the successes and challenges that others face in this area.



## Communities and non-governmental organizations (NGOs)

GF supports and promotes cultural and social programs in many communities, and aspires to enrich lives and create a positive impact. The company also cooperates with many NGOs within the framework of its corporate citizenship programs, which focus on improving access to drinking water and education.



Employees at the GF Piping Systems facility in Irvine, CA (US) raised USD 150'000 for the Water Mission's water-related projects through their eighth Walk4Water.

Employees at the GF Piping Systems facility in Irvine, CA (US) organized their eighth Walk4Water, raising USD 150'000 for the Water Mission's water-related projects. In Germany, the division's staff took part in "Christmas in a shoe box" for the third consecutive year. The charity program offers boxes packed with socks, hats, scarves, toys and Christmas treats for children and families in need, primarily in eastern Europe.



In Germany, GF Piping Systems' staff took part in "Christmas in a shoe box" for children and families in need.

## Media and the general public

GF regularly publishes media releases, full and mid-year financial results, as well as information on the development of new markets, product innovations and acquisitions. The company also regularly invites journalists to events.

The publication of the GF Sustainability Report 2021 inspired the **Schaffhauser Nachrichten**, a local newspaper, to publish a comprehensive report on corporate sustainability reporting. The article also shone a spotlight on GF's reporting approach, notably the evolution from its first environmental report 25 years ago to its sustainability report today.

On social media, GF grew its presence by 20% on LinkedIn, with over 70'000 followers in 2022 (58'000 in 2021). It enjoyed stable growth on other channels (such as Twitter, YouTube and Xing) and built its presence on Instagram.



Through events such as media conferences, GF engages with the media on its performance and other developments.

# Material topics

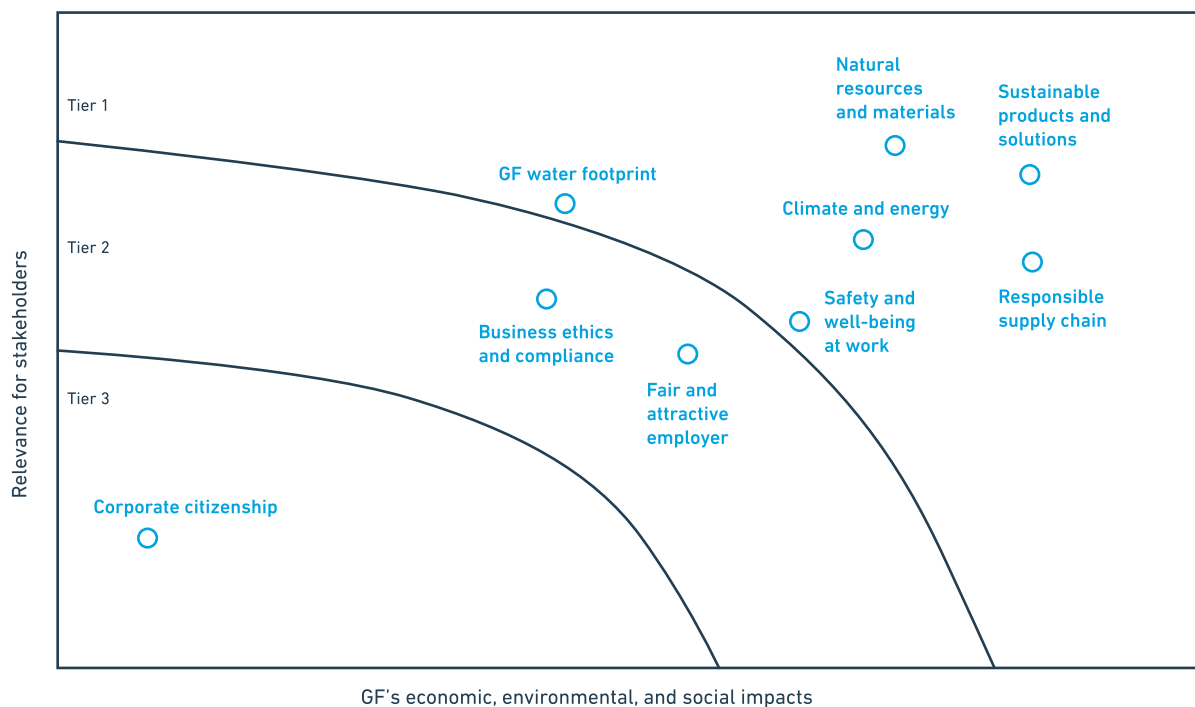
In 2022, GF continued to make progress against the goals and measures in its Sustainability Framework 2025, which is an integral part of its Strategy 2025. The company defined these measures by placing specific emphasis on the topics identified as material by its stakeholders.

The company last re-evaluated its topics of material importance in 2019, towards the end of the strategic cycle 2016-2020 and in preparation for the Sustainability Framework 2025. This evaluation led to the creation of a materiality matrix that the Executive Committee approved in early 2020. The company has since reviewed the process it used to identify material topics in 2019, which featured interviews with a diverse group of internal and external stakeholders. These included key customers, suppliers, investors, the Executive Committee, representatives from senior management and employees from different regions.

GF has made no changes to its material topics in this reporting cycle. It is committed to continuously improving and re-evaluating its efforts to foster sustainable development. The company therefore aims to re-design its process to identify material topics in 2023, with a particular focus on identifying and evaluating the impacts it has on the environment, people, economy and human rights. Details of the categories in the matrix and the reasons for their positions on the graph are described in the graphic and tables below.

In line with the requirements of the Global Reporting Initiative (GRI), GF reports on all material topics identified by its stakeholders in this sustainability report. To continue meeting GRI standards, the company continually works to describe its impacts on the environment, people, economies and human rights more precisely.

More information about the measures that have been introduced and the 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"> <li>• Sustainable products</li> <li>• Circular economy in product R&amp;D</li> <li>• Innovation</li> <li>• Customer relationship management</li> <li>• Product and customer safety</li> </ul>	<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"> <li>• Reuse of materials at GF's operations</li> <li>• Waste reduction</li> <li>• Biodiversity and land use</li> <li>• Pollution prevention</li> </ul>	<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"> <li>• GHG emissions along the value chain</li> <li>• Energy use in GF's operations</li> <li>• Non-GHG emissions (such as SOx, NOx, PM, and VOCs) in GF's operations</li> </ul>	<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"> <li>• Supply chain management (social and environmental impacts)</li> <li>• Integration of social and environmental topics into procurement processes</li> <li>• Human rights</li> </ul>	<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"> <li>• Occupational health and safety</li> <li>• Ergonomic work environments</li> <li>• Mental health and well-being</li> </ul>	<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>

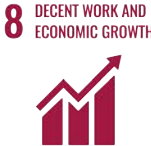
GF water footprint	<ul style="list-style-type: none"> <li>• Water consumption</li> <li>• Wastewater</li> <li>• Reducing water pollution</li> </ul>	Although GF's operations are not water-intensive, water is used along its entire value chain. Water use is particularly high in some of the upstream processes. 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"> <li>• Diversity, equal opportunity, and inclusion</li> <li>• Learning and development</li> <li>• Talent retention, attraction, and engagement</li> <li>• Employee work-life balance, flexible work arrangements</li> <li>• Working time and wages</li> <li>• Freedom of association</li> </ul>	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"> <li>• Corporate governance</li> <li>• Business ethics and compliance</li> <li>• Risk and opportunity management</li> <li>• Business continuity</li> <li>• Data privacy and safety</li> <li>• Cybersecurity</li> </ul>	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"> <li>• Community engagement</li> <li>• Local community impact</li> </ul>	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.

# Business ethics and compliance

Strong values and principles guide the decisions and conduct of GF employees in their daily work. As a sustainable leader, the company believes it can generate sustainable, long-term value only if it adheres both legally and ethically to the highest standards of conduct. Respect and responsibility – in both the physical and digital sphere – towards its stakeholders and the environment underpin the sustainable development of its business.

# Code of Conduct

The GF Code of Conduct is a comprehensive declaration of the company's mission, values and ethical principles. It helps GF to maintain the highest levels of professional conduct by defining the expected standards of behavior for its employees, contractors and partners.



The company has now revised its Code of Conduct to clarify its requirements and expectations. As the company global workforce encompasses a diverse range of nationalities, languages and cultures, its improved code more accurately aligns its divisions and employees with its high ethical and behavioral standards. The new Code of Conduct was approved in 2022 with the release planned for 2023 in 18 languages and is a cornerstone in all employment contracts and staff onboarding programs.



Respect and responsibility towards GF stakeholders and the environment underpin the sustainable development of its business



### Whistleblower platform

GF has an ISO 27001-compliant whistleblower platform in place, which enables individuals to securely and anonymously report any issues or wrongdoing (eg, discrimination, bullying, sexual assault and legal violations) via the confidential GF Transparency Line. The line is available 24/7 in nine languages: English, German, Chinese, French, Italian, Portuguese, Romanian, Spanish and Turkish.

- The number of issues reported in 2022 was 19.



### 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. As a member of the Corporate Risk Council, the CCO's task 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 by calling the CCO or writing to a special compliance e-mail address, contacting the Legal department in Schaffhausen (Switzerland), or sending the report anonymously. A corporate instruction details 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.



Employees are required, and business partners are encouraged, to report potential misconduct.

## Data ethics and cybersecurity

GF's centralized IT organization now includes the specialized IT Security team managed by a Chief Security Officer, who reports to the Chief Information Officer (CIO).

In 2022, the company rolled out its Security and Privacy campaign (awareness and training) to all employees worldwide. In addition, it began implementing a new Corporate Policy Framework that outlines the management of its IT, IT security and data privacy systems. The framework enables the company to remain compliant with all local and international data privacy regulatory requirements, including the EU's General Data Protection Regulations (GDPR). GF expects to complete its roll-out of the framework by the third quarter of 2023.

- The number of data breaches reported in 2022 was zero.
- GF also began implementing an ISO 27001-based Information Security Management System (ISMS) across all its divisions. The ISMS will enable the company to maintain the "CIA triad" of confidentiality, integrity and availability, while permitting robust business continuity plans, including regular tests where appropriate. GF's upgraded security controls will ensure it continues to meet the standards of its customers and suppliers.

In addition, the ISO 27001-based ISMS will help the company to:

- secure new business and strengthen its existing customer base;
- demonstrate that the organization regards cyber security as a critical priority;
- reaffirm its integrity and credibility with its partners; and
- protect its customers and suppliers and build stronger working relationships.

Cyberattacks are increasing in frequency and scale. The financial and reputational damage caused by inadequate IT security systems can have severe consequences for GF and its partners. The company therefore endeavors to avoid any financial penalties or other losses associated with data breaches through its increased security awareness and robust security controls.



In 2022, GF rolled out its Security and Privacy campaign (awareness and training) to all employees worldwide.

## Compliance training

Compliance training, via e-learning or in person, is carried out under the direction of the CCO at the corporate companies. Supported by the CCO, the Executive Committee determines the focus topics. In 2022, over 3'500 in-house compliance training sessions included an e-learning program on:

- anticorruption/antibribery
- antitrust/competition law
- export controls/sanctions
- data privacy, including the GDPR

Globally, the company also held on-site training sessions for specific employees with compliance responsibilities at its companies in the EU, the US and China. In addition, to reinforce compliance, the company has implemented the following measures:

- improved regular performance checks of the GF Compliance Agreement for intermediaries to ensure the compliance of business partners who act on behalf of or in the interests of GF and its companies;
- the introduction of a web-based system that helps GF to ensure it does not conduct business with any sanctioned organizations or individuals; and
- on-site compliance officers who work to identify and assess compliance risks, implement internal compliance controls, and provide support in identifying and implementing appropriate new measures.



## Human rights

GF published its [Corporate Policy on Human Rights](#), emphasizing the critical need to uphold and promote human rights within the company and its supply chain. In addition, GF endorses core international labor standards of the International Labour Organization (ILO) and maintains anti-corruption standards, which it has enshrined in its Code of Conduct, emphasizing the critical need to uphold and promote human rights within the company and its supply chain. In addition, GF endorses core international labor standards of the International Labour Organization (ILO) and maintains anti-corruption standards, which it has enshrined in its Code of Conduct.

GF is also a signatory and an active participant in the UN Global Compact (UNGC), underscoring its commitment to responsible business conduct. GF issues an annual "Communication on Progress" update to the UNGC.

## Human rights in the supply chain and products

The company is committed to maintaining and continually improving its internal processes to avoid any potential human rights issues associated with its supply chain or products. Its core focus areas include child labor, human trafficking and modern slavery, freedom of association, the recognition of the right to collective bargaining, as well as diversity and inclusion.

GF works to maintain these critical human rights standards by:

- monitoring its progress and reviewing the performance of its targets;
- reporting on issues regarding human rights and consulting with key stakeholders;

- seeking the participation of its employees and management teams to communicate its aims and raise overall awareness;
- ensuring that human rights are understood, complied with and promoted by all training personnel and managers; and
- committing to adopting grievance mechanisms, providing corrective actions for negative impacts, applying due diligence and conducting risk assessments.

## Product and service information and labeling

GF complies with all relevant laws and regulations regarding product safety, labelling and information provided to its customers. These efforts include, but are not limited to, the following:

- enclosing the CE and RoHS labels, when relevant;<sup>1</sup>
- 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).<sup>2</sup>

## Corporate Conflict Minerals Policy

Striving to be a good corporate citizen, GF is committed to ensuring the health, safety and protection of people who come into contact with its products and business. The company requires its suppliers to have high social, environmental and human rights standards. Managing its obligations in relation to conflict minerals is part of this corporate responsibility.

The company recognizes the risks of significant adverse impacts that may be associated with the extraction, trading, handling and exporting of minerals from conflict-affected and high-risk areas. Recognizing that GF has the responsibility to respect human rights and avoid contributing to conflict, it has adopted a [Corporate Policy on Conflict Minerals](#) on responsible sourcing from conflict-affected and high-risk areas, representing a common reference for conflict-sensitive sourcing practices and suppliers' risk awareness from the point of extraction until the end user.

In protecting human rights, suppliers offering goods that potentially contain conflict minerals are asked to provide proof of their supply chain due diligence using the Conflict Minerals Reporting Template (CMRT) or the Extended Minerals Reporting Template (EMRT) of the Responsible Minerals Initiative (RMI). In addition, a sustainability self-assessment is mandatory for all new suppliers. In parallel, GF requires its existing suppliers to provide a sustainability assessment as part of its ongoing program for sustainable supply chains.

More information is available in the [Corporate Policy on Conflict Minerals](#).



For GF, managing its obligations in relation to conflict minerals is part of its corporate responsibility.

## Tax management

GF recognizes that the administration and payment of taxes form 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

+ GRI 2-23 | GRI 2-24 | GRI 2-25 | GRI 2-26 | GRI 3-3 | GRI 205-1 | GRI 206-1 | GRI 207-1 | GRI 207-2 | GRI 207-3 | GRI 417-1

<sup>1</sup> Conformité Européenne (CE) indicates 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.

<sup>2</sup> 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.

# Responsible supply chain

Suppliers are strategic partners in the GF mission to become a sustainability and innovation leader providing superior customer value.



Maintaining a transparent and ethical supply chain is critical to sustainable business growth. GF therefore regards its suppliers as strategic partners in its mission to become a sustainability and innovation leader providing superior customer value. Through onboarding, reviews and assessments, the company works closely with its suppliers and partners to identify and measure their sustainability impacts. These actions promote sustainability throughout its operations, ensuring its products and solutions comply with all relevant laws, regulations and standards.



Maintaining a transparent and ethical supply chain is critical to sustainable business growth.

# Implementing sustainable procurement principles

GF sets very high standards of ethical business conduct for itself and expects the same from its business partners. The Code for Business Partners, of which all suppliers receive a copy for acknowledgment and compliance, outlines the core principles that business partners must adhere to. In particular, as part of this code, the company expects its business partners to:

- firmly adhere to ethical principles and business practices for labor, environment, health and safety, and management systems;
- effectively integrate, communicate and apply these principles to improve performance over time; and
- operate in full compliance with all applicable laws, rules and regulations.

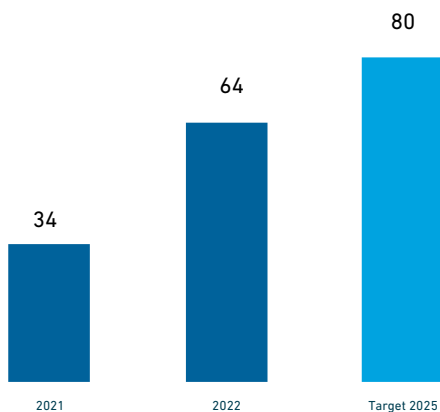
**By 2025:**



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

## Progress in 2022

**Conducted sustainability assessments of key suppliers in % of procurement spend**





## Supplier assessment results in 2022

At the end of 2022, GF completed sustainability assessments for 64% of its procurement spend, accounting for around 600 key suppliers. Approximately 70% received a very good score (above 45 on a scale of 0–100, with 100 being the highest), indicating that the majority of GF's suppliers already have effective sustainability measures in place. The remaining 30% of the assessed suppliers scored below 45 points, indicating average or insufficient corporate social responsibility (CSR) performance in the four assessment categories: environment; labor and human rights; ethics; and sustainable procurement.

## Supporting suppliers for improved performance

In order to improve suppliers' sustainability performance, GF conducted several initiatives. They included:

- supplier webinars focusing on sustainable sourcing activities and promoting ethical behavior that identified improvements relevant to all three divisions;
- sharing existing training resources from the online EcoVadis academy; and
- communication on the importance of external sustainability assessments for future collaboration.

## Supplier assessments focusing on sustainability performance

Sustainability assessments are an essential part of the company's responsible sourcing activities. In light of new legislations concerning sustainability-related due diligence, such as the German Supply Chain Act, GF has put in place comprehensive processes to ensure that sustainability aspects in its supply chains are transparent and considered in the supply chain management of all three divisions.

To monitor progress towards a responsible supply chain, the company has made supplier assessments one of the targets of its Sustainability Framework 2025. The company's long-term goal is to maintain a transparent overview of its entire supply chain's sustainability status and developments. The ratings and associated guidance of the external rating agency EcoVadis are vital to achieving this goal and ensuring that directly contracted suppliers consistently improve their sustainability performance.

EcoVadis customizes each evaluation based on the supplier's size, industry and country. In addition, as some other agencies provide the same sustainability assessments, GF also accepts their ratings if their scope is comparable to those of EcoVadis, such as the self-assessment questionnaire (SAQ) of Drive Sustainability – an association of automotive companies working on a circular and sustainable automotive value chain.

The logo for EcoVadis, featuring the word "ecovadis" in a lowercase, sans-serif font. The letter "v" is stylized with a green leaf-like shape integrated into its upper right portion.

To ensure objectivity, GF prefers its suppliers to use third-party assessments. However, recognizing that this is not always possible, particularly for smaller suppliers, the company launched its own self-assessment questionnaire in 2022 with questions based on EcoVadis assessments. This questionnaire is offered to smaller suppliers and a detailed analysis of their responses is conducted.

The next steps in GF's high-level process until 2025 include:

1. performing risk assessments on suppliers of purchased commodities for all three divisions;
2. engaging with suppliers to highlight relevant risk categories and support sustainability improvements; and
3. maintaining ongoing EcoVadis assessments to ensure suppliers continuously improve their sustainability efforts.

## Ensuring compliance with laws and regulations

The German Supply Chain Act, which will come into force in January 2023, aims to ensure companies comply with human rights and observe environmental standards in their supply chains. To comply with the requirements of this act, GF has carried out an initial assessment, using the [Transparency International Corruption Perceptions Index 2021](#) country indices to assess its exposure to human rights and environmental risks per country.

### + [Statement of principles regarding the German Supply Chain Act \(in German\)](#)

Furthermore, using internal and external expertise, the company evaluated each sourcing group's incremental human rights and environmental risks. The assessment results in a "heat map" – a color-coded data visualization of the significance of one or more criteria — indicating the level of risks of the suppliers based on country and commodity risk. This approach enables GF to have a clearer focus to work on mitigating human rights and environmental risks in its supply chain.

## UN Global Compact — Sustainable Supply Chain Management working group

Since early 2019, GF has been an active participant in the Sustainable Supply Chain Management working group organized by the [UN Global Compact's Swiss network](#). The group is a forum for companies to share knowledge and best practices about important topics, including improvements to supply chain visibility and traceability, supply chain risk assessments, supplier engagement and human rights due diligence.

In 2022, the group met at in-person and virtual events on three occasions. The network's discussions focused on assessing scope 3 emissions, the risks of child labor in the supply chain and the German Supply Chain Act.

At its third meeting, the working group invited GF to share its initial assessment of the German Supply Chain Act. Participants welcomed the company's approach, especially in terms of the composition of its project team and its risk assessment method. This invaluable peer feedback has positively contributed to GF's cross-divisional team's decisions on future steps, underlining the importance of the peer-to-peer exchange of expertise in such international forums.

+ GRI 3-3 | GRI 308-1 | GRI 414-2

# Corporate citizenship

Since its founding in 1802, GF has provided strong corporate and financial support to social organizations, commercial foundations and humanitarian projects. In 2022, it invested around CHF 2 million in social engagement activities at the corporate level, in addition to donations of around CHF 900'000 made by its individual sites. The largest contributions in 2022 went to GF's foundations: the Clean Water Foundation, Klostergut Paradies and the Iron Library.

# Celebrating 20 years of the Clean Water Foundation

Every year, the company supports the Clean Water Foundation with a substantial lump-sum contribution. The foundation's Board of Trustees includes the company's CEO, who is also the chairperson, and two members of the Executive Committee. GF created the Clean Water Foundation in 2002 to mark the 200th anniversary of Georg Fischer AG. That year, shareholders agreed to waive an anniversary dividend to set up the foundation and invest CHF 3.5 million in charitable projects aiming to ensure clean drinking water around the world. To date, the company has invested more than CHF 13 million in projects that provided access to safe drinking water, improving the lives of more than 360'000 people.

To mark the foundation's 20th anniversary, the Board of Trustees slightly adjusted the current strategy by approving financial support in the areas of health/hospital infrastructure and education/school buildings. As a result, the board decided to send two young engineers from GF Piping Systems to visit two projects – a health infrastructure in Somaliland and an education building in Zambia – to explore how GF, in addition to its financial support, can make a greater contribution in the future with its technical expertise and know-how. Due to the situation on the ground, one of the visits will take place in early 2023.

In Somaliland, the Swiss non-profit organization Safe Water Matters is building a drinking water treatment center in Berbera, the capital of the Sahil region. With the company's financial support, it will significantly improve access to clean drinking water at the Berbera Regional Hospital.

In Zambia, Water for Water (WfW) Switzerland, another non-profit organization, has been working since 2013 to improve vocational training in the Zambian water sector. With support from the Clean Water Foundation and in collaboration with local school authorities and water sector representatives, WfW has established a hands-on training program for prospective water supply specialists in the Luapula Province.

4 QUALITY EDUCATION



6 CLEAN WATER AND SANITATION



8 DECENT WORK AND ECONOMIC GROWTH



17 PARTNERSHIPS FOR THE GOALS



In Uganda, GF provided financial support for a safe water project implemented by Water Mission.

In addition, the foundation's Board of Trustees approved new funds for water projects in Cambodia, Nicaragua and Uganda. In Cambodia, it financed the water supply for the country's first home for children with intellectual disabilities, located in Neak Loeung, and built by Goutte d'eau, a Swiss-Cambodian non-profit organization. In Nicaragua, the foundation supported a water project for small farmers run by the Swissaid Foundation. In Uganda, GF provided financial support for a safe water project implemented by Water Mission for refugee settlements in northern part of the country.



The project in Uganda benefited refugee settlements in the northern part of the country.

## Klostergut Paradies and the Iron Library Foundation

The historic Klostergut Paradies in Schlatt (Switzerland) has been part of the company since 1918 and serves as its main center for seminars and training. Since 1948, the building has also been home to the Iron Library Foundation, one of the world's largest private collections of books on material science and the history of technology.

### Iron Library and GF Corporate Archives

The Iron Library and the Corporate Archives, managed by one team, preserve the company's historical and cultural heritage dating back to the 18th century. In 2022, its digital library included over 1'300 digitized volumes totaling more than 110'000 pages.

Since its establishment in 1948, the GF Iron Library Foundation has developed into one of the world's most important knowledge centers focusing on the history of technology. Its extensive holdings (more than 47'000 titles) date back over 750 years and, together with the Corporate Archives of Georg Fischer AG, attract scientists and researchers from all over the world. In recognition, the Corporate Archives are listed as an archive of national importance in the Swiss inventory of cultural assets.

### Sharing the history of technology with the world

Although the library's profile has changed over the years, its purpose remains the same: to make the history of technology accessible to researchers and the general public. The library fulfills this mission through activities such as guided tours, the History of Technology Conference, the Scholar in Residence program and a growing suite of digital activities. While many specialist libraries have been negatively impacted by the digital revolution, the Iron Library remains popular with researchers from all over the world, a testament to its ongoing relevance.



The extensive holdings (more than 47'000 titles) of the Iron Library date back over 750 years.

## Digital services

Libraries are also creating new ways to make their analog collections electronically available to the public. They are doing this in the spirit of "OpenGLAM" (galleries, libraries, archives and museums), a global network for preserving and sharing important cultural heritage. For its digitization, the Iron Library works primarily with cooperation platforms managed by larger university libraries, such as the ETH Library in Zurich. In 2022 alone, the Iron Library's online presence expanded by over 17'000 digitized pages.

## Wikipedia

The Iron Library also regularly organizes Wikipedia GLAM touring events in which experienced "Wikipedians" use the extensive holdings to write new articles and expand existing entries. In 2022, around 15 new Wikipedia articles were created at two Wikipedia events about "Women as multi-talents".

## Scholar in Residence program

Since 2015, the Iron Library has been offering scholars the opportunity to engage intensively with the holdings as a scholar in residence. The program attracts an international mix of established researchers, younger scholars and advanced students. Previous scholars have studied a range of topics, from the types of iron bridges built in the late 19th century to the sociological implications of metallurgy and the industrial applications of machine learning. Over the past seven years, the Iron Library has welcomed 23 scholars from 11 countries in Europe, as well as North and South America.

## History of Technology Conference

Every two years, around 60 international experts from the world of science, academia and industry meet at the Klostersgut Paradies for a conference on the history of technology. These conferences started in 1978 and are well known for their wide variety of topics, specialist presentations and relevance with regard to current events. The papers presented are subsequently published in the journal *Ferrum*, which is available free of charge online. This year, the latest issue of the journal focuses on a series of articles under the heading "Raw Materials: Natural Resources in History".



Participants at the Wikipedia Workshop "Women as multi-talents" writing articles at the Iron Library

# Reporting approach

This report covers the reporting period from 1 January to 31 December 2022. It was prepared in reference to the GRI Standards, SASB and the GHG Protocol.

Since publishing its first environmental report in 1997, GF has continually expanded the scope of the sustainability data it records and collects. Initially, only environmental indicators were collected. Social indicators were added in 2005.



This sustainability report is based on the same reporting period as the [Corporate Reports 2022](#). Sustainability reports from previous periods are available online on the [GF website](#) and in the [Corporate Archives](#). GF has prepared this report in reference to the GRI Standards, as well as the SASB Standards. The company has conducted for the first time in 2020 a mapping exercise to align GF's sustainability disclosures with the SASB Standards ([GRI/SASB Content Index](#)). Emissions are reported in scope 1, 2 and 3, in accordance with the Greenhouse Gas Protocol (GHG Protocol). Information on energy consumption, GHG emissions and GF's management of water as a resource is also provided annually to [CDP](#).

The list of entities included in this sustainability report follows the list of affiliated companies disclosed in Corporate Governance Report. This excludes companies that joined GF during the reporting period and have been associated with the company for less than one year. Companies with less than 10 employees only report data on the number of work-related accidents.

In 2022, the company again participated in the S&P Global Corporate Sustainability Assessment (CSA) with data for the 2021 reporting period.<sup>1</sup> In addition, GF Piping Systems and GF Casting Solutions underwent an annual reassessment by EcoVadis in 2022.

More information on GF's rankings can be found in the [Sustainability governance chapter](#) of this report and on the [Investor Relations page](#) of the corporate website.

## Scope of data collection and reporting

In the year under review, GF had 138 affiliated companies. About 77% of them report their social and environmental indicators, which covers 78% of the total workforce and 93% of production facilities<sup>2</sup>.

In 2022, and in line with the organizational adjustments made at GF, the scope of reporting was adjusted as follows:

- In 2022, two of GF Piping Systems' production sites in Brazil, and GF Casting Solutions' new production site in Shenyang (China) were included in the reporting from January 2022.
- The divested GF Linamar plant in Mills River, NC (US), was excluded from the reporting as of 1 April 2022. The GF Machining Solutions sales company in Turkey was excluded as of 31 December 2021.

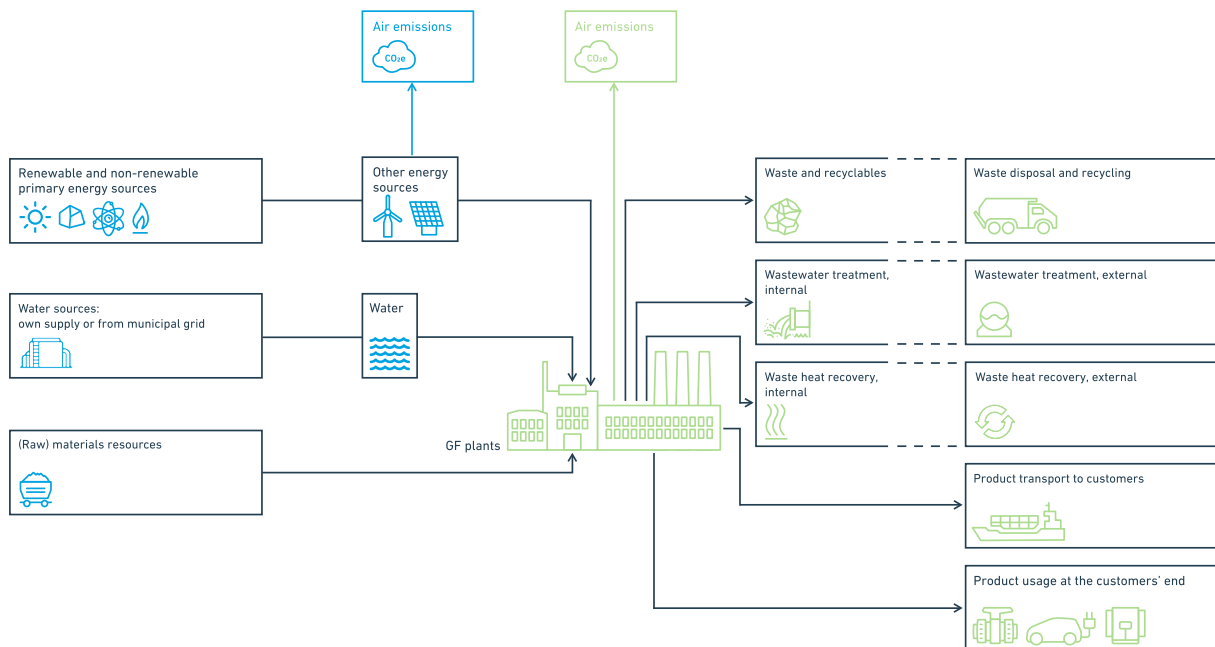
As in previous reporting periods, the information presented in this sustainability report accounts for the equity stake that GF holds in the individual companies under its control. The criteria for the inclusion of companies in this report is in line with the approach used in financial reporting and is as follows:

- The scope of consolidation includes GF and all GF Corporate Companies, which GF controls directly or indirectly by either holding more than 50% of the voting rights or by otherwise having the power to control their operating and financial policies (GF and these GF Corporate Companies are also collectively referred to as the GF Corporation). These GF Corporate Companies are fully consolidated.
- For companies where GF has a joint venture participation of 50% or less, environmental and health and safety, workforce and financial data are weighted accordingly.

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 [Financial Report 2022](#). Economic performance indicators cover all of the companies within the scope of corporate consolidation, as reported in the [Financial Report 2022](#).

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 (106 legal entities in total). They report this information to the sustainability teams at the divisional and corporate levels on a monthly, quarterly or bi-annual basis using the Sustainability Information System (SIS). Environmental performance indicators are reported by the production companies according to the same reporting cycles (56 production legal entities in total). Depending on the company's contribution to the consolidated result and the figure, the reporting cycle differs. Fuel consumption of company cars is part of the social data reporting and is therefore also reported by sales companies. Sales companies report only social data, as the impact of their environmental data is negligible<sup>3</sup>. In addition, all GF entities, regardless of their headcount, report information about work-related incidents as they occur.

GF's environmental indicators are energy and water consumption (on the input side), and air and GHG emissions, waste and wastewater (on the output side). In addition, GF has been calculating its scope 3 GHG emissions in accordance with the Greenhouse Gas Protocol Corporate Standard since 2019. These emissions are the result of activities that GF does not directly control, but that it indirectly impacts through its value chain.



Reporting limitations as of 31 December 2022

# Target scope and calculation for the Sustainability Framework 2025

The [Sustainability Framework 2025](#) was introduced in 2021 and is part of the Strategy 2025. Its targets must be achieved within five years, so by year-end 2025.

In order to provide companies with a realistic timeframe for reaching the targets, only those that have contributed to GF's sustainability reporting for the entire year until the end of 2022 are included in the calculation of the progress made against the Sustainability Targets 2025. Companies that join the sustainability reporting later have individual targets.

Business acquisitions, divestments and closures can also affect the results. Organizational adjustments that took place in 2022 are explained in the section: [Scope of data collection and reporting](#). For changes prior to this, please refer to the specific sustainability report for that year.

Progress against the Sustainability Framework 2025 targets for water and waste is calculated relative to production volume. The production volume is defined based on the activities of the individual divisions. For GF Piping systems, the production volume is defined as "produced tonnes"; for GF Casting Solutions, it is defined as "gross value added" (which includes all operating income minus the costs of materials and products, changes in inventory, and operating expenses); and for GF Machining Solutions, it is "hours worked".

In addition, for the Sustainability Framework, the CO<sub>2</sub>e emissions targets are calculated using adjusted 2019 GHG emissions as a baseline reference. The CO<sub>2</sub>e emissions targets were approved by the [Science Based Target initiative](#) in October 2022.

For the target regarding supplier sustainability assessments, GF Piping Systems used the 2020 purchase volume. The division has a conservative supplier base, and those suppliers do not, therefore, change often. For GF Casting Solutions and GF Machining Solutions, the purchase volume was updated in 2022, as the supplier base has changed compared to 2020. Both divisions will update the purchase volume data on an annual basis.

# Environmental performance indicators

## Forecasting of environmental data

In order to report environmental data in time for the publication of the Sustainability Report 2022, environmental data for the full-year 2022 have been forecasted based on historical data until 31 October 2022, the third quarter of 2022, or in some cases, 30 June 2022. As the reporting cycle varies based on a company's contribution to the consolidated result and the reported figure, the forecast is based on monthly, quarterly, half-yearly or annual data from 2022. The Sustainability Report 2022 discloses actual social data. In the first half of 2023, GF will publish actual environmental data. In the event that the actuals differ from the forecast by more than 5%, the respective figure will be restated. To ensure an earlier publication of the data, GF plans to continue applying forecasting of environmental data over a mid-term horizon.

The forecast is only relevant for environmental data, and it therefore covers production facilities only. The forecast consists of a best-fit model approach based on the following database:

- Option 1: all top contributing sites, if they accounted for more than 90% of the consolidated full-year 2021 result. This represents 60% of GF's production sites in SIS.
- Option 2: all top contributing sites and sites that report half-yearly, if the top contributing sites account for less than 90% of the consolidated full-year 2021 result. This represents 80% of GF's production sites in SIS.
- For both options, the figures for the remaining sites at group level are extrapolated to cover 100% of the KPI at group level.
- Out of eight different forecasting methods, the analysis delivers a best-fit model offering the highest accuracy compared to the last available reporting period for each KPI and site. The best-fit model is used to forecast data for the sites' respective reporting cycle.
- GF recognizes that the best-fit model for the third quarter is not necessarily the best-fit model for the fourth quarter. However, as there is insufficient historic seasonal data to verify this method, the company is relying on the fact that the fourth quarter seasonality is included in multiple forecast options.
- In 2022, four new sites joined GF's SIS reporting. No historical data exist for those sites (see above). GF therefore decided to exclude these sites from the forecast.
- Data on air emissions (four figures) are reported annually, as they are generally small. For 2022, the company used prior-year data (full-year 2021) for forecast 2022.

## Energy

Data are sourced from on-site meters, utility bills or environment management systems. Energy consumption is disclosed as gross and net energy consumption, the latter excludes energy sold. Energy sold includes only waste heat/steam sold and electricity. Renewable energy contains mainly purchased electricity and <0.1% biogas as disclosed in the [Sustainability Report 2022](#).

# GHG emissions

The company follows the GHG Protocol Corporate Accounting and Reporting Standard (GHG Protocol Corporate Standard).

## Scope 1 and 2 emissions

Scope 1 and 2 calculations are based on site-specific data for fuel consumed and utilities purchased. These calculations, apply published emissions factors and global warming potentials (GWPs) in accordance with the GHG Protocol Corporate Standard. Biogenic CO<sub>2</sub> emissions and process emissions are not material (<0.2% of total scope 1 emissions) and therefore part of the total scope 1 emissions. Scope 1 emissions are reported as total, because the majority thereof stems from CO<sub>2</sub>, and the remaining five GHGs make only a minor contribution (<1%). GHG emissions from processes are also reported annually as scope 1 emissions. Those emissions are either measured or calculated and a GaBi (a life cycle assessment modeling software) emission factor – v13.0 (12/2020) – is applied.

The company calculates scope 2 GHG emissions using the location and market-based methods, and includes the impact of renewable energy certificates (RECs) in accordance with the GHG Protocol. Market-based scope 2 emissions are used in GF's science-based targets and calculated in accordance with GHG protocol prioritization using emission factors derived from energy attribute certificates, from contractual instruments with energy suppliers or residual mix factors from GaBi (v13.0 (12/2020)). In the absence of contractual agreements or residual mix factors, GF uses location-based emission factors.

## Scope 3 emissions

GF calculated its scope 3 emissions in all 11 categories in accordance with the GHG Protocol and the Science Based Targets initiative criteria V4.2. Category 1 (Purchased goods and services) and category 11 (Use of sold products) were identified as material in the 2019 emission inventory, as they contribute to 90% of GF's scope 3 emissions.

Four categories – specifically, 8 (Upstream leased assets), 13 (Downstream leased assets), 14 (Franchises) and 15 (Investments) – were excluded due to their irrelevance to GF's business model.

In addition, two categories – category 2 (Capital goods) and category 5 (Waste generated in operations) – were calculated and deemed irrelevant due to their very low contribution. Purchased services and traded gas meters were excluded from the inventory. In total, the exclusions amount to 5% of total scope 3 emissions in 2019. (The exclusions consists of: excluded services: 3%; excluded traded meters: 2%; category 5 (Waste generated in operations) and category 2 (Capital goods): <1%.)

Category 1 (Purchased good and services) and category 11 (Use of sold products) were identified as material in the 2019 emission inventory, as they account for 90% of GF's scope 3 emissions.

In general, scope 3 emissions data were calculated using a combination of methods for each category, as prescribed by the GHG Protocol.

### 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.

Both divisions review their calculation annually and include annual updates.

For GF Machining Solutions, emissions from purchased goods and services are included. In addition, for GF Machining Solutions, emissions were derived from five representative machines based on the share of sales per machine type. As GF Machining Solutions contributed 2% to the total amount of category 1 emissions in 2019, the emissions from this category are calculated based on the share of sales per machine type; the representative machine types remain unchanged for the Strategy 2025 period.

For all three divisions, a combination ofecoinvent, supplier declarations and third-party research was used as the source for emission factors. 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.

#### **Category 11: Use of sold products**

GF Machining Solutions' electrical discharge machining (EDM), milling and laser machines consume energy and are therefore the main source of GHG emissions in this category. The figure for electricity consumption was calculated based on the electricity consumption of a selection of representative machines using the ISO 14955 standards and on the depreciation tables taken from the German Federal Ministry of Finance, while emission factors for electricity, including CH<sub>4</sub> and N<sub>2</sub>O, were taken from the International Energy Agency. In addition, for GF Machining Solutions, emissions were derived from five representative machines based on the share of sales per machine type.

Neither GF Piping Systems' nor GF Casting Solutions' products consume energy in the use phase. For GF Piping Systems, "the process automation portfolio," comprising all products with energy consumption, was excluded, as this was estimated to consume <0.1% of electricity during the use phase over a 10-year period.

#### **Remaining scope 3 categories**

Emissions from Business Travel (category 6) are calculated annually based on travel data from GF's travel management system. All remaining scope 3 categories were calculated or estimated for 2019 and are multiplied by sales increase/decrease on an annual basis.

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

## Air emissions

GF monitors halogenated and non-halogenated volatile organic compounds (VOCs), sulfur oxide (SO<sub>x</sub>), nitrogen oxide (NO<sub>x</sub>) and particulate matter (PM 10 and PM 2.5), heavy metals and persistent organic pollutants (POPs) that occur during manufacturing or due to infrastructure.

VOCs mainly originate from the use of halogenated and non-halogenated solvents, cleaning agents, diluents, propellants and paints in production processes. These emissions are not considered material and have therefore not been included in GF's environmental targets.

+ GRI 305-7

## Water and wastewater

GF classifies water withdrawn by source (public water supply, ground and rainwater), and wastewater by channel (sewage systems, unpolluted to nature). The water directly abstracted from the environment is used mainly for cooling purposes in closed-loop cooling cycles. Cooling with water enables the company to reduce its energy consumption because it does not require mechanical chillers. Data for water withdrawals are sourced from meters on-site, utility bills or environment management systems.

The water intensity target is binding for 14 sites that are located in water-stressed areas and have a significant annual water consumption of at least 10'000 m<sup>3</sup>. Water-scarce and water-stressed areas are defined using two different scenarios from the Aqueduct Water Risk Atlas developed by the World Resources Institute. Average consumption from 2018–2020 serves as a baseline to reflect a more realistic consumption trajectory. Progress made against the Sustainability Framework 2025 water target is calculated relative to production volume.

+ [GRI 303-3](#) | [GRI 303-4](#) | [GRI 303-5](#)

## Waste and recycling

GF classifies waste by type (normal waste, non-hazardous waste) and according to the disposal routes: recycling, landfill or incineration, storage or incineration. Included are all waste/recycling materials from production as well as any other waste from maintenance, offices, canteens, warehouses, etc.

Energy utilization of waste is not counted as recycling. Ultimately, GF aims to reduce the amount of waste sent to landfill and disposal and to increase the recycling rates.

The waste target is binding for all production companies. Average consumption from 2018–2020 serves as a baseline to reflect a more realistic consumption trajectory. The progress made against the Sustainability Framework 2025 waste target is calculated relative to production volume.

+ [GRI 306-1](#) | [GRI 306-3](#) | [GRI 306-4](#) | [GRI 306-5](#)

## Recycled input material

Data on recycled input material is collected from GF Piping Systems production companies. Due to the different nature of their business and negligible relevance, the other two divisions are excluded from this reporting.

# Supplier sustainability assessments

Data on supplier sustainability assessments is reported by each divisional procurement department based on an agreed process, and consolidated by Corporate Sustainability.

+ [GRI 301-1](#) | [GRI 308-1](#) | [GRI 414-2](#)

# Social performance indicators

## Employees, governance bodies, training and professional development

Employee data are disclosed according to age group, gender, full- or part-time employment, and management level, as well as departures and new hires with breakdowns, according to age group and gender. Data on interns, students and apprentices is also disclosed.

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

Employee data breakdown by age group and gender cover all GF sites and operations around the world. Data to disclose full- or part-time employment, management level, new hires and departures are reported by sites with more than 10 employees.

The turnover rate is calculated based on by dividing the number of departures by the average headcount in previous period.

Disclosure on training data follows the total number of training days and number of GF employees receiving training in the reporting period.

+ [GRI 404-1](#) | [GRI 404-2](#) | [GRI 405-1](#)



# Health and safety

GF reports work-related injuries and illnesses for GF and leased employees, and other third parties (eg, visitors) from all operations and sites (106 legal entities in total). The accident rate target is binding for all sites globally with more than 10 employees, and GF includes employees and leased employees in the KPI accident rate per 1 million working hours (LTIFR). Work-related fatalities are reported internally for all different employee types and disclosed in one consolidated number. In addition, GF collects data on days of absence for GF employees, which are separated into absences due to accident or illness, and total absence days.

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

<sup>1</sup> Formerly known as the SAM CSA and Dow Jones Sustainability Rating.

<sup>2</sup> A production facility manufactures GF's products and solutions, while a sales company sells these to the market.

<sup>3</sup> In accordance with the SBTi requirements, the GHG emissions of sales companies were calculated and found to account for <5% of GF's scope 1 and 2 emissions.

# Environmental performance indicators

Environmental performance indicators <sup>1</sup>	Unit	FC 2022	2021	2020	2019	2018
<b>Energy</b>						
Gross energy consumption	1'000 GJ	3'396	3'632	3'032	3'565	6'823
Electricity	1'000 GJ	2'190	2'342	2'087	2'427	3'249
Natural gas, biogas, fuel oil <sup>2</sup>	1'000 GJ	962 <sup>2</sup>	1'066	765	949	1'363
Coke	1'000 GJ	118	98	93	101	2'092
Fuel use (for internal transportation)	1'000 GJ	105	104	53	65	97
Other energy sources	1'000 GJ	21	22	34	22	22
Energy sold	1'000 GJ	-7	-8	-8	-1	-82
Net energy consumption	1'000 GJ	3'389	3'624	3'024	3'564	6'742
Renewable energy (incl. green electricity)	%	31	24	17	15	9
Energy intensity (net energy consumption per sales)	1'000 GJ / CHF million	0.85	0.97	0.71	0.96	1.47
<b>GHG emissions (in CO<sub>2</sub>e)</b>						
Total CO <sub>2</sub> e emissions ("market based" approach)	1'000 tonnes CO <sub>2</sub> e	1'802	1'975	1'592	1'873	630
Scope 1 (Direct emissions: fuel-related energy consumption) <sup>2</sup>	1'000 tonnes CO <sub>2</sub> e	82 <sup>2,7</sup>	84	68	77	312
Scope 2 market-based (Indirect emissions: electricity and district heating) <sup>3</sup>	1'000 tonnes CO <sub>2</sub> e	153 <sup>7</sup>	189	216	263	312
Scope 2 location-based (Indirect emissions: electricity and district heating) <sup>4</sup>	1'000 tonnes CO <sub>2</sub> e	272 <sup>7</sup>	293	297	333	411
Scope 3 absolute (Indirect emissions) <sup>5</sup>	1'000 tonnes CO <sub>2</sub> e	1'567	1'702	1'308	1'533	6
Category 1: Purchased goods and services	1'000 tonnes CO <sub>2</sub> e	1'001 <sup>7</sup>	1'176	858	1'003	
Category 3: Fuel and energy-related services	1'000 tonnes CO <sub>2</sub> e	59	55	47	55	
Category 4: Upstream transportation and distribution	1'000 tonnes CO <sub>2</sub> e	46	43	36	43	
Category 5: Waste generated in operations	1'000 tonnes CO <sub>2</sub> e	0	0	0	0	
Category 6: Business travel	1'000 tonnes CO <sub>2</sub> e	4	2	2	7	6
Category 7: Employee commuting	1'000 tonnes CO <sub>2</sub> e	19	17	15	17	
Category 9: Downstream transportation and distribution	1'000 tonnes CO <sub>2</sub> e	35	32	28	32	
Category 10: Processing of sold products	1'000 tonnes CO <sub>2</sub> e	17	16	13	16	
Category 11: Use of sold products	1'000 tonnes CO <sub>2</sub> e	373 <sup>7</sup>	349	298	348	
Category 12: End of life treatment of sold products	1'000 tonnes CO <sub>2</sub> e	13	12	10	12	
SBT 2026: scope 1 + 2 emission reduction (status at year-end)	1'000 tonnes CO <sub>2</sub> e	235	273	284	330	
SBT 2030: scope 3 emission intensity index (t CO <sub>2</sub> e emissions per t of processed material) (status at year-end) <sup>6</sup>		3.9				
<b>Air emissions<sup>8</sup></b>						
Nitrogen oxides (NO <sub>x</sub> )	1'000 tonnes	0.02	0.02	0.01	0.01	0.05
Sulfur oxides (SO <sub>x</sub> )	1'000 tonnes	0.01	0.01	0.00	0.01	0.01
Volatile organic compounds (VOCs)	1'000 tonnes	0.05	0.05	0.05	0.05	0.06
Particulate matter	1'000 tonnes	0.004	0.004	0.002	0.001	0.005

<b>Water and wastewater</b>						
Total water consumption	1'000 m <sup>3</sup>	2'254	2'304	2'013	2'417	2'759
City water from public supply	1'000 m <sup>3</sup>	682	696	648	702	697
Ground and rainwater	1'000 m <sup>3</sup>	1'572	1'608	1'365	1'715	2'062
Water consumption of GF sites located in water stressed areas	1'000 m <sup>3</sup>	407 <sup>7</sup>	457			
Wastewater volume	1'000 m <sup>3</sup>	1'743	1'803	1'772	1'961	1'961
Wastewater to sewage systems	1'000 m <sup>3</sup>	576	593	674	750	814
Wastewater returned to nature, unpolluted	1'000 m <sup>3</sup>	1'167	1'211	1'098	1'211	1'147
Sustainability Targets 2025: Water intensity index (status at year-end)		94	102	100		
Sustainability Targets 2025: Target line water intensity index <sup>9</sup> (water consumption per production volume <sup>10</sup> )		92	96	100		
<b>Waste and recycling</b>						
Total waste	1'000 tonnes	82 <sup>7</sup>	103	83	99	306
Non-hazardous waste		70	83	73	91	286
Normal waste, recycling	1'000 tonnes	58	58	53	67	245
Normal waste, landfill or incineration	1'000 tonnes	12	25	20	24	41
Hazardous waste	1'000 tonnes	11 <sup>7</sup>	20	10	8	20
Hazardous waste, recycling	1'000 tonnes	6	15	5	3	16
Hazardous waste, storage or incineration	1'000 tonnes	6	5	5	5	4
Recycled waste as % of total waste	%	78	70	71	71	85
Sustainability Targets 2025: Unrecycled waste intensity index (status at year-end)		58	91	100		
Sustainability Targets 2025: Target line unrecycled waste intensity index <sup>9</sup> (non-recycled waste per production volume <sup>10</sup> )		92	96	100		
<b>Recycled input material<sup>8</sup></b>						
GF Piping Systems recycled input material <sup>11</sup>	1'000 tonnes	9	9			
<b>Supplier sustainability assessment</b>						
Key suppliers spend assessed with sustainability assessments <sup>11</sup>	% of total purchase volume	64 <sup>7</sup>	34			
<b>Monetary values<sup>9</sup></b>						
Expenditure for environmental protection	CHF million	8	8	10	5	18
Energy costs	CHF million	86	81	65	72	130
Water and wastewater costs	CHF million	2.4	2.5	2.0	2.5	3.5
Waste disposal costs (-) and recycling credits (+)	CHF million	-2.2	-1.0	1	3	9

1 The environmental performance indicators include all GF production companies. In order to report data in time for the publication of the 2022 Sustainability Report, data for environmental figures are actuals for the period from January to September, where available from January to October, and forecasted for the remaining period from October/November to December 2022. Scope 3 GHG emissions and supplier sustainability assessments are shown as actuals and selected indicators if explicitly stated as previous year data. Further information on the forecasting methodology is available in the "Reporting approach", follow this link: <https://annual-report.georgfischer.com/22/en/reporting-approach>

2 In 2022, the share of biogas was 0.02% of natural gas, biogas and fuel oil, and less than 0.01% of scope 1 emissions. It is therefore not reported separately.

3 Market-based emissions refer to specific emission factors, e.g., from local utility providers, 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, eg, average emission factor of one country.

- 5 Category 1 (Purchased goods and services) and category 11 (Use of sold products) were identified as material in the 2019 emission inventory, as they contribute to 90% of GF's scope 3 emissions. The scope 3 SBT therefore focuses only on category 1 and 11. Four categories – specifically, 8 (Upstream leased assets), 13 (Downstream leased assets), 14 (Franchises) and 15 (Investments) – were excluded due to their irrelevance to GF's business model. Further information on the scope 3 emissions calculation is available in the "Reporting approach", follow this link: <https://annual-report.georgfischer.com/22/en/reporting-approach>
- 6 GF's scope 3 target focuses on category 1 and category 11, as those categories account for around 90% of total scope 3 emissions.
- 7 2022 PwC-assured, the assurance statement is available at the following link: <https://annual-report.georgfischer.com/22/en/external-assurance>
- 8 No forecasts have been calculated for these indicators as their contribution to GF's material topics is low. Values from the previous year are therefore displayed.
- 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" (including all operating income minus 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 In alignment with the targets of the Sustainability Framework 2025, the key figures were extended and the data collection began in 2021. As a result, no prior-year data is available.

GRI 302-1 | GRI 302-3 | GRI 302-2 | GRI 302-4 | GRI 303-3 | GRI 303-4 | GRI 303-5 |  
+ GRI 305-1 | GRI 305-2 | GRI 305-3 | GRI 305-4 | GRI 305-5 | GRI 305-7 | GRI 306-3 |  
GRI 306-4 | GRI 306-5

# Social performance indicators

Social performance indicators <sup>1</sup>	Unit	2022	2021	2020	2019	2018
<b>Employees</b>						
Number of employees	Headcount	15'207	15'111	14'118	14'678	15'027
	FTE <sup>2</sup>	14'634	14'532	13'562	14'073	14'413
Employees under 30	% of headcount	16	16	15	17	19
Employees aged 30-50	% of headcount	58	58	59	57	54
Employees over 50	% of headcount	26	26	26	26	27
<b>Female employees</b>						
	Headcount	3'060	2'952	2'812	2'958	2'512
	FTE	2'941	2'817	2'764	2'851	2'397
	% of headcount	20.1	19.5	19.9	20.2	16.7
Women on the Board of Directors	Number	3	2	2	2	2
	%	37.5	28.6	25.0	22.2	22.2
Women on the Executive Committee	Number	0	0	0	0	0
Women in management positions <sup>3</sup>	FTE	165	114	97	100	88
	% of total management positions	17.2	15.8	15.8	16.4	14.8
Newly appointed male managers <sup>4</sup>	Headcount	155	74			
Newly appointed female managers <sup>4</sup>	Headcount	65	31			
	% of new appointments	29	30			
<b>Part-time employees</b>						
	Headcount	524	405	396	400	457
	%	3.4	2.7	2.8	2.7	3.0
Female part-time employees	Headcount	278	264	261		
	% of part-time employees	53	65	66		
Student interns	Headcount	107	98	104	133	174
Apprentices	Headcount	375	363	387	446	469
<b>Employees with disabilities</b>						
	Headcount	110	115	114	129	280
	%	0.7	0.8	0.8	0.9	1.9
<b>Total new hires</b>						
	Headcount	2'622	2'842			
New hires, male	Headcount	1'998	2'279			
New hires, female	Headcount	624	563			
New hires of employees under 30 <sup>4</sup>	Headcount	956	1'055			
New hires of employees aged 30-50 <sup>4</sup>	Headcount	1'370	1'438			
New hires of employees over 50 <sup>4</sup>	Headcount	297	349			
<b>Total departures<sup>5</sup></b>						
	Headcount	1'999	2'038	2'019	2'162	1'796
Departures, male <sup>4</sup>	Headcount	1'574	1'610			
Departures, female <sup>4</sup>	Headcount	425	428			
Departures of employees under 30 <sup>4</sup>	Headcount	523	553			

Departures of employees aged 30-50 <sup>4</sup>	Headcount	1'132	1'113			
Departures of employees over 50 <sup>4</sup>	Headcount	344	373			
Total employee fluctuation <sup>5</sup>	%	13.8	14.6	14.6	15.8	11.9
Employee surveys <sup>6</sup>	Number of employees surveyed	6'254	5'431	3'289	5'448	6'341
Investigated incidents of discrimination	Number	0	0	2	1	3
Employees under collective bargaining agreement	Headcount	8'836	8'509	8'178		
	%	58	56	58		
<b>Training and professional development</b>						
Training and professional development	Number of GF employees with training (headcount)	10'997	10'209	9'394	10'517	11'558
	%	72.3	67.6	66.5	71.7	76.9
Training days	Days worked	28'704	22'975	18'860	30'527	36'974
	Days per employee	1.9	1.5	1.3	2.1	2.5
<b>Health and safety</b>						
Fatalities, work-related	Number	0 <sup>7</sup>	0	0	0	0
Work-related accidents involving injury of GF employees	Number	228	260	180	282	425
Work-related accidents involving injury of leased personnel	Number	37	41	22	56	133
Work-related accidents involving injury of other third parties	Number	1	1 <sup>8</sup>	4	7	10
Sustainability Targets 2025: Lost time injury frequency rate (LTIFR)	per 1'000'000 hours worked	7.9 <sup>7</sup>	10.2	9.4		
Sustainability Targets 2025: Target line lost time injury frequency rate (LTIFR) <sup>9</sup>	per 1'000'000 hours worked	8.3	8.9	9.4		
Absence days due to work-related accidents or illness	Days worked	5'142	4'943	3'593	6'605	8'675
Absence rate due to work-related accidents or illness	% of total days worked	0.1	0.1	0.1	0.2	0.2
Total absence days	Days worked	132'689	121'114	113'478	127'228	148'361
<b>Community</b>						
Order volume from workshops employing disabled people	CHF million	2.3	2.5	2.5	2.6	2.9
Charitable donations	CHF million	2.5	2.5	2.9	3.5	4.0

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 several figures were collected for the first time. As a result no prior-year data is available.

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

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

7 2022 PwC-assured, the assurance statement is available at the following link: <https://annual-report.georgfischer.com/22/en/external-assurance>

8 Restatement due to correction received.

<sup>9</sup> The target line is calculated linearly based on the baseline data and according to the defined target. In 2022, in line with GF's target calculation approach, four companies were added to the Sustainability Targets 2025 for the first time. The baseline of the accident rate target was adjusted accordingly. Further details can be found at: <https://annual-report.georgfischer.com/22/en/sr-keyfigures-2022>

✚ GRI 2-7 | GRI 2-30 | GRI 401-1 | GRI 404-1 | GRI 405-1 | GRI 406-1

# GRI/SASB content index

## 2 General Disclosures

Statement of use		GF has reported the information cited in this GRI content index for the period from 1 January to 31 December 2022 with reference to the GRI standards.			
GRI 1 used		GRI 1: Foundation 2021			
GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2022	Management Review 2022	Other
<b>2</b>		<b>General Disclosures</b>			
		<b>The organization and its reporting practices</b>			
2-1		Organizational details		<a href="#">Organization of GF</a> <a href="#">Corporate Structure and Affiliated Companies</a>	
2-2		Entities included in the organization's sustainability reporting	<a href="#">Reporting approach</a>		
2-3		Reporting period, frequency and contact point	<a href="#">Reporting approach</a> <a href="#">Contacts</a>		
2-4		Restatements of information	<a href="#">Reporting approach</a>		
2-5		External assurance	<a href="#">External assurance</a>		
		<b>Activities and workers</b>			
2-6		Activities, value chain, and other business relationships		<a href="#">Our Corporation</a> <a href="#">Governance bodies</a>	
2-7	RT-IG-000.B	Employees	<a href="#">Social performance indicators</a>	<a href="#">Financial key figures 2022</a>	
		<b>Governance</b>			
2-9		Governance structure and composition	<a href="#">Sustainability governance</a>	<a href="#">Organization of GF</a> <a href="#">Governance bodies</a>	
2-10		Nomination and selection of the highest governance body		<a href="#">Organization of GF</a> <a href="#">Governance bodies</a>	
2-11		Chair of the highest governance body		<a href="#">Board of Directors</a>	
2-12		Role of the highest governance body in overseeing the management of impacts	<a href="#">Sustainability governance</a>	<a href="#">Governance bodies</a>	
2-13		Delegation of responsibility for managing impacts	<a href="#">Sustainability governance</a>	<a href="#">Governance bodies</a>	
2-14		Role of the highest governance body in sustainability reporting	<a href="#">Sustainability governance</a>		
2-15		Conflicts of interest		<a href="#">Independent Lead Director</a> <a href="#">Corporate Compliance</a>	
2-16		Communication of critical concerns		<a href="#">Corporate Compliance</a>	
2-17		Collective knowledge of the highest governance body		<a href="#">Nomination and Sustainability Committee</a>	
2-18		Evaluation of the performance of the highest governance body		<a href="#">Self-evaluation</a>	
2-19		Remuneration policies		<a href="#">Compensation Governance</a>	
2-20		Process to determine remuneration		<a href="#">Compensation Governance</a>	
		<b>Strategy, policies and practices</b>			



2-22	Statement on sustainable development strategy	<a href="#">Letter to shareholders</a>	<a href="#">Introduction by the Chairman of the Board of Directors</a>
2-23	Policy commitments	<a href="#">Code of Conduct</a> <a href="#">Human rights</a>	
2-24	Embedding policy commitments	<a href="#">Code of Conduct</a>	
2-25	Processes to remediate negative impacts	<a href="#">Whistleblower platform</a> <a href="#">Corporate compliance</a>	
2-26	Mechanisms for seeking advice and raising concerns	<a href="#">Whistleblower platform</a> <a href="#">Compliance training</a>	
2-28	Membership associations <b>Stakeholder engagement</b>		<a href="#">Memberships</a>
2-29	Approach to stakeholder engagement	<a href="#">Stakeholder engagement</a>	
2-30	Collective bargaining agreements	<a href="#">Social performance indicators</a>	

## 3 Material Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2022	Management Review 2022	Other
3		Material Topics			
		<b>Disclosures on material topics</b>			
3-1		Process to determine material topics	<a href="#">Material topics</a>		
3-2		List of material topics	<a href="#">Material topics</a>		

## 200 Economic Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2022	Management Review 2022	Other
200		Economic topics			
		<b>GRI 201: Economic performance 2016</b>			
3-3		Management of material topics		<a href="#">Letter to shareholders</a>	<a href="#">Introduction by the Chairman of the Board of Directors</a>
				<a href="#">Strategy 2025: Continued implementation of targeted measures in 2022</a>	
201-1		Direct economic value generated and distributed		<a href="#">Financial key figures 2022</a>	

			<a href="#">Georg Fischer Ltd. income statement</a>
			<a href="#">Balance sheet</a>
			<a href="#">Five-year overview of the GF corporation</a>
<b>GRI 203: Indirect economic impacts 2016</b>			
3-3	Management of material topics	<a href="#">Sustainability governance</a>	
203-1	Infrastructure investments and services supported	<a href="#">Corporate citizenship</a> <a href="#">Product portfolio</a>	<a href="#">Our Forward Stories</a>  <a href="#">GF Piping Systems' contribution to the UN Sustainable Development Goals</a>  <a href="#">GF Casting Solutions' contribution to the UN Sustainable Development Goals</a>  <a href="#">GF Machining Solutions' contribution to the UN Sustainable Development Goals</a>
<b>GRI 205: Anti-corruption 2016</b>			
3-3	Management of material topics	<a href="#">Business ethics and compliance</a>	
205-2	Communication and training about anti-corruption policies and procedures	<a href="#">Compliance training</a>	
<b>GRI 206: Anti-competitive behavior 2016</b>			
3-3	Management of material topics	<a href="#">Business ethics and compliance</a>	
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	<a href="#">Whistleblower platform</a>	
<b>GRI 207: Tax 2019</b>			
3-3	Management of material topics	<a href="#">Business ethics and compliance</a>	<a href="#">GF Tax Policy</a>
207-1	Approach to tax	<a href="#">Tax management</a>	
207-2	Tax governance, control, and risk management	<a href="#">Whistleblower platform</a>	
207-3	Stakeholder engagement and management of concerns related to tax	<a href="#">Tax management</a>	

# 300 Environmental Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2022	Management Review 2022	qwwsdx
300		Environmental topics			
		<b>GRI 301: Materials 2016</b>			
3-3		Management of material topics	<a href="#">Natural resources</a>		<a href="#">GF Corporate Environmental Management Policy</a>
301-1		Materials used by weight or volume	<a href="#">Environmental performance indicators</a>		
		<b>GRI 302: Energy 2016</b>			
3-3		Management of material topics	<a href="#">Climate and energy</a>		
302-1	RT-IG-130a.1	Energy consumption within the organization	<a href="#">Reporting approach</a> <a href="#">Energy usage and GHG emissions</a> <a href="#">Renewable electricity</a> <a href="#">Environmental performance indicators</a>		
302-2		Energy consumption outside the organization	<a href="#">Reporting approach</a> <a href="#">Efforts to reduce scope 3 emissions</a>		
302-3		Energy intensity	<a href="#">Reporting approach</a> <a href="#">Environmental performance indicators</a>		
302-4		Reduction of energy consumption	<a href="#">Energy usage and GHG emissions</a> <a href="#">Renewable electricity</a> <a href="#">Energy efficiency</a> <a href="#">Environmental performance indicators</a>		
		<b>GRI 303: Water and effluents 2018</b>			
3-3		Management of material topics	<a href="#">Water footprint</a> <a href="#">Progress on Sustainability Framework 2025</a>		
303-1		Interactions with water as a shared resource	<a href="#">Reporting approach</a> <a href="#">Water footprint</a> <a href="#">Sustainability key figures 2022</a> <a href="#">Progress on Sustainability Framework 2025</a>		
303-2		Management of water discharge-related impacts	<a href="#">Water footprint</a>		
303-3		Water withdrawal	<a href="#">Reporting approach</a> <a href="#">Environmental performance indicators</a>		
303-4		Water discharge	<a href="#">Reporting approach</a>		

		<a href="#">Environmental performance indicators</a>	
303-5	Water consumption	<a href="#">Reporting approach</a>	
		<a href="#">Water footprint</a>	
		<a href="#">Environmental performance indicators</a>	
<b>GRI 305: Emissions 2016</b>			
3-3	Management of material topics	<a href="#">Progress on Sustainability Framework 2025</a>	<a href="#">GF Corporate Environmental Management Policy</a>
		<a href="#">Climate and energy</a>	
305-1	Direct (Scope 1) GHG emissions	<a href="#">Reporting approach</a>	
		<a href="#">Energy usage and GHG emissions</a>	
		<a href="#">Sustainability key figures 2022</a>	
		<a href="#">Environmental performance indicators</a>	
305-2	Energy indirect (Scope 2) GHG emissions	<a href="#">Reporting approach</a>	
		<a href="#">Energy usage and GHG emissions</a>	
		<a href="#">Sustainability key figures 2022</a>	
		<a href="#">Environmental performance indicators</a>	
305-3	Other indirect (Scope 3) GHG emissions	<a href="#">Reporting approach</a>	
		<a href="#">Efforts to reduce scope 3 emissions</a>	
		<a href="#">Environmental performance indicators</a>	
305-4	GHG emissions intensity	<a href="#">Environmental performance indicators</a>	
305-5	Reduction of GHG emissions	<a href="#">Reporting approach</a>	
		<a href="#">Climate and energy</a>	
		<a href="#">Environmental performance indicators</a>	
		<a href="#">Sustainability key figures 2022</a>	
		<a href="#">Progress on Sustainability Framework 2025</a>	
305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	<a href="#">Reporting approach</a>	
		<a href="#">Environmental performance indicators</a>	
<b>GRI 306: Waste 2020</b>			
3-3	Management of material topics	<a href="#">Natural resources</a>	
		<a href="#">Progress on Sustainability Framework 2025</a>	
306-1	Waste generation and significant waste-related impacts	<a href="#">Reporting approach</a>	
		<a href="#">Natural resources</a>	
306-2	Management of significant waste-related impacts	<a href="#">Natural resources</a>	
306-3	Waste generated	<a href="#">Reporting approach</a>	
		<a href="#">Natural resources</a>	
		<a href="#">Environmental performance indicators</a>	

306-4		Waste diverted from disposal	<a href="#">Reporting approach</a> <a href="#">Natural resources</a> <a href="#">Environmental performance indicators</a>
306-5		Waste directed to disposal	<a href="#">Reporting approach</a> <a href="#">Natural resources</a> <a href="#">Environmental performance indicators</a>
<b>GRI 308: Supplier environmental assessment 2016</b>			
3-3	RT-IG-440a.1	Management of material topics	<a href="#">Responsible supply chain</a> <a href="#">Progress on Sustainability Framework 2025</a>
308-1		New suppliers that were screened using environmental criteria	<a href="#">Reporting approach</a> <a href="#">Responsible supply chain</a>

## 400 Social Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2022	Management Review 2022	Other
400		Social topics			
<b>GRI 401: Employment 2016</b>					
3-3		Management of material topics	<a href="#">Fair and attractive employer</a> <a href="#">Diversity and inclusion</a> <a href="#">Stakeholder engagement</a> <a href="#">Progress on Sustainability Framework 2025</a>		
401-1		New employee hires and employee turnover	<a href="#">Social performance indicators</a> <a href="#">Fair and attractive employer</a>		
<b>GRI 403: Occupational Health and Safety 2018</b>					
3-3		Management of material topics	<a href="#">Safety and well-being</a> <a href="#">Progress on Sustainability Framework 2025</a>		
403-1		Occupational health and safety management system	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a>		
403-2		Hazard identification, risk assessment, and incident investigation	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a>		
403-3		Occupational health services	<a href="#">Safety and well-being</a>		

403-4		Worker participation, consultation, and communication on occupational health and safety	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a>	
403-5		Worker training on occupational health and safety	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a>	
403-6		Promotion of worker health	<a href="#">Reporting approach</a> <a href="#">Safety and well-being &gt;</a> <a href="#">Employee well-being</a>	
403-7		Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a>	
403-8		Workers covered by an occupational health and safety management system	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a>	
403-9	RT-IG-320a.1	Work-related injuries	<a href="#">Reporting approach</a> <a href="#">Safety and well-being</a> <a href="#">Social performance indicators</a> <a href="#">Progress on Sustainability Framework 2025</a>	
<b>GRI 404: Training and education 2016</b>				
3-3		Management of material topics	<a href="#">Fair and attractive employer</a>	
404-1		Average hours of training per year per employee	<a href="#">Reporting approach</a> <a href="#">Social performance indicators</a>	
404-2		Programs for upgrading employee skills and transition assistance programs	<a href="#">Reporting approach</a> <a href="#">Fair and attractive employer</a> <a href="#">Diversity and inclusion</a>	
<b>GRI 405: Diversity and equal opportunity 2016</b>				
3-3		Management of material topics	<a href="#">Diversity and inclusion</a> <a href="#">Progress on Sustainability Framework 2025</a>	
405-1		Diversity of governance bodies and employees	<a href="#">Reporting approach</a> <a href="#">Diversity and inclusion</a> <a href="#">Social performance indicators</a> <a href="#">Progress on Sustainability Framework 2025</a>	<a href="#">Members of the Board of Directors</a>
<b>GRI 406: Non-discrimination 2016</b>				
3-3		Management of material topics	<a href="#">Diversity and inclusion</a>	<a href="#">Code of Conduct</a>
406-1		Incidents of discrimination and corrective actions taken	<a href="#">Social performance indicators</a>	
<b>GRI 414: Supplier social assessment 2016</b>				
3-3		Management of material topics	<a href="#">Responsible supply chain</a> <a href="#">Human rights in the supply chain and products</a>	<a href="#">GF Corporate Policy on Human Rights</a>
414-2		Negative social impacts in the supply chain and actions taken	<a href="#">Reporting approach</a> <a href="#">Responsible supply chain</a>	

<b>GRI 415: Public policy 2016</b>			
3-3	Management of material topics	<a href="#">Stakeholder engagement</a>	<a href="#">Memberships</a>
<b>GRI 416: Customer health and safety 2016</b>			
3-3	Management of material topics	<a href="#">Product and service information and labeling</a>	
<b>GRI 417: Marketing and labeling 2016</b>			
3-3	Management of material topics	<a href="#">Product and service information and labeling</a>	
417-1	Requirements for product and service information and labeling	<a href="#">Product and service information and labeling</a>	

# External assurance

## Independent practitioner's limited assurance report

on selected sustainability indicators 2022 in the Georg Fischer Sustainability Report 2022 to the Board of Directors of Georg Fischer AG Schaffhausen

We have been engaged by the Board of Directors to perform assurance procedures to provide limited assurance on the selected sustainability indicators 2022 (including the statements on greenhouse gases) published in the Sustainability Report 2022 of Georg Fischer AG, Schaffhausen and its consolidated subsidiaries ('GF' for short) for the period ended 31 December 2022.

The following specified sustainability indicators 2022 published in the Sustainability Report 2022 are within the scope of our limited assurance engagement and are referenced with footnote 7 '2022 PwC-assured':

- Selected environmental performance indicators:
  - 'GHG emissions – Scope 1' on page 207
  - 'GHG emissions – Scope 2 – market-based' on page 207
  - 'GHG emissions – Scope 2 – location-based' on page 207
  - 'GHG emissions – Scope 3 – Category 1: Purchased goods and services' on page 207
  - 'GHG emissions – Scope 3 – Category 11: Use of sold products' on page 207
  - 'Water consumption of GF sites located in water stressed areas' on page 208
  - 'Total waste' on page 208
  - 'Hazardous waste' on page 208
  - 'Key suppliers spend assessed with sustainability assessments' on page 208
- Selected social performance indicators:
  - 'Fatalities, work-related' on page 211
  - 'Lost time injury frequency rate' on page 211

The reporting process and the sustainability indicators 2022 in the GF Sustainability Report 2022 (including the statements on greenhouse gases) were also prepared by the management on the basis of the guidelines for sustainability reporting of the Global Reporting Initiative, the "GRI Standards" (October 2016 version) and the Greenhouse Gas Protocol Initiative of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) (collectively referred to as "suitable Criteria"). GF presents its entire Reporting Approach from page 197 to 206.

### Inherent limitations

The accuracy and completeness of sustainability indicators (including the statements on greenhouse gases) in the Sustainability Report 2022 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 and on the Greenhouse Gas Protocol Initiative of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

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#### Board of Directors' responsibility

The Board of Directors of Georg Fischer AG is responsible for preparing the Sustainability Report 2022 (including the GHG statement) in accordance with the Reporting Approach. This responsibility includes the design, implementation and maintenance of the internal control system related to the preparation of the Sustainability Report 2022 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 Reporting Approach and adequate record keeping.

#### Independence and quality management

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 Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

#### Practitioner's responsibility

Our responsibility is to perform an assurance limited engagement and to express a conclusion on the on selected sustainability indicators 2022 in the Sustainability Report 2022 of GF. We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised) 'Assurance engagements other than audits or reviews of historical financial information' and the International Standard on Assurance Engagements 3410, Assurance Engagements on Greenhouse Gas Statements ('ISAE 3410'), issued by the International Auditing and Assurance Standards Board. Those standards require that we plan and perform our procedures to obtain limited assurance whether anything has come to our attention that causes us to believe that the selected data and information of GF Sustainability Report 2022 (including the GHG statement) was not be 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 from point of view of the suitable Criteria.
- *Site visit and management inquiry*
  - Remotely visiting of selected sites of GF Casting Solutions Suzhou Co. Ltd in China and Georg Fischer Fittings GmbH in Austria.
  - Interviewing personnel responsible for the internal sustainability reporting and data collection at the sites and at the Group level.
- *Assessment of the selected sustainability indicators 2022*  
Performing tests on a sample basis for the evidence supporting the selected sustainability indicators 2022 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 for those selected sustainability indicators 2022 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 the work we performed, nothing has come to our attention that causes us to believe that the selected sustainability indicators on pages 207 to 212 in the Sustainability Report 2022 of Georg Fischer AG, and referenced with a foot-note 7 '2022 PwC-assured', are not prepared 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 2022 in the Sustainability Report 2022 (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 2022 (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

Thierry Trösch

Simon Hux

Zürich, 27 February 2023



## 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 2-5

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+ GRI 2-3