



+GF+

Sustainability Report 2020

+GF+



Creating a
sustainable future

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Cover photo:

Jürg Feissli, vocational instructor for polymechanics and leader of the training workshop at GF Machining Solutions in Biel (Switzerland), is seen teaching young apprentices. The workshop focuses on cross-disciplinary projects with mixed project teams to optimize the learning process. National exchange programs with other sites promote technology and know-how transfer as well as networking.

Sustainability at GF

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Letter to GF's stakeholders

Dear readers,

The year 2020 will be remembered for the consequences of the global COVID-19 pandemic that disrupted our lives. While the crisis is ongoing, the focus has shifted towards the rollout of vaccination programs. We keep a positive outlook on the future and believe GF is well positioned to achieve its vision to become a sustainability and innovation leader providing superior customer value.



The 2020 strategy cycle has come to an end. During this period, GF reduced its accident rate by more than 40%, its energy intensity by 12%, and water intensity by 40%. In 2020, the Wall Street Journal listed GF as one of the ten most sustainable companies worldwide. Furthermore, CDP upgraded GF to an A- (Leadership) level for its management of risks and opportunities related to climate change and water security. These highlights caught the attention of investors and sustainability experts.

To better embed sustainability in our management, we formed a new Sustainability Committee within our Board of Directors, strengthening our Environmental, Social and Governance (ESG) focus at the highest organizational level. At the same time, 2020 was also the year the Executive Committee and the Board of Directors approved the new Strategy 2025. This new strategic direction includes a set of eight sustainability targets to achieve GF's vision and addresses its most material environmental and social topics. GF's goal is to increase the rate of products with social or environmental benefits to over 70% of the total sales. Our climate ambition is to achieve a 12.5% reduction of greenhouse gas emissions in absolute terms. GF also set targets on responsible supply chain management, diversity and inclusion, employee engagement, and health and safety.

One thing is clear: GF's strategic direction is ambitious.

GF will announce a comprehensive climate target that is in line with the Paris Agreement and the Science-Based Targets initiative (SBTi) in 2022. We will disclose not only the climate change-related risks, but more importantly, will also identify the resulting opportunities to further align our business model for an even more sustainable future. In this respect, GF intends to publish its first report in accordance with the guidelines of the Task Force on Climate-related Financial Disclosures (TCFD) by 2022. These are important elements to enable GF to realize its vision.

I invite you to read more about these and other topics in the Sustainability Report 2020 for a complete view of all our activities.



Andreas Müller
CEO of GF

GF's response to COVID-19

To say that 2020 was challenging—and for millions of people, tragic—would be an understatement. The COVID-19 pandemic presented individuals, governments, and companies with unprecedented challenges. In a business context, it quickly revealed the drawbacks of intricately complex global supply chains and logistics systems that rely heavily on inputs being delivered on time from another part of the world. Amid a nearly global lockdown, this placed an enormous strain on many companies' production cycles. GF, by contrast, was well positioned to deal with this head-on. GF's global footprint and the localization of many of its supply chains helped ensure business continuity. Many of GF's operations, especially in piping systems and the production of machines used to make medical equipment, were deemed to be essential. Nevertheless, parts of the business experienced significant adverse effects in the first half of 2020 from the temporary shutdown of automotive customers in Europe and elsewhere. The pandemic tested everyone at GF, on and off the job. Lockdowns, travel restrictions, and sweeping changes in work practices on the factory floor and in the office dramatically curtailed social interaction.

As an act of solidarity with employees, in early April 2020, the Board of Directors, the CEO, the Executive Committee, as well as Senior Management and Managing Directors agreed to voluntarily and temporarily reduce their monthly fixed compensation. The money was placed in a solidarity fund and distributed to GF employees living and working in countries with less comprehensive social protection systems.

GF's response to COVID-19 demonstrated how it had learned from previous crises, for instance with the establishment of a central stockpile of personal protective equipment (PPE). In early 2020 when the coronavirus was first reported in China and PPE was quickly becoming scarce, the stockpile enabled GF to deliver 40'000 masks to colleagues in China from its warehouse in Schaffhausen (Switzerland). Two months later, when the pandemic had spread worldwide, these same colleagues showed their solidarity by supplying GF companies in Europe, the Americas, and the rest of Asia with a total of 120'000 masks.

All across the world, GF sites had to react swiftly to the escalating situation and the government countermeasures. Back office employees in most countries where GF is present soon started working from home. Although this initially put a strain on GF's digital infrastructure, it helped propel a rapid upgrade to more advanced virtual office capabilities. Microsoft Teams became and still is the most frequently used application for online meetings and cross-team collaboration at GF.

Following strict protocols enabled the majority of GF companies to remain open for business throughout the year. A number of GF sites donated PPE, hand sanitizer, and cleaning materials to healthcare workers and first responders in their communities. GF sites worldwide conducted employee hygiene training and awareness programs, put in place the required physical distancing practices, equipped themselves with sanitation equipment, extra hand-washing stations, and face masks, and began conducting temperature checks and providing on-site COVID-19 testing.

Due in part to these measures, a number of GF locations did not have a single reported case of COVID-19 during 2020.



GF's emergency plan made it possible for production to be back up and running in a short period of time. By mid-June 2020, production levels at GF Machining Solutions in Beijing (China) had almost returned to normal.



Strict hygiene and physical distancing measures became the norm. This includes regular hand disinfection.



Some procedures became routine, such as temperature checks before starting work.



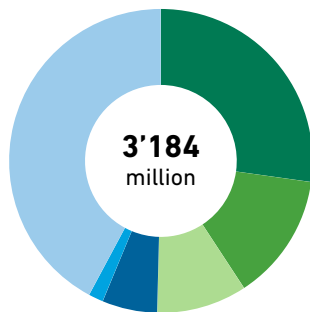
Many sites, including the GF Piping Systems facility in Indonesia, distributed face-masks on a daily basis.



Key figures for 2020

Economic performance indicators

2020 sales with social or environmental benefits
In CHF



- 27% Mitigating climate change
- 14% Conserving water
- 10% Promoting safety
- 6% Ensuring health
- 2% Sustainable buildings
- 42% No direct or substantial impacts

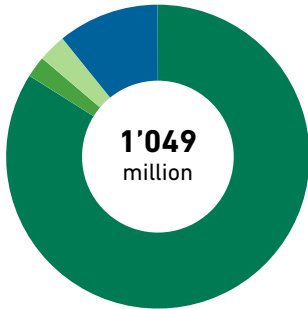
2020 sales with social or environmental benefits
% of total sales

58

Examples of identified benefits include but are not limited to: safe and hygienic potable water in buildings, safe and leak-free distribution of gas and chemicals to ensure fewer human and environmental accidents, light metals components (including components for electric and plug-in hybrid vehicles that reduce the vehicles' weight and greenhouse gas (GHG) footprint), solutions that enable GF's machining customers to manufacture their products in a more energy-efficient way.

Net value added 2020

In CHF



84% Employees¹

2% Lenders

3% Public authorities²

11% Shareholders

¹ Salaries and wages, employee benefits, and social security

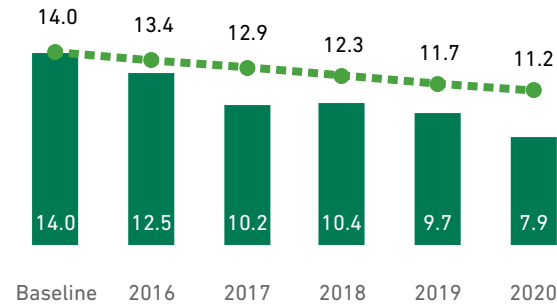
² Income taxes

Net value added to the Corporation was 0% as the dividends paid in 2020 were approximately at the level of the net income.

Social performance indicators

Accident rate³

Per million hours worked



● Target line

Accident rate³

Per million hours worked

7.9

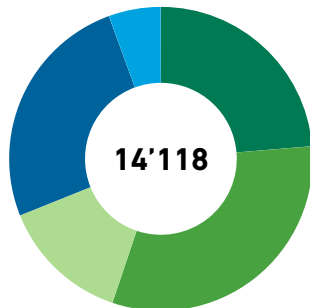
Absence rate³

% of total days worked

3.5

Employees by region

Headcount



- 24% Switzerland
- 31% Rest of Europe
- 14% Americas
- 26% Asia
- 5% Rest of world

Total employee fluctuation

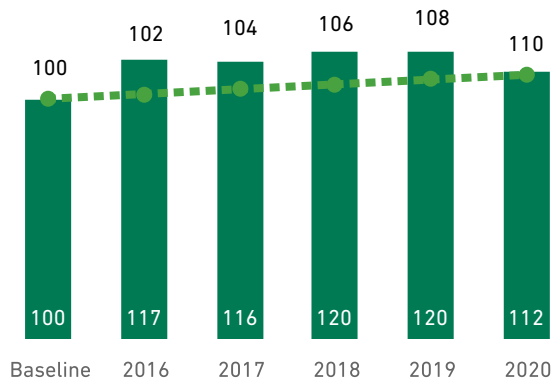
In %

14.6

→ Please see the details in the section "Employees and society"

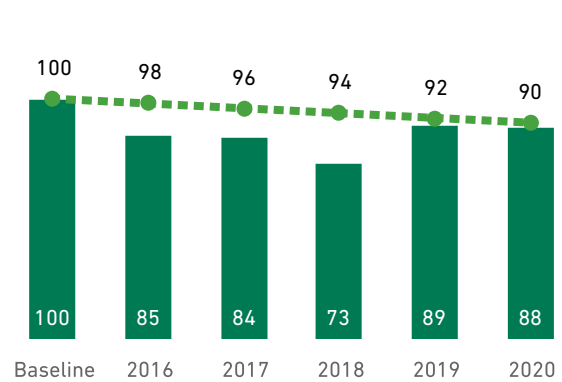
Environmental performance indicators

Energy efficiency index³
(production volume⁴ per energy consumption) in %



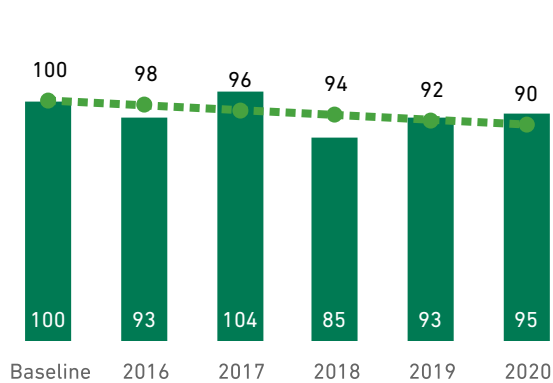
● Target line

GHG emissions intensity index³
(CO₂e emissions⁵ per production volume⁴) in %



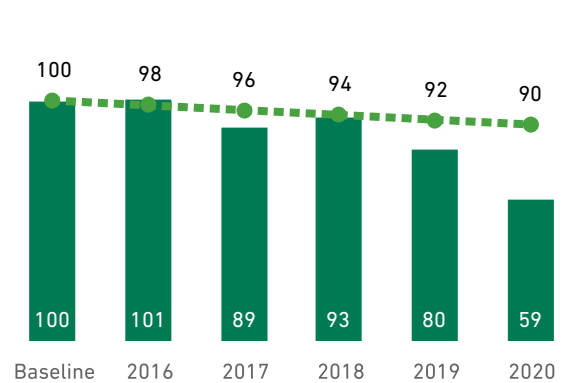
● Target line

Unrecycled waste intensity index^{3, 6}
(unrecycled waste per production volume⁴) in %



● Target line

Water intensity index³
(water consumption per production volume⁴) in %



● Target line

→ Please see the details in the section "Environment and energy"

Sustainability rankings

The Wall Street Journal

In 2020, *The Wall Street Journal* examined the sustainability performance of more than 5'500 publicly traded companies. GF ranked 9th among the world's 100 most sustainably managed companies. The ranking is based on sustainability metrics for environmental protection, social and human capital, business model, innovation, and other areas. This high rating reflects GF's years of sustainability efforts and the quality of its ESG disclosures to stakeholders.



CDP

In December 2020, London-based CDP awarded GF an A- rating (Leadership level) for its worldwide measures to reduce energy consumption, its prudent management of water as a resource, and its transparent disclosure of relevant information to outside stakeholders. This rating represents a one-level improvement from 2019 (B). GF also scored higher than the European and the Powered Machinery sector averages. The CDP 2020 reporting cycle covers activities from 2019. Environmental management has been a core element of GF's sustainability program for many years.

A-

EcoVadis

In the 2020 cycle of external assessments triggered by requests from GF Piping Systems customers, the division earned a gold level EcoVadis sustainability rating.⁷ The award recognizes GF Piping Systems' responsible approach to environmental protection, labor and human rights, ethics, and sustainable procurement. A score of 68 out of 100 points provides the division with an incentive to continue to improve in all of these areas and to aim for a higher score for 2021.



Ticker/Valor symbols

Telekurs, Dow Jones (DJT): FI-N

Reuters: FGEZn

Listing

Zurich, Switzerland: SIX Swiss Exchange ISIN: CH0001752309 Sustainability indices member: SXI Switzerland Sustainability 25^{®8} and Ethibel EXCELLENCE Investment Register⁹

³ Social and environmental index KPIs were restated due to the divestment of GF Casting Solutions' iron foundry in Herzogenburg (Austria) and the application of a 50% equity share of

a GF Piping Systems facility in China. The iron foundry is excluded in the target-relevant KPIs for all years.

- ⁴ GF's divisions define production volume according to the nature of their particular businesses. GF Piping Systems defines it as "metric tonnes produced," GF Casting Solutions as "gross value added" (operating income less the cost of materials and products, changes in inventory, and operating expenses), and GF Machining Solutions as "hours worked."
- ⁵ For the purpose of this calculation, CO₂e emissions = Scope 1 + Scope 2 market-based emissions.
- ⁶ Due to data quality improvement at one site of GF Casting Solutions, waste and recycling data changed slightly for 2018 and 2019. The corrections impact the progress to meet the annual unrecycled waste target. The specific values for both years changed, however the general development did not, i.e. the unrecycled waste target was achieved in 2018, but not in 2019.
- ⁷ EcoVadis is an internationally recognized market leader in providing a platform-based solution for the assessment of suppliers' sustainability practices.
- ⁸ The [index](#) represents the top 25 companies ranked as most sustainable out of the SMI expanded index based on an assessment conducted by an independent sustainability rating agency.
- ⁹ The independent Belgian agency [Forum ETHIBEL](#) reconfirmed GF for inclusion in the Ethibel EXCELLENCE Investment Register effective 08/05/2020, indicating that the company's sustainability performance is better than its sector average.

Corporate profile

GF consists of three divisions: GF Piping Systems, GF Casting Solutions, and GF Machining Solutions. Founded in 1802, the Corporation is headquartered in Schaffhausen, Switzerland and present in 34 countries with 137 companies, 59 of them production facilities. Its 14'118 employees generated in 2020 sales of CHF 3'184 million. GF is the preferred partner of its customers for the safe transport of liquids and gases, lightweight casting components, and high-precision manufacturing technologies.



GF Piping Systems

As the leading flow solutions provider for the safe and sustainable transport of fluids, GF Piping Systems creates connections for life. The division focuses on system solutions and high-quality plastic and metal components for a diverse installed base. The portfolio of fittings, valves, pipes, automation, and jointing technologies covers all water cycle applications. Simultaneously, specialized solutions, including engineering, customizing, and prefabrication, provide expertise at every project phase.

GF Piping Systems supports customers in the fields of utility, industry, and building technology.

GF Casting Solutions

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

The division supplies the global automotive industry, aerospace and energy markets, and provides components for off-highway vehicles as well as for industrial applications.



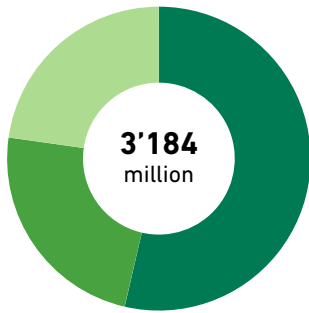
GF Machining Solutions

GF Machining Solutions is one of the world's leading providers of complete solutions for the tool and mold making industry and manufacturers of precision components. The portfolio includes milling and EDM¹ machines. The division also offers spindles, laser texturing, laser micromachining, additive manufacturing, automation and tooling, as well as digitalized solutions.

The key customer segments are the Information and Communication Technology (ICT), electronic, medical, automotive, and aerospace industries.

GF Corporation sales by division

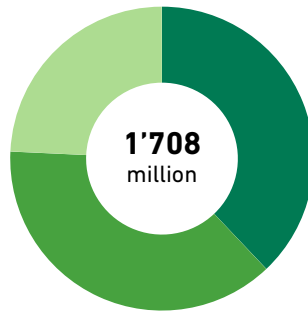
In CHF



- 54% GF Piping Systems
- 24% GF Casting Solutions
- 23% GF Machining Solutions

GF Piping Systems sales by segment

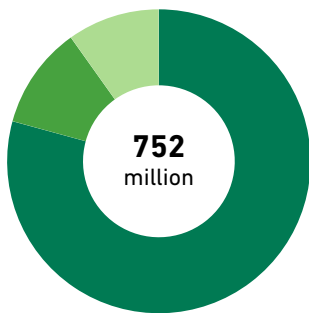
In CHF



- 38% Utility
- 38% Industry
- 24% Building technology

GF Casting Solutions sales by segment

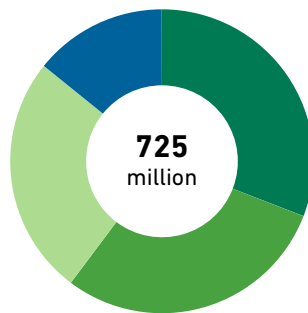
In CHF



- 79% Automotive
- 11% Industrial applications
- 10% Aerospace/Energy

GF Machining Solutions sales by segment

In CHF



- 31% Customer service
- 29% Milling
- 26% EDM
- 14% Advanced manufacturing/Automation & Tooling

Worldwide presence

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

¹ Electrical discharge machining

Products and innovations

A key aspect of GF's strategic efforts across its three divisions has been the transformation of GF from a pure product and system provider to a provider of integrated solutions.

The goal is to support customers in the most meaningful way with added-value services over the entire life cycle of offered solutions. Here, the sustainability aspects of GF's products play an integral role in achieving the purpose of all its business activities.

For GF Piping Systems, this refers to ensuring and safeguarding long-lasting, leak-free, and high-quality transportation of water, gas, and chemicals.

For GF Casting Solutions, this means designing and producing lightweight components for the next generation of mobility solutions.

For GF Machining Solutions, this means providing customers with modern high-precision machines and solutions that, among other sustainability benefits, significantly improve the energy efficiency of product manufacturing in a variety of the division's customer segments.

GF Piping Systems

Strategy and solutions

GF Piping Systems is the leading flow solutions provider that enables the safe and sustainable transport of fluids, creating connections for life. **Everything is connected**, and sustainability continues to be a key value driver in three senses. GF Piping Systems wants to:

1. ensure its customers enjoy a sustainable flow of water, gas, or chemicals without safety issues, leakages, and other environmentally challenging consequences.
2. make sure that its solutions improve its customers' sustainability in terms of energy use and GHG footprint.
3. support customers' sustainable success by increasing their efficiency during the installation and operation of GF's systems compared to traditional systems.

The division therefore works on creating solutions that address a variety of issues facing consumers and society:

- Tackling waterborne Legionnaires' disease and ensuring that drinking water installations meet the highest hygiene standards.

- Helping mitigate worldwide drinking water losses due to leakages in aging infrastructure.
- Creating solutions for the energy-intensive cooling process of the increasing number of data centers.
- Contributing to the development of sustainable city infrastructure and the growing green building sector.
- Developing lighter, longer-lasting solutions that enable the marine industry to reduce GHG emissions and fuel consumption while increasing load capacity.

The study entitled "*Management of Legionella in Water Systems*" estimates that around 52'000 to 70'000 Americans suffer from Legionnaires' disease each year. Legionnaires' disease afflicts and kills more people in the United States than any other reported waterborne disease. *The Hycleen Automation System*, developed and produced by GF Piping Systems, is a state-of-the-art circulation control system that ensures uniformly high temperatures and water exchange in pipe networks, which prevent legionella infestation thanks to hydraulic balancing and automatic flushing. This system is simple to install and operate, while its automated hydraulic balancing helps save energy.

The global population is expected to reach nearly 10 billion people by 2050. Two thirds will live in cities. Sustainable urban concepts will therefore be essential for meeting the environmental challenges of the future. *COOL-FIT 4.0*, an advanced pre-insulated piping system, enables customers to operate with higher efficiency (up to 30% compared to conventional post-insulated metal piping systems) while reducing their maintenance and operating costs.

State-of-the-art pressure management technologies such as GF's *NeoFlow Pressure Regulating Valve* can help utilities reduce non-revenue water. This issue is estimated to cost USD 39 billion annually, by preventing pipes from being over-pressurized while delivering stable flow capacity. Reducing water leakage by 5% alone can save up to 1'020 million liters of water and 313 million kWh of electricity annually. This equals to the electricity use of over 31'000 homes in the USA and avoids unnecessary annual emissions of up to 225'000 metric tons of CO₂.¹



Illustration of GF's NeoFlow Pressure Regulating Valve

To learn more about how GF's solutions address [good health and well-being](#), [data centers and sustainability](#), and [sustainable heating and cooling](#), click on the respective video links.

GF Casting Solutions

Strategy and solutions

Governments around the world are taking action to limit CO₂ emissions, including those from the transportation sector. In conjunction with this, numerous carmakers have communicated ambitious targets of their own and also extended their expectations to their supply chains.² The development of lightweight and alternative drive systems will play an important role in realizing these objectives. Few, lighter components lowers vehicles' weight, which is among the most important factors for reducing their fuel consumption and emissions during the usage.

GF Casting Solutions continuously sharpens its innovation focus to develop new and optimally suited materials and new technologies, such as multi-material design. It also develops cutting-edge production processes, thereby ensuring that its solutions have the highest level of functional integration. Its most successful projects have resulted in casting components that are lighter and more cost-effective — two distinct benefits for customers.

Despite the pandemic, GF Casting Solutions also launched or enhanced several focus projects in 2020. A new [R&D project in cooperation with Microsoft Switzerland](#) has the goal of continuously optimizing the die-casting process in terms of material and energy efficiency. The project's research team developed a method that makes it possible to reduce the overall scrap generated during production and to minimize energy usage. The process, which is being tested and refined at one of GF Casting Solutions' sites, is scheduled to be rolled out to other production sites in 2022.

Over the next few years, most of GF's automotive customers will dramatically increase the proportion of fully electric, hybrid-electric, and, to a lesser degree, fuel-cell vehicles in their fleet. All of these vehicles will need batteries of different sizes. As part of GF Casting Solutions' effort to meet this need, in 2020, its central R&D department [presented a new demonstrator for a flexible modular vehicle battery housing](#). The idea is to offer a basic, light, and safe housing structure (with integrated functions such as cooling) that can be used for fully electric and hybrid electric vehicles. Discussions are ongoing with a number of carmakers for implementation.



Illustration of GF's novel flexible modular battery housing

GF Casting Solutions, which places a strong emphasis on ready-to-mount solutions, is closely involved in the development of new vehicles at an early stage of their design. The auto industry is increasingly embracing alternative powertrains and e-mobility. A big challenge in this segment is to reduce the weight of heavy batteries. GF's expertise in lightweight technology will enable it to play a key role in meeting this challenge. For example, the Division can provide aluminum and magnesium high-pressure die-casting for crash-relevant components in a lightweight design. It has partnerships with a number of well-known customers to develop components for electric vehicles, some of which are already in series production.

GF Machining Solutions

Strategy and solutions

GF Machining Solutions emphasizes quality, innovation, and customer experience in order to differentiate itself from competitors. Its vision is to set the standard for intelligent machining solutions and to be a trusted partner of the global precision machining industry during all phases of a machine's lifecycle. It focuses on product reliability to avoid unplanned interruptions and on support for customers in significantly improving the efficiency of their manufacturing operations. Increased machine automation, digitization, connectivity, and intelligence are key aspects here.

GF Machining Solutions works closely with its customers from the pre-sales production concept phase to the end of the equipment's lifecycle, at which point the used systems are refurbished. GF's introduction of remote access solutions enables it to offer faster response times and remote maintenance capabilities.

Ensuring machines' energy efficiency is becoming an intrinsic quality expectation and is of increasing interest to regulatory agencies worldwide. Consequently, GF Machining Solutions works continually to develop solutions that will enable customers to use less energy to produce their components. A range of machine models have energy management solutions (such as the Econowatt feature) allowing systems to shut down during idle periods and auxiliary equipment to switch on.

GF Machining Solutions aims to develop groundbreaking solutions that reduce environmental impact and promote a circular economy. For example, the Step-Tec segment started to re-use wooden motor spindle packaging by optimizing related processes. When returned, the boxes are verified, repaired, cleaned, and reused. In the EDM division, used copper and brass wires from electrical discharge machining are **reused to make new wires**, which are supplied to customers.

GF Machining Solutions has also developed a variety of other features that reduce its machines' environmental footprint. One of them is **automated machine calibration (AMC)** on milling machines. Changes in a customer's production environment (like temperature) cause deviations from a milling machine's original calibration. Recalibrating a milling machine is a complex task, usually requiring a lot of time and skills. AMC makes it possible to calibrate the machine's kinematics within just ten minutes, which saves energy. Additionally, the solution allows for this to be done remotely, which eliminates the need for a technician to travel, thus reducing CO₂ emissions and costs for the customer. AMC's ergonomic interface is easy to use and requires little training.

In line with **Strategy 2025**, all of the Division's new machines will be developed with the aim of increasing their environmental benefits across their entire lifecycle.

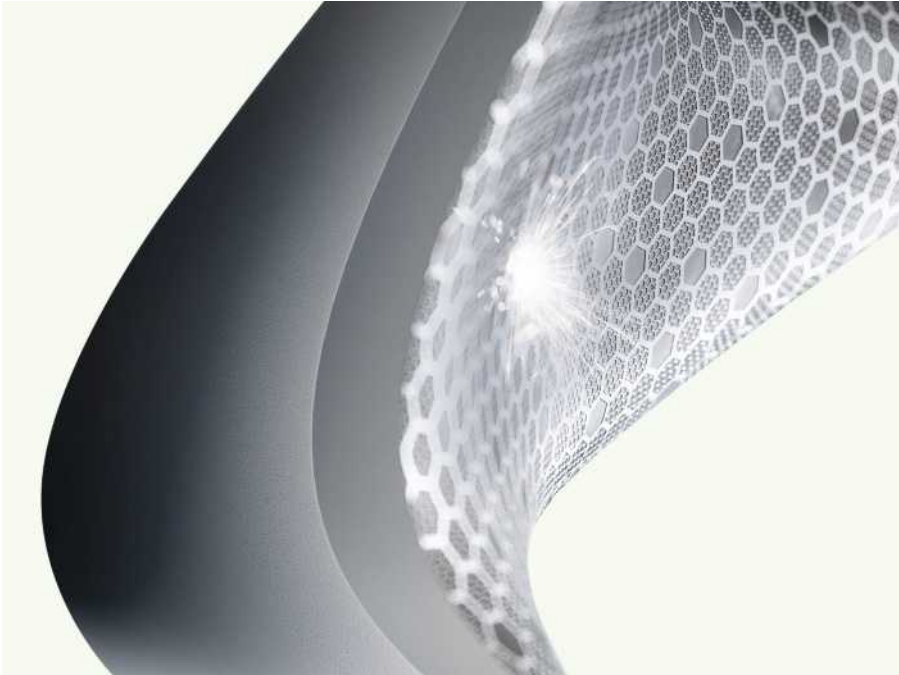


Illustration of GF's laser texturing capabilities

¹ Griffiths-Sattenspiel, Bevan and Wilson, Wendy, *The Carbon Footprint Of Water*, 2009, p. 2, www.solaripedia.com/files/1332.
² Examples include Daimler's "Ambition 2039" plan and Volkswagen's requirements for suppliers.



The valve against global water losses

Large amounts of water are consistently lost through leaks in urban water distribution networks. GF's NeoFlow polymer pressure-regulating valve (PRV) is an innovative solution that helps strengthen aging water infrastructures by protecting pipes against bursting, while also significantly reducing energy consumption, CO₂ emissions, and labor costs.

Freshwater accounts for only 2.5% of the Earth's total water supply. More than two-thirds is contained in glaciers and permanent snow cover or ice.¹ Worldwide, over half of the planet's 7.8 billion inhabitants do not have enough water for at least one month of the year. Water is a scarce resource, and GF's solutions are helping address the challenge of how to transport it safely and sustainably to an ever-growing population.

Non-revenue water is the difference between the water that enters a distribution system and the amount of water that is billed to consumers. According to Liemberger/Wyatt, between 20 to 50% of water in distribution infrastructures is lost due to leakages.² Non-revenue water has a significant economic impact, with an estimated 39 billion US dollars lost globally each year.³



Marco Alberti, Sales Manager at GF Piping Systems Italy, checking twin pressure-regulating valves to control downstream pressure regulation.

Up to 63% reduction in pipe bursts

In Italy, an average of around 37% of water is lost during transportation.⁴ One of GF's customers, IRETI, which supplies over 2.8 million customers in nearly 300 municipalities in northwestern Italy, is tackling the problem at the source.

GF introduced NeoFlow, a polymer pressure-regulating valve, to the company two years ago in Reggio Emilia. The experts from IRETI were particularly impressed by its simplicity and innovative design. They later participated in a pilot at an independent, certified laboratory in Nantes (France), which enabled them to observe the product in action. IRETI has now been using the GF pressure valves in the water network for one year.



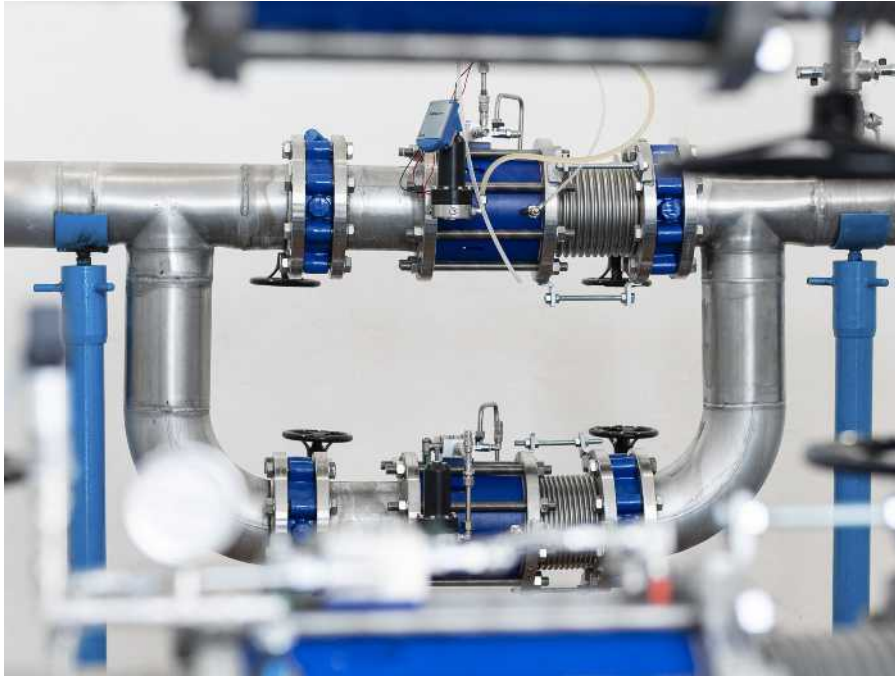
Antonio Gualtieri (L), Technical Manager for Water Leakage Detection at IRETI, and Marco Alberti fine-tuning the pressure regulating valve.

Olivier Narbey, Senior Business Development Manager at GF Piping Systems, explains how a pressure valve can prevent water loss. “The global population has grown rapidly, but the water systems often cannot keep up with this development and, in many places, were not designed for the volumes of water that now flow through them. As a result, the pipes eventually burst at some point,” he says.

Narbey is an advocate of modernizing water networks through pressure management – and this is where NeoFlow comes into play. “You have to think of it as a kind of anti-aging treatment for water networks. NeoFlow regulates flow rates, thus limiting unnecessary stress on infrastructure,” he says. Antonio Gualtieri, Technical Manager for Water Leakage Detection at IRETI, confirms its effectiveness. “Thanks to pressure management, we have been able to achieve a 63% reduction in pipe bursts.”

“Pressure management with NeoFlow is like an anti-aging treatment for water networks.”

Olivier Narbey, Senior Business Development Manager, GF Piping Systems



An underground water reservoir near the University of Parma (Italy) is equipped with GF pressure-regulating valves and supplies a large district.

Smaller environmental footprint than metal products

Valves made of polymer have a smaller environmental footprint than metal products, according to Narbey. They have a longer operational lifetime than metal valves and are practically maintenance-free. Because metal corrodes, metal valves need regular maintenance, which requires resources, expertise, and energy, he says.

In addition, NeoFlow is five times more compact than a standard metal pressure valve and can be installed in a confined space by one person. Retrofitting with a metal pressure-regulating valve requires more than one person. "A metal product is up to nine times heavier than one made of polymer. Therefore, a lot more energy is required to transport it to the site, resulting in higher CO₂ emissions," Narbey adds.

IRETI, one of the Italian Iren Group's companies, specializes in the distribution of water, electricity, and gas. It provides an integrated water service in the areas of water supply, sewerage, and wastewater treatment for nearly 300 municipalities in Emilia Romagna, Liguria, and Piedmont. Through a distribution system of over 23'000 kilometers, IRETI distributes more than 290 million m³ of water per year to 2.8 million customers.

“We hope to see more products that are as reliable as this one.”

How does a pressure management system benefit IRETI?

With fewer pipes bursting, we reduce water losses and resource consumption. The operational lifetime of the pipes increases, and at the same time, there is less need for maintenance, helping us to devote more time to finding leaks.

What are the biggest challenges that pressure management systems pose for water networks?

The challenges depend largely on the type of water distribution infrastructure and where the pressure valves are installed. One of the biggest challenges is the existence of high hydraulic pressure – the difference in water volume at the inlet and outlet. Another challenge is rapid changes in consumption and the associated pressure instability.

What advice would you give water utility companies looking to design and implement a new pressure management project?

The first thing is to identify an area of the network where frequent pipe bursts occur. They should then form what we call a “district”, which means cutting off that section of the network and installing pressure-regulating and measuring devices at the point of entry. GF has proven to be an excellent supplier of high-quality products in this area, and we hope to see more products that are as innovative and, above all, as reliable as this one.



Antonio Gualtieri, technical manager for water leakage detection at IRETI.

¹ Food and Agriculture Organization of the United Nations (FAO): AQUASTAT (10/2016).

² Liemberger, Roland and Wyatt, Alan, “*Quantifying the global non-revenue water problem*”, 2018.

³ *ibid.*

⁴ Utilitalia – Istat. <https://www.istat.it/it/archivio/234556>, 2020.



GF's lightweight solution for lower CO₂ emissions

The future of mobility is electric and largely CO₂-free. French car manufacturer Renault has therefore set the target of achieving a 50% reduction in CO₂ emissions-in-use in its vehicle fleet by 2030 in Europe. GF Casting Solutions is supporting the efforts of this important customer with a new light metal battery housing for two hybrid vehicle models.

In recent years, the strong global demand for electric cars has led to an increased need for lightweight vehicle parts. GF Casting Solutions has been successful in this market for years with its electric motor and battery housings, as well as lightweight structural components. It is a partner to many car manufacturers around the globe, including Renault.

To achieve its fleet targets for reducing CO₂ emissions, the French company has been working with GF Casting Solutions also in the area of light metal die-casting since 2015. In 2013, the carmaker set the target of achieving a 25% reduction in its vehicles' CO₂ emissions during use by 2022 and a 50% reduction by 2030 in Europe.



According to Christophe Buch (l.), Key Account Manager for Renault, and Christian Graf (r.), Team Lead Validation, GF was able to not only offer Renault the cast design for the battery housing but also successfully integrated features such as cooling circuits.

In total, Renault now offers five fully electric cars and four hybrid vehicles in addition to its models with combustion engines. Since 2020, its hybrid models have included the Mégane estate e-tech and Captur e-tech, both equipped with a combustion engine and an electric motor. GF Casting Solutions developed a die-cast battery housing together with Renault for the power train of these two vehicles.

The carmaker's requirements were demanding. At the end of the development process, which lasted several years, the company wanted to produce a lightweight and very stable casting made of an aluminum alloy with an integrated cooling circuit that was to go into series production. The conventional process required assembly of more than 100 individual parts such as frames, profiles, or connection points. In this case, however, everything was to be integrated into a single part.

Less energy consumption

"GF Casting Solutions is always striving to offer customers new cost-efficient and sustainable solutions. This new challenge gave us additional motivation in our cooperation," says Christophe Buch, Key Account Manager for Renault at GF Casting Solutions. GF has been a partner of Renault for 30 years, but in the past, the focus was mainly on cast iron components. "We see the production of the battery housing for Renault as an opportunity to also showcase our capabilities for electric vehicles in the light metal segment."

GF Casting Solutions' R&D department in Schaffhausen (Switzerland) started the battery housing project a few years ago. The idea for a single-component, lightweight casting was initially developed with Renault in a joint workshop. "In addition to developing a design that meets the customer's requirements, we also reduced the number of assembly steps, simplifying the process and avoiding labor-intensive joining and post-processes such as welding and milling," says Christian Graf, Team Lead Validation at GF Casting Solutions.

The integrated cooling system posed a particular challenge during the development phase. Batteries in hybrid vehicles have high thermal characteristics, and must operate within a controlled temperature range. "Thanks to our geometrically optimized die casting and the ensuing joining processes, we were able to meet all the customer's requirements," says Christian Graf.

Team effort for one challenge

The launch of the project marked the beginning of a team effort between GF Casting Solutions and Renault. The result of the development work is a battery housing made of an aluminum alloy measuring 1.00 x 0.55 x 0.15 meters and weighing around 15 kilograms, including cooling circuit covers. The GF Casting Solutions plant in Altenmarkt (Austria) has been mass-producing the parts since 2020. During production, GF forgoes the use of a heat treatment furnace, which in turn saves energy.

Since 2020, the Mégane estate e-tech and Captur e-tech models have been rolling off Renault's production line in Spain. According to the manufacturer, the vehicles emit about 75 percent less CO₂ per 100 kilometers than identical models with combustion engines. GF Casting Solutions has thus made an important contribution to the automaker's CO₂ reduction efforts.

“Renault is an important customer for GF Casting Solutions with a lot of growth potential, and this project is a milestone in terms of our development in the field of new e-mobility components.”

Christophe Buch, Key Account Manager Renault at GF Casting Solutions



“We see the production of the battery housing for Renault as an opportunity to also showcase our capabilities for electric vehicles in the light metal segment,” says Key Account Manager Christophe Buch.



Christian Graf (l.) and Christophe Buch (r.) are observing a model vehicle in GF Casting Solutions' new showroom. The battery housing for Renault is inside it.



The result of GF Casting Solutions' four years of development work for Renault is the battery housing made of an aluminum alloy measuring 1.00 x 0.55 x 0.15 meters and weighing around 15 kilograms, including cooling circuit covers.



GF Casting Solutions inaugurated its new showroom in Schaffhausen (Switzerland) in May 2021.

GF site in Altenmarkt

In [Altenmarkt](#), about 150 kilometers southwest of Vienna, GF Casting Solutions manufactures lightweight vehicle components using an aluminum and magnesium die-casting process. The site, which employs around 600 people, recently showed encouraging results in terms of energy efficiency: the electricity consumed in Altenmarkt comes mainly from renewable energy sources that cover 64 percent of the site's energy needs. In 2020, Altenmarkt exceeded its targets for increasing energy efficiency and reducing GHG intensity. Measures that made these results possible included changing the energy source for the operation of the aluminum-melting furnace and for heating.

Forgoing heat treatment saves energy

What was particularly challenging when developing this battery housing?

Christian Graf: Many complex processes came together during the development stage – from component development, design and optimization, prototype production, and process development for casting and assembly, to various tests. Added to this was the ongoing coordination with the customer. It was an intensive team effort within R&D as well as with colleagues from Key Account Management and production.

What sets GF Casting Solutions apart in such a situation?

Christophe Buch: GF has the necessary production experience in lightweight construction for large-scale parts such as cross-car beams, rear side members, and battery housings. In addition, we were able to not only offer Renault the cast design for the battery housing, but also successfully integrated features such as cooling circuits and connection points for surrounding body and structure components into the casting.

What differentiates GF Casting Solutions' castings in terms of innovation and sustainability?

Christian Graf: We always work together with the customer to find a solution and gradually approach the goal. In the process, we simulate the stress on the component in relation to their application and casting processes to offer the ideal casting solution. The production of the battery housing can dispense with heat treatment due to the component design and the properties of the aluminum alloy, which saves energy. The castings are also fully recyclable. In addition, the Altenmarkt production site has been operating with electricity from predominantly renewable energy sources since 2020.



Christophe Buch, Key Account Manager Renault at GF Casting Solutions



Christian Graf, Team Lead Validation at GF Casting Solutions



A switch to eco-friendly technology in China

For POLE, an up-and-coming customer in Kunshan (China), GF Machining Solutions' high-precision laser technology is an asset in many ways: The company is impressing its customers by greatly increasing the efficiency of its production, and protecting people and the environment in the process.

2020 marked a technological turning point in POLE's three years of operations. Whereas it used to finish molds using a cumbersome manual chemical etching process, it now increasingly uses state-of-the-art laser texturing machines from GF Machining Solutions. To date, this has reduced the use of corrosive chemicals by around 50% – and this figure continues to grow. POLE, a mid-sized company in the precision mold-making sector, has three production sites in eastern China with a staff of around 40.

POLE's customers use its molds mainly to manufacture laptops and laptop accessories. These include reputable, top international brands in the ICT industry – and their standards are correspondingly high. Customers expect a wide variety of texturing, as well as absolute precision and homogeneity.



Johnson Chen (l.), Head of Market Region China at GF Machining Solutions, and Jing An Xu (r.), Director of POLE, take a closer look at a large TV shell. The molds used to produce the TV shells are processed using GF Machining Solutions' laser machines.

"In recent years, market requirements in terms of the products' design quality have increased drastically," says Johnson Chen, Head of the China market region at GF. "At the same time, the government's call for environmental protection has grown ever more insistent." This inspired Jing An Xu, Director of POLE, to research possible solutions, as he recognized that the company would no longer be able to keep up without state-of-the-art laser technology. POLE purchased its first type AgieCharmilles Laser P 600 U machine from GF Machining Solutions in 2020. Since then, it has ordered three premium type Laser S 1000 Us. Jing An Xu firmly believes in GF: "GF offers strong support for the delivery of its laser machines, which has allowed me to start production rapidly and exploit market opportunities." This is possible in particular thanks to the new China Advanced Manufacturing team at GF Machining Solutions that provides customers with optimal and efficient on-site technical support.

“GF’s unique technical developments enable POLE to produce sustainably and expand its business.”

Jing An Xu, Director of POLE

Traditional production involves two burdensome work processes in particular. One is chemical etching, which is strenuous for workers and demands the utmost concentration. The other is the processing and work with finer textures that require greater precision and the use of even more chemicals. Subsequent cleaning results in etching waste that contains chemical pollutants. Switching production to laser texturing offers obvious advantages in this regard: Chemical etching is completely replaced, and there are no waste products.

“I am extremely impressed with GF’s laser technology, which is able to rapidly and reliably create all types of textures – and do so in an entirely clean manner, without liquid waste, dust or chips. In addition, laser texturing allows for considerably more energy-efficient production, which lowers costs and significantly reduces CO₂ emissions,” says Xu.

GF Machining Solutions entered the Chinese market with its laser technology around ten years ago and has since then made a name for itself as the leading provider in the country. Today, POLE is one of its most important customers in China. “POLE is a forward-looking company. They value us as a reliable partner, which is why they decided to invest in so many machines in a short amount of time. We provide them with the best-possible support in order to ensure their success,” says Chen. POLE has already commissioned six more laser-texturing machines for 2023 to meet rising demand. This is also good news for the environment.



Johnson Chen, Jikui Fan, Sales Engineer at GF Machining Solutions, and Jing An Xu (f.l.t.r.) inspect the texture of a laptop case. GF Machining Solutions’ laser machines allow for a highly structured texture.



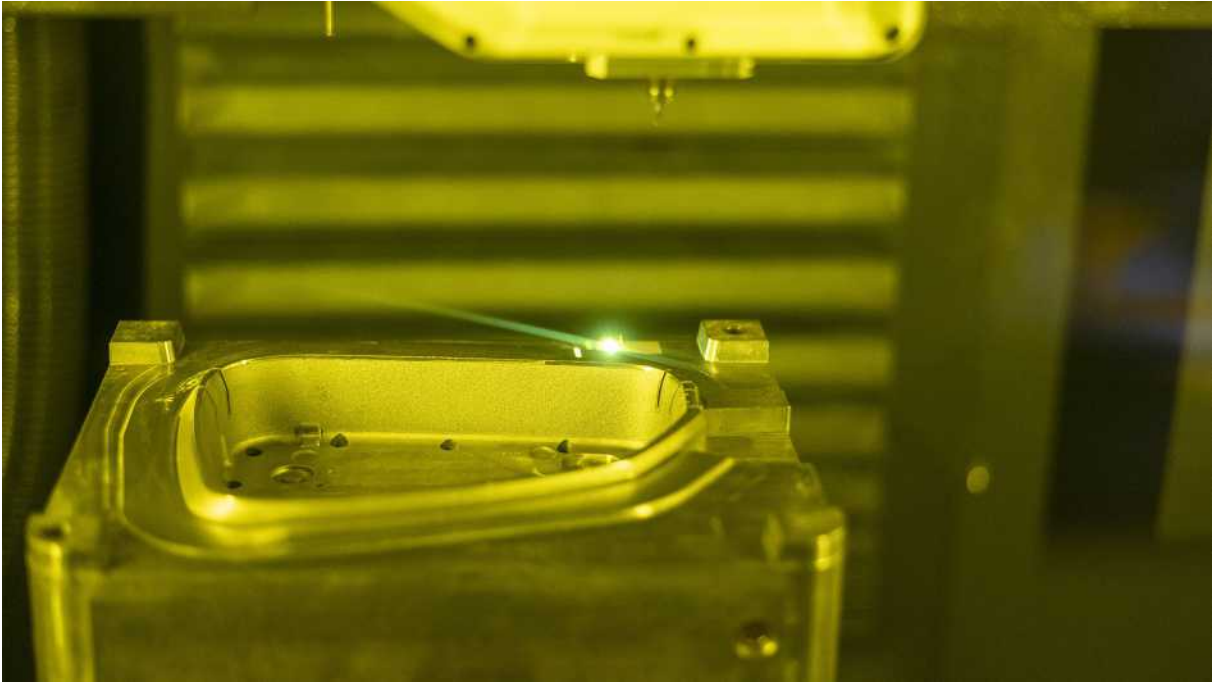
To date, laser texturing has already reduced the use of corrosive chemicals by around 50% at POLE.



Jing An Xu (r.) and his colleague carefully observe the textures of an auto part and discuss the laser processing.



Loading of a laptop mold on the machine table of AgieCharmilles Laser S 1000 U. The laser texturing process starts from here.



"Laser texturing will completely replace traditional chemical etching in the next three to five years", says Jing An Xu, Director of POLE.



GF's laser technology creates all types of textures and reduces the operations' environmental impact.



Johnson Chen, Jikui Fan and Jing An Xu (f.l.t.r.) regularly exchange views about technology, market trends and business developments.

GF Machining Solutions' commitment to POLE is in line with the GF Strategy 2025: the division focuses on customers' specific problems and aims to meet their sophisticated automation and precision needs proactively, while also addressing sustainability issues. In the case of the latter, the emphasis is on durable applications that replace harmful chemicals and perform in an energy-efficient manner.

Strong in competition thanks to new technology

Mr. Xu, what does sustainability mean to you?

Sustainability is a very important topic that has gained global attention. It is the future. Everyone is responsible for taking it seriously, be it in a business or personal context.

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

GF is not just a supplier for me, but also a reliable partner. It is a very well-known, innovative and passionate brand in the precision industry. GF's laser machines are the most in-demand products in the market and they help us grow sustainably.

In your view, what does the future of the laser texturing business look like?

Laser texturing will completely replace traditional chemical etching in the next three to five years. We are confident that we have found a strong partner in GF who will allow us to keep pace with new technologies and with our competitors.



Jing An Xu, Director of POLE

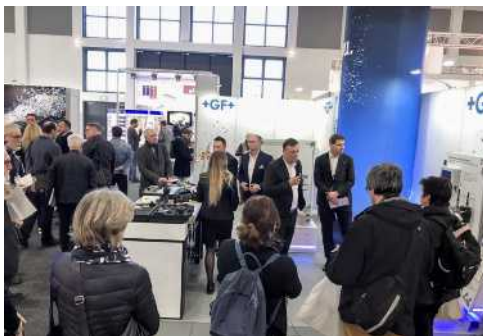
Stakeholder dialogue

GF maintains a continuous dialogue with its internal and external stakeholders, enabling key issues to be proactively recognized and resolved. This exchange is promoted through a range of activities, events, and initiatives.



Employees

GF's more than 14'118 employees in 34 countries contribute to sustainability in a variety of ways, such as designing social and environmental considerations into products and solutions, conserving natural resources, and embracing safe and healthy work practices.



Customers

GF conducts sustainability workshops with customers in key market segments to jointly develop innovative products, solutions, and services.

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



Investors

GF's CEO and CFO are in regular contact with investors – in person and virtually – at roadshows, events, meetings, and the GF Annual Shareholders' Meeting. They also maintain an active ESG dialogue with sustainability analysts and stewardship teams.

In 2020, GF intensified its governance dialogue with shareholders and proxy advisors. The Corporation had around 100 meetings with investors representing more than one third of the share capital. The Chairman of the Board led more than 25 virtual and in-person meetings with a focus on ESG matters. The Independent Lead Director, the Chairwoman of the Compensation Committee, and the Head of Investor Relations/Sustainability attended these meetings.



Suppliers

Long-term successful partnerships with GF's procurement and logistics partners are essential for business continuity. GF places great emphasis on ensuring that they meet its own standards for sustainability and ethics.

GF regards its suppliers as crucial partners in enhancing the environmental efficiency of its production equipment and other aspects of its operations and in minimizing the social and environmental risks along its value chain.



Universities and research institutes

GF maintains close contact with universities and research institutes. Collaboration takes several forms. The Corporation offers internships and junior work opportunities to students at universities and technical institutes. It also partners with academic institutions on specific projects. For example, in 2020, GF entered into an agreement with Oxford Flow, based in Oxford (UK), to develop innovative products and solutions that provide new levels of performance for natural gas transmission, water distribution, and process industries.



Regulators

GF operates in many countries and jurisdictions and complies fully with their respective laws and regulations. To facilitate this, GF is a member of a number of chambers of commerce.



Communities

GF supports and promotes cultural and social programs in the communities where it operates. More generally, it aims to have an overall positive impact on them.



Media and general public

GF regularly publishes media releases on relevant topics and maintains an ongoing exchange of information with journalists. GF supplements media conferences with its active presence in social media channels like [Twitter](#), [Facebook](#), [YouTube](#), [LinkedIn](#), and [Xing](#).



Industry associations and NGOs

GF is actively involved in a variety of national and international industry associations and trade organizations. Its Clean Water Foundation supports projects focused on improving infrastructure for water filtration and water distribution in rural communities and for hospitals. Water Mission, a non-profit organization in the USA is one of its trusted partners.

The Corporation has endorsed the [UN Global Compact's](#) ten principles for human rights, labor, environment, and anti-corruption since 2015.

Good governance

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

Business conduct

GF's business conduct and corporate strategy are founded on [its values](#) and its purpose, "Becoming better every day – since 1802". They shape and embody the philosophy and spirit of GF in its daily work for the benefit of its stakeholders. GF's purpose expresses the organization's ambition and motivation to continually improve for the benefit of the Corporation, the environment, and most of all GF's customers.

Performance is about speed and excellence.



Learning is about having an open mind.



Caring is about being part of a team.



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

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

Corporate Governance

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

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

The Executive Committee addresses all issues of relevance to the company, makes decisions within its purview, and submits proposals to the Board of Directors. The Chief Executive Officer and the Heads of Corporate Development and Corporate Finance & Controlling make up the Corporate Center and support the Board of Directors in meeting its responsibilities.¹

In the interests of its stakeholders, the Georg Fischer Corporation, which is organized in accordance with Swiss law, fulfills all obligations under the guidelines of the Swiss Stock Exchange with regard to information on corporate governance. For detailed information, including but not limited to the [tasks of each Board Committee](#) and the [Compensation Report](#), please see the respective sections in the Annual Report 2020.

Public policy

GF is a member of industry-relevant organizations in its home base, such as Economiesuisse and Swissmem. They represent the Corporation's interests in political and economic matters. Annual membership fees in these organizations amount to less than CHF 0.1 million. In the year under review, no contributions were made to any political parties or individual politicians.

Risk management

At GF, enterprise risk management is a fully integrated process and systematically applied at all levels of the Corporation. Twice a year, the Corporation, the three divisions, and all significant corporate companies prepare a risk map including the key risks with regard to strategy, markets, operations, management, resources, financials, and sustainability. The likelihood of a risk's occurrence is assigned to one of four categories (not likely, possible, probable, and likely). Where possible and appropriate, the risks identified are subject to a quantifiable assessment that also factors in countermeasures that have been taken. Alternatively, a qualitative risk assessment is conducted (minor, major, critical, and catastrophic). The focus in 2020 was mainly on the risks posed by the COVID-19 pandemic and on the Corporation's systematic efforts to protect employees, maintain business continuity, and continue supplying customers. In addition, various actions were taken to safeguard GF from cyberattacks.

The Head of the Service Center Risk Management & Tax acts as the Chief Risk Officer (CRO) and, in this function, reports directly to GF's CEO. A non-executive Risk Officer in each division supports the CRO. Led by the CRO, the Corporate Risk Council consists of the Risk Officers, the Corporate Compliance Officer (CCO), the Heads of Internal Audit, Corporate Sustainability, and Corporate Planning, as well as company experts in Corporate Risk Management. The council met twice in 2020. In addition, the CRO conducted workshops with the management of the three divisions as well as with the Executive Committee to analyze the risk situation, to discuss measures to mitigate risks, and to define the current top risks for each unit.

In September 2020, the CRO conducted a risk management workshop with the Board of Directors at which the most significant risks were identified and compared with the Executive Committee's risk assessment. The workshop's findings (including the definition of top risks as well as the determination of mitigation measures) were the basis for the risk report approved by the Board in December 2020. In addition, the Executive Committee and the Board approved the Corporate Risk Council's proposal to make certain amendments to the current reporting process. These include changing the frequency of risk reporting from twice to once a year and focusing on risk maps prepared at the levels of the Corporation, the divisions, the sales regions, and the major production plants instead of all corporate companies. This will increase the quality of risk reporting and emphasize the most important risks GF faces.

→ [More information on Risk Management](#)

Corporate compliance

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

In addition, employees are required (and business partners are encouraged) to report potential misconduct to the CCO by calling him or writing to a special compliance e-mail address, contacting the Corporate Legal Department in Schaffhausen (Switzerland), or sending the report anonymously. A corporate instruction delineates the procedure that employees follow for reporting such violations and governs the conduct of persons receiving the report. Proven misconduct is subject to appropriate sanctions. In 2021, GF will replace its current whistleblowing system with an ISO 27001-certified solution that will enable web-based submission of reports and provide comprehensive protection of the whistleblower's identity in line with the respective EU Directive. This system will be accessible to all GF employees and to third parties.

Compliance training is carried out under the direction of the CCO at the corporate companies by means of e-learning or in person. Supported by the CCO, the Executive Committee determines the focus topics. In 2020, over 4'700 in-house compliance training sessions included:

- an e-learning program on Anticorruption/Anti-bribery
- an e-learning program on Antitrust/Competition Law
- an e-learning program on Export Controls/Sanctions
- an e-learning program on Data Privacy (including the General Data Protection Regulation, or GDPR)
- on-site training at companies in the EU, China, and the United States, and for specific employees with compliance roles.

Training is ongoing. Employees are required to participate when joining GF and then every three years. In addition, in 2017, the Corporate Legal Department began offering one-on-one meetings to senior managers visiting Schaffhausen from other locations in order to provide them, on request, with general as well as specific legal advice and training. Only three senior managers were able to receive such training in 2020 owing to pandemic-related travel restrictions.

GF has adopted the following measures since 2015 to enhance its compliance function:

- Consistent implementation of the "GF Compliance Agreement for Intermediaries" and of an "Intermediary Check" to globally secure and prove compliance of GF business partners who act on behalf of or in the interests of GF companies.
- Implementation of a web-based system to avoid conducting business with sanctioned organizations and individuals (ongoing process).
- Introduction of a "Compliance Agent" function to identify and assess compliance risks, to carry out initial cursory internal compliance controls on-site, and to support the identification and implementation of appropriate new measures.

→ [More information on Corporate Compliance](#)

Tax management

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

- following all applicable laws and regulations relating to its tax activities
- maintaining a transparent and honest relationship with the tax authorities based on collaboration and integrity

- applying diligence and care in its management of the processes and procedures by which all tax related activities are undertaken, and ensuring that the corporation's tax governance is appropriate
- using incentives and reliefs to minimize the tax cost of conducting its business whilst ensuring that these reliefs are not used for purposes, which 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 Tax Policy](#)

Human rights

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

The GF Corporate Human Rights Policy summarizes the foundation on which GF bases daily interactions with its stakeholders.

→ [GF Corporate Human Rights Policy](#)

Environmental protection

GF is committed to protecting the environment and using natural resources carefully and efficiently. To reduce its impact on the environment, GF aims to decouple its resource consumption from growth and is committed to finding opportunities to continuously improve its environmental management processes. The Corporation expects the same of its suppliers as well.

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

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

→ [GF Corporate Environmental Management Policy](#)

→ [GF Corporate E-mobility Policy](#)

Product and service information and labeling

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

- enclosing the CE and RoHS labels, when relevant²
- 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).³

→ [GF Corporate Conflict Minerals Policy](#)

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

¹ The [Annual Report 2020](#) contains more detailed information about GF's organization.

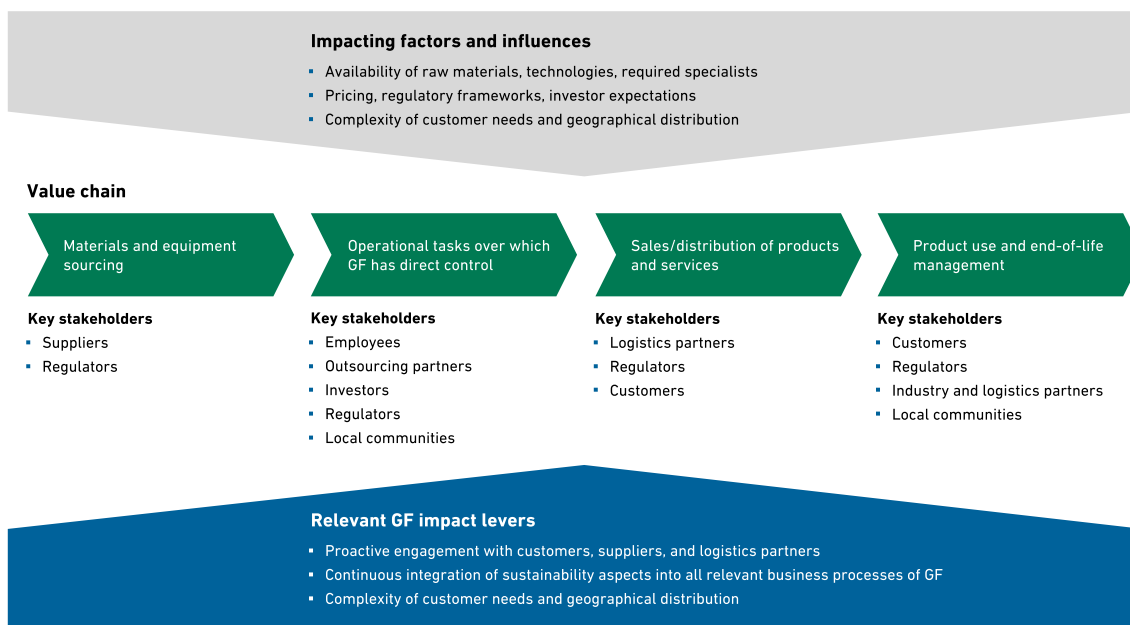
² Conformité Européenne (CE) indicate conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). RoHS indicates conformity with the EU's Restriction of Hazardous Substances Directive.

³ 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.

Value chain

Sustainability has long been integral to GF’s corporate culture and business. GF acknowledges that its role and responsibility in society extend beyond its business operations and include a broad range of stakeholders. GF addresses the wide spectrum of sustainability topics in all steps of its value chain. The Corporation and the three divisions contribute to various Sustainable Development Goals (SDGs).

GF’s value chain at a glance



Materials and equipment sourcing

GF’s decisions in designing solutions for its customers have direct implications for its supply chain, from a social and environmental perspective. GF recognizes this and works to increase transparency in its complex purchasing network and to engage with its business partners to ensure adherence to GF’s standards and expectations.

Operational tasks over which GF has direct control

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

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

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

Sales/distribution of products and services

Sustainability is engineered into the solutions GF designs for its customers. GF continuously engages with customers to understand their needs, to meet and exceed their expectations for suppliers' social and environmental performance, and strives to optimize its logistics processes to be more convenient for customers and environmentally friendlier.

In the year under review, GF's management tasked the Corporate Sustainability team with conducting a comprehensive assessment of the company's Scope 3 emissions. These consist of the GHG emissions attributable to GF's supply chain, its products in their use phase, and product distribution. The assessment will offer insights into how to design and distribute GF's products and solutions in ways that reduce these emissions.

Product use and end-of-life management

GF's products add value for the customers by reducing their pain points and meeting their sustainability needs during the use phase. At the same time, the Corporation is also continuously working on incorporating considerations for what happens with GF's products at the end of their useful life into its R&D processes.

[→ More information on GF's products and solutions](#)

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



Topics of material importance

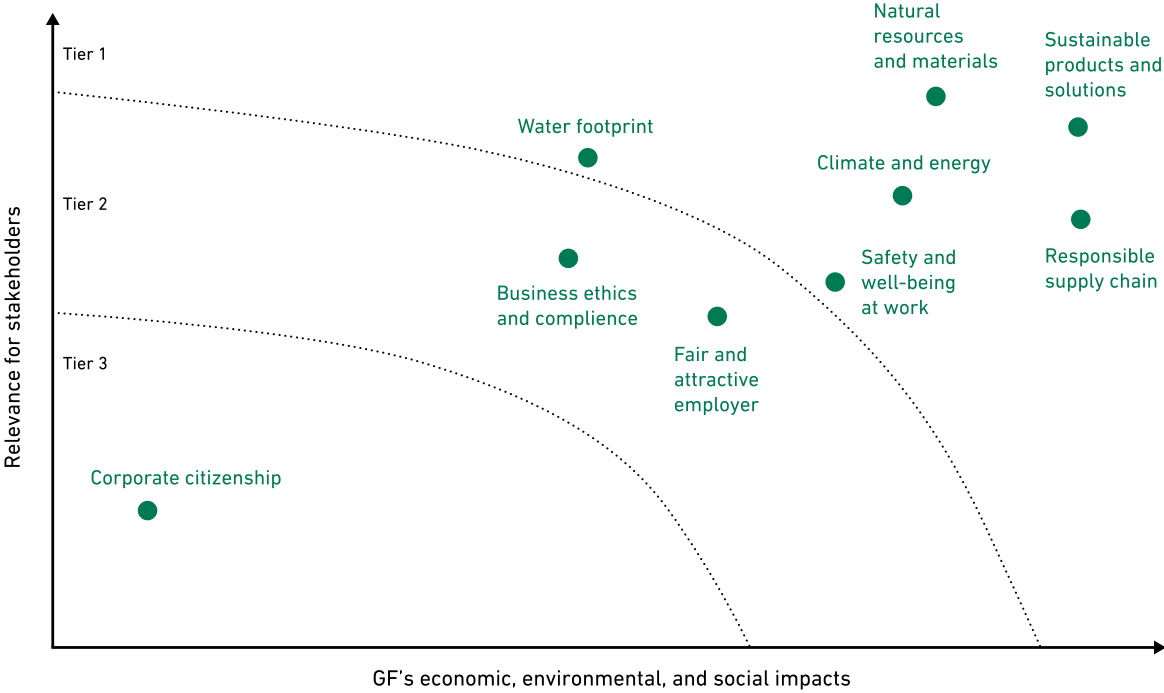
GF's activities in 2020 focused on the measures defined in the [Strategy 2020](#) and the [Sustainability Targets 2020](#). In 2019, GF reevaluated the importance of topics identified as relevant for its operations in its previous materiality assessment. It did this because its five-year strategy cycle was drawing to a close and as part of the preparations for its next strategy cycle (2021-2025). The reevaluation resulted in a new materiality matrix, which the Executive Committee approved in early 2020. The revised overview of GF's main material topics informed discussions at the Corporation throughout 2020 and defined the reference points for the Corporation's Sustainability Framework for the next five years.

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

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

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

The review identified a number of topics in the previous materiality matrix (innovation, customer satisfaction, compliance, financial stability, and human rights) that are crucial for GF's overall ability to operate and its business success. These topics were subsumed under GF's existing material topics and re-designated as "aspects." They are described and explained in the table below.



Areas of high materiality

Topic	Related aspects	Explanation for high materiality
Sustainable products and solutions	- Sustainable products	GF's product portfolio is its main direct impact on sustainable development. The design phase determines a product's environmental and social impacts during its life cycle. GF therefore considers it crucial to ensure that the entire life cycle is considered 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.
	- Circular economy in product R&D	
Sustainable products and solutions	- Innovation	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 positive impact on sustainability by working closely with their customers.
	- Customer relationship management	
	- Product and customer safety	
Sustainable products and solutions	- Product and customer safety	Product and consumer safety is integral to product development and 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.
	- Reuse of materials at GF's operations	
	- Waste reduction	
	- Biodiversity and land use	
Natural resources and materials	- Reuse of materials at GF's operations	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.
	- Waste reduction	
	- Biodiversity and land use	
Natural resources and materials	- Biodiversity and land use	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.
	- GHG emissions along the value chain	
	- Energy use in GF's operations	
	- Non-GHG emissions (such as SOx, NOx, PM, and VOCs) in GF's operations	
Climate and energy	- GHG emissions along the value chain	Energy consumption is one of the major sources of GHG emissions. Increasing concentrations of greenhouse gases in the atmosphere directly contribute to global warming. Climate change is many external stakeholders and regulators' biggest energy-related concern, and the international community is broadly committed to tackling its challenges. Being a global industrial company makes it essential for GF to understand, manage, and reduce the GHG emissions attributable to its operations, its supply chain, and customers' use of its products.
	- Energy use in GF's operations	
	- Non-GHG emissions (such as SOx, NOx, PM, and VOCs) in GF's operations	
Climate and energy	- Non-GHG emissions (such as SOx, NOx, PM, and VOCs) in GF's operations	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.
	- Supply chain management (social and environmental impacts)	
	- Integration of social and environmental topics into procurement processes	
Responsible supply chain	- Supply chain management (social and environmental impacts)	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.
	- Integration of social and environmental topics into procurement processes	
Responsible supply chain	- Human rights	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.
	- Occupational health and safety	
	- Ergonomic work environments	
Safety and well-being at work	- Occupational health and safety	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 a robust safety culture and, more broadly, to providing a work environment that promotes its employees' overall well-being.
	- Ergonomic work environments	
	- Mental health and well-being	

Water footprint	<ul style="list-style-type: none"> - Water consumption - Wastewater - Reducing water pollution 	<p>Although GF's operations are not water-intensive, water is used along its entire value chain. Water use is particularly high in some upstream processes of GF Piping Systems. Sustainable water management (access to clean water and leak-free water transport) are urgent societal issues that GF takes very seriously.</p> <p>GF's operations mainly use water in closed-loop cooling cycles. Quality is always controlled before water is returned to source.</p>
Fair and attractive employer	<ul style="list-style-type: none"> - Diversity, equal opportunity, and inclusion - Learning and development - Talent retention, attraction, and engagement - Employee work-life balance, flexible work arrangements - Working time and wages - Freedom of association 	<p>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.</p> <p>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.</p> <p>Demographic change, digitization 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.</p> <p>As a matter of course, GF ensures that its employees worldwide enjoy internationally recognized human rights.</p>
Business ethics and compliance	<ul style="list-style-type: none"> - Corporate governance - Business ethics and compliance - Risk and opportunity management - Business continuity - Data privacy and safety - Cyber security 	<p>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.</p> <p>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.</p> <p>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.</p> <p>Amid ongoing digitization, data availability, integrity, and security are crucial for GF's IT infrastructure and business systems.</p>
Corporate citizenship	<ul style="list-style-type: none"> - Community engagement - Local community impact 	<p>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.</p> <p>In general, GF's production sites pose no material risks for, or have adverse effects on, nearby communities. Their direct impact is therefore minimal.</p>

Sustainability management at GF

The ultimate responsibility for sustainability at GF resides with the Board of Directors. To facilitate progress along the strategic direction set by the members of the Board, a Sustainability Committee was established in 2020. Its chair is the Chairman of the Board of Directors. Its roles and responsibilities, which are defined in the Charter of the Nomination and Sustainability Committee, are published on the [GF website](#). The Sustainability Committee met twice in 2020.

The Executive Committee has operational responsibility for sustainability and for ensuring that GF meets its targets. Executive Committee members' [annual performance objectives](#) include several ESG targets, such as the systematic introduction of ecodesign, energy- and resource-efficient product development, the reduction of GHG emissions, the reduction of water consumption in water-scarce and water-stressed areas, as well as the reduction of the accident rate and severe accidents. Each member's individual targets are aligned with the divisions' respective strategic efforts and are cascaded into the organization.

Each department and division is responsible for integrating sustainability into GF's daily operations and processes. The Corporate Sustainability team works closely with the three divisions' sustainability teams to monitor the progress of the individual locations and business units toward their targets.

Corporate Sustainability also works closely with senior and executive managers to ensure a robust and aligned sustainability program. The team is part of the Corporate Finance function and reports to the Head of Investor Relations and Sustainability.

Sustainability program management

GF's strategic direction through year-end 2020 was guided by the [GF Strategy 2020](#) it set in 2015. This was accompanied by Sustainability Targets 2020 for GF's entire value chain. These targets and the corresponding activities reflected GF's main strategic focus areas. From 2021 onward, the [Sustainability Framework 2025](#) will guide GF's sustainability efforts during the next five-year strategy cycle.

→ [More information on GF's progress toward the Sustainability Targets 2020](#)

To help embed sustainability issues into GF's daily business, Corporate Sustainability communicates with GF employees through a variety of channels. For example, it circulates a global quarterly sustainability newsletter, conducts online events focusing on specific issues, and hosts an online discussion forum. In October 2020, GF conducted its annual regional sustainability conference, which brought together over 60 environmental and health and safety specialists as well as senior managers from GF's Americas locations. It was held online owing to the COVID-19 restrictions. Like previous regional conferences, the event aimed to foster knowledge sharing and generate momentum toward GF's targets for energy efficiency, waste management, and occupational safety.



Some of the participants of the 2020 GF Sustainability Conference – Americas

Future developments: outlook on 2021

GF continuously monitors international developments in sustainability to ensure that it integrates relevant issues into its business decisions and processes. GF intends to do this in three ways in 2021: by setting science-based targets for its environmental footprint, by aligning its product portfolio with the EU Taxonomy's six environmental objectives, and by making disclosures on the risks and opportunities presented by climate change.

Science-based targets

In line with the 2015 Paris Agreement, governments and businesses are working to find meaningful measures and practical solutions to limiting global warming to between "well-below 2° C" and 1.5° C above preindustrial levels. Urgent action is necessary: to achieve a low-carbon economy by 2050, as prescribed by most climate scientists, global GHG emissions need to be halved already by 2030.

GF believes it has a responsibility to do its part and therefore intends to set science-based targets for its business (Scopes 1 to 3 of GHG emissions) by 2022. For this purpose, it will use the official protocols of the [Science Based Targets initiative](#).

EU Taxonomy for sustainable activities

The European Commission set climate and energy targets for 2030 and designed an action plan — the [European Green Deal](#) — to make the EU economy climate-neutral by 2050. The Commission considers direct investments in sustainable projects and activities as essential for reaching these targets. In June 2020, the EU therefore issued the [EU Taxonomy Regulation](#), a framework with definitions of what type of economic activities qualify as environmentally sustainable.

GF intends to align its product portfolio with the EU Taxonomy. This process will begin in the second half of 2021.

Guidance of the Task Force on Climate-related Financial Disclosures

It has become apparent that climate change can have immediate as well as long-term disruptive effects on businesses around the world. Companies that fail to recognize climate-related risks and opportunities and adjust their operations accordingly are likely to become less competitive. As more investors become sustainability-oriented, these companies may also find it harder to access capital.

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

GF intends to follow **TCFD's guidance** and aims to include its first TCFD disclosures in its 2021 Annual Report, which it will release in early 2022.

Management performance objectives

GF is starting the new strategy cycle 2021–2025. In this context, the Compensation Committee undertook a review of the management's compensation system to ensure that it is still aligned with the strategy, shareholders' expectations, and market practice. The decision was made to adapt the compensation program as of financial year 2021.

The overall design of the Short-term incentive (STI) remains unchanged, including the target in percentage of the annual fixed base salary for the CEO and the other members of the Executive Committee.

ESG objectives will be a dedicated separate element in the STI with a weighting of 10% and will not be included in the individual objectives as in the past years. The objectives will be specifically set for the individual divisions and their sustainability strategy and roadmap.

Examples of these ESG-related objectives for 2021 include:

- **Environment:** Definition of measures to reduce GHG emissions in line with science-based targets and further integration of sustainability in production technology process development;
- **Social:** Reduction of accident rate and severe accidents, continuation of the Zero Risk campaign;¹
- **Governance:** Development of a sustainability roadmap in context of the Strategy 2025 for the individual area of responsibility, including findings based on the recommendation of the TCFD.

¹ Details about the Zero Risk campaign, its background, and measures can be found on pages 40-45 of the [Sustainability Report 2015](#).

Contribution to Sustainable Development Goals

GF actively contributes to and/or supports 11 of the United Nation's Sustainable Development Goals (SDGs).



Active contributor:

GF produces high-quality systems and solutions for the safe and hygienic transportation of water. This is particularly relevant for preventing legionella, a pathogen whose bacteria reproduce when water does not circulate or when the water temperature is at a level that favors their growth. For example, GF Piping Systems' Hycleen Automation System ensures a permanent hydraulic balance across all pipes and bacteria-free drinking water.

Amid the spread of the COVID-19 pandemic, [GF took swift and proactive steps](#) to safeguard its employees from potential exposure.



Active contributor:

In 2020, over 65% of GF's workforce attended various professional training programs. The average number of training days per employee was lower than in prior years due to pandemic-related restrictions. GF responded to the restrictions by revising many of the offered courses and moving them online.

The Corporation is proud to have a vocational training program that was started in Switzerland over 100 years ago. The program now encompasses its operations in the United States and China. In 2020, 387 apprentices were trained worldwide.

Additionally, GF has work-study arrangements with universities in several countries, with students completing their degree while participating in projects at GF.

**Active contributor:**

In recent years, GF has initiated a range of measures to increase the proportion of women in its workforce and management. To accelerate progress, GF set specific targets for gender balance in its [Sustainability Framework 2025](#).

GF's ongoing measures include management training programs that address gender balance, company events, and participation in career fairs aimed at female job candidates.

**Active contributor:**

Large amounts of drinking water are currently lost or contaminated around the world due to poor infrastructure. GF Piping Systems offers a variety of products that help ensure leak-free delivery. For example, the [new NeoFlow pressure regulating valve \(PRV\)](#) helps upgrade old water networks, reduce the flow rate of existing leaks, and limit unnecessary mechanical stress on the infrastructure and avoid burst pipes.

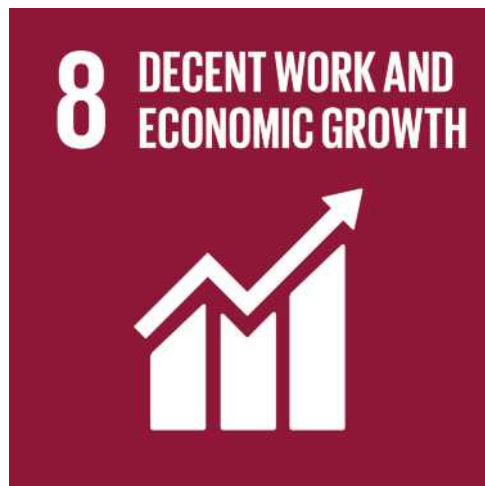
Supporter:

In 2020, GF's Clean Water Foundation provided CHF 400'000 to projects in Indonesia, Malawi, Uganda, Tanzania, Honduras, and Peru. Most of the projects focus on improving infrastructure for water filtration and water distribution in rural communities and for hospitals.

**Active contributor:**

GF helps improve global energy efficiency by increasing the energy efficiency of its own operations and by making its products and solutions steadily energy-smarter.

GF Machining Solutions, for example, participates in the Blue Competence initiative and strives continually to incorporate eco-design features into its machines. It aims to reduce average energy consumption during customer use by 15% for Milling and by 20% for EDM models.

**Active contributor:**

GF considers workplace safety essential for its operations. It has conducted a corporate-wide Zero Risk campaign since 2015. GF's ongoing efforts helped reduce its accident rate by 44% at year-end 2020 relative to its baseline (2013–2015).

The Corporation provides livelihoods and fair and competitive compensation to 14'118 employees in more than 30 countries around the world.

**Active contributor:**

GF invests continuously in R&D – CHF 112 million in 2020 (CHF 127 million in 2019) – to create innovative new products and solutions that provide social and/or environmental benefits for customers during the product's use phase. All three GF divisions address sustainability issues along their products' value chains and across product life cycles.

GF Casting Solutions, for example, focuses on lightweight components for the aerospace and energy sector.

GF Machining Solutions offers solutions to increase the energy efficiency of high-precision machines.

**Active contributor:**

GF Piping Systems' solutions directly support municipalities in establishing and maintaining safe and leak-free water distribution networks. Solutions like [COOL-FIT](#) also enable GF's customers to increase the energy efficiency of their drinking water systems and cooling equipment.

GF Casting Solutions excels at the design and manufacture of lightweight components for the automotive and aerospace industries. GF therefore contributes directly to the development of alternative-drive mobility and to noise and pollution abatement in cities and communities.

**Active contributor:**

GF has actively managed its use of natural resources since 1997, when the company also published its first environmental report. Since then, the scope of its sustainability program was extended to the Sustainability Targets 2020 and forms the basis for its sustainability-related activities.

GF strives continually for its operations to reduce the waste sent to landfill or incineration.¹ Its [Sustainability Framework 2025](#) enhances this commitment, focusing on decoupling resource consumption from growth.

**Active contributor:**

GF's target was to reduce its operations' GHG emissions intensity by 10% over the period 2016-2020. At year-end 2020, GF had exceeded this target by 2%. Under its [Sustainability Framework 2025](#), GF intends to reduce its absolute GHG footprint by 12.5%.

CDP gave GF a score of A- (Leadership level) in 2020 in recognition of GF's global efforts to reduce energy consumption and GHG emissions and its water management.²

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

**Supporter:**

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

¹ The waste target encompasses both non-hazardous and hazardous waste.

² CDP (Carbon Disclosure Project) runs a global disclosure system for companies, states, regions, and cities to report about how they manage their environmental impacts.

Sustainability Framework 2025

GF improved in areas such as energy and water intensity as well as its accident rate over the past five-years. To extend this momentum into the future and address some of society's most pressing challenges, GF defined its 2025 strategy that includes a set of ambitious sustainability targets.

Developing the Sustainability Framework 2025

Developing the Sustainability Framework 2025 consisted of three phases.

- **Phase one** consisted of a bottom-up approach. Key internal and external stakeholders were consulted in a series of interviews on a broad range of material topics.¹ This was then supplemented by a qualitative impact analysis along GF's value chain. The purpose was to rank topics' relevance for sustainable development. A workshop with key representatives of all relevant internal departments led to the identification of three distinct focus areas and a proposal for an ambition for each. This overview was discussed with and approved by the Executive Committee as a framework for the refinement of supporting goals.
- The second phase entailed a structured project to identify the practicable yet ambitious targets. The three focus areas were assessed in detail by GF's three divisions to factor in the specifics of their individual businesses. The findings and proposals were then jointly discussed and finalized in a series of workshops to ensure that GF sets an ambitious five-year plan.
- The final phase consisted of obtaining the Executive Committee's approval. The three divisional Presidents presented how they intend to realize the proposed framework in the context to their respective operations and markets. Finally, the Board of Directors approved the Sustainability Framework 2025.

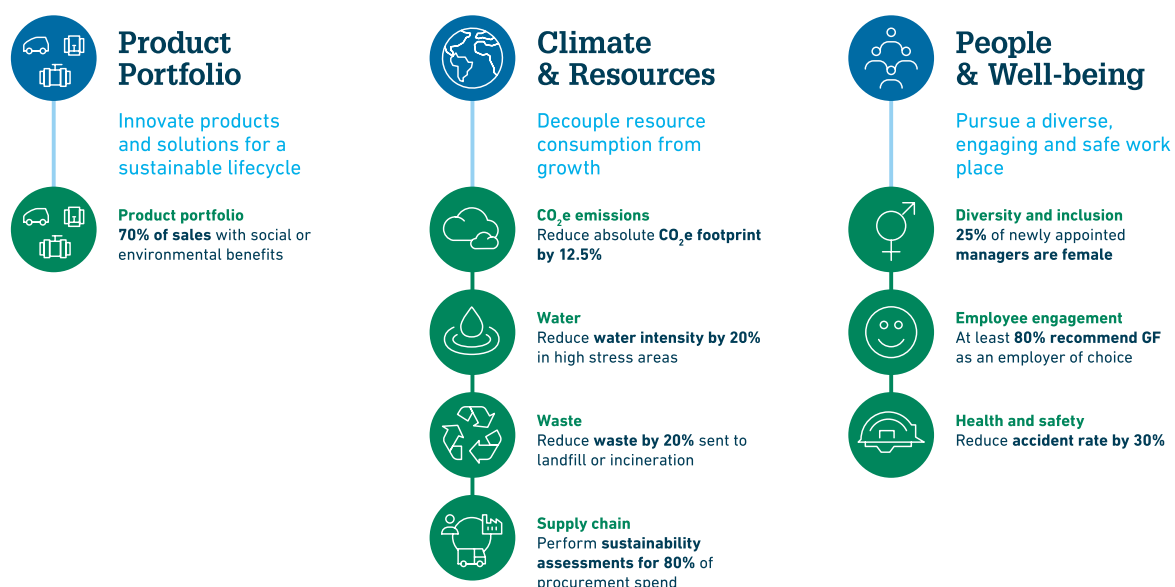
GF's sustainability strategy is now **fully integrated into GF's overall Strategy 2025**, which was a key theme throughout its development phase. This means that GF does not see sustainability as a separate topic but rather as being at the heart of its business.

The Sustainability Framework 2025 in a nutshell

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

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

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



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

GF's product portfolio

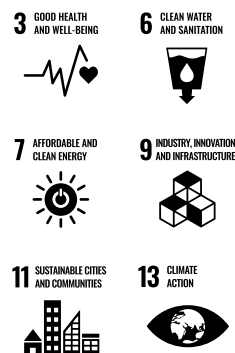
GF defined a goal to propel its ambition of providing customers with sustainable options:

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

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

GF's portfolio is therefore to be characterized by a larger proportion of products that offer **social or environmental benefits** for customers and/or end-consumers. At year-end 2020, 58% of GF's sales came from products and solutions that have social or environmental benefits. GF is committed to increasing this portion to at least 70% by 2025.

Active contribution to



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

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

GF’s impact on the climate and resources

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

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

This ambition is articulated in four specific goals:

1. GF aims to **reduce its GHG emissions in absolute terms by 12.5% by 2025** (Scope 1 and Scope 2 emissions).² GF’s Scope 1 emissions mainly consist of natural gas, biogas, fuel oil, and, to a lesser extent, fuel used for internal transportation needs. GF’s Scope 2 emissions consist of its electricity consumption.
2. Although GF’s operations are generally not water-intensive, the project team identified fifteen (15) GF production sites that consume water and are located in water-scarce areas. GF’s target for these 15 sites is to **reduce their water intensity by 20% by 2025**.^{2, 3}
3. GF’s waste is almost entirely non-hazardous. Nevertheless, the company has responsibility to reduce the amount of waste incinerated and landfilled. It therefore aims to **reduce its waste** (hazardous and non-hazardous) **by 20% by 2025**.⁴
4. GF is committed to extending its sustainability standards to its suppliers. Its goal is to conduct a comprehensive **sustainability assessment of around 500 key suppliers**, which together account for around 80% of its procurement spend.

GF’s people and their well-being

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

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

Active contribution to



Active contribution to



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

GF's ambitions for the three focus areas and the eight defined goals are aligned with the UN Sustainable Development Goals (SDGs). This helps ensure that the Corporation meets not only the needs of its customers and employees, but also those of the broader community in which it operates. GF's sustainability goals contribute to 11 of the 17 SDGs and support the global agenda for 2030 as defined by the United Nations and supported by the individual governments.

→ [More information on GF's contribution to the SDGs](#)

- ¹ Thirty interviews were conducted with GF's customers, investors, suppliers, employees, and senior management.
- ² Compared with the baseline (2019).
- ³ GF's water consumption reflects its production output. The target is therefore intensity rather than a specific absolute amount.
- ⁴ Compared with the baseline (average of 2018–2020).

Progress in GF's operations

Sustainability Targets 2020	p. 72
Procurement and logistics	p. 77
Employees and society	p. 79
Environment and energy	p. 97

Sustainability Targets 2020





Products and innovations

Modules and targets	Targets 2020	Level of achievement	Progress status (year-end 2020)
<p>Product responsibility GF products support the customer in saving energy and reducing CO₂-emissions during its use phase.</p>	<p>GF provides CO₂-efficient and safe products to the customer.</p>	●	<p>All divisions place a strong focus on innovation and continuously work on developing new solutions that provide social (e.g. hygienic) and/or environmental (e.g. energy efficiency, GHG reduction, etc.) benefits to GF's customers.</p>
<p>Eco-design GF products are optimized with regard to their environmental friendliness, resource efficiency, and durability.</p>	<p>Systematic introduction of ecodesign measures in product development in order to promote energy- and resource-efficient products.</p> <p>Each division monitors its environmentally friendly products, which enable reduced energy consumption and/or CO₂-emissions.</p> <p>GF Piping Systems optimizes its products regarding their environmental friendliness, resource efficiency, and durability.</p> <p>GF Casting Solutions focuses on bionic design and lightweight construction.</p> <p>GF Machining Solutions joins the Blue Competence Initiative and reduces average energy consumption by 15% for Milling machines and by 20% for EDM machines.</p>	●	<p>GF's products and solutions offer a variety of social and environmental benefits to its customers and end-consumers. In 2020, 58% of GF's sales were attributed to products with such features. All divisions are committed to sharpening their focus on the sustainability of their products and solutions and forging partnerships along their value chains.</p> <p>As part of the Sustainability Framework 2025 development process, GF's divisions critically assessed their respective capabilities and processes to identify improvement potential and set realistic but ambitious goals for greater integration of sustainability into their product development activities. As part of this exercise, GF's management defined an overall vision for GF to become a sustainability and innovation leader. The targets for 2025 can be found in the chapter "Sustainability Framework 2025."</p>

Level of achievement:



Procurement and logistics

Modules and targets	Targets 2020	Level of achievement	Progress status (year-end 2020)
Procurement GF suppliers demonstrably comply with GF's Code for Business Partners for eco-friendly and socially responsible supply.	All key suppliers have signed the GF Code for Business Partners.		At year-end of 2020, almost 100% of GF's key suppliers had signed the Code of Conduct. The target has therefore been achieved.
	Systematically integrate sustainability aspects into supplier audits. At least ten audits focused on sustainability are carried out every year per division.		A number of pilot supplier assessments were conducted in 2020, as well as a sustainability risk evaluation of the divisions' commodity groups. Based on this experience, GF decided to invest in a standardized solution to evaluate the sustainability aspects of its suppliers. 84 such assessments were conducted in 2020, with further rollout to continue in 2021 and beyond. Over the course of the five-year period, a cross-divisional approach was defined to prioritize and select suppliers, to assess them, and to integrate the rating results into existing procurement processes.
Logistics GF optimizes its logistics in terms of energy consumption, emissions, and packaging.	Systematically measure and analyze key transport and environmental figures together with the most important transport service providers in Europe.		GF works closely with its logistics partners to evaluate and implement improvement measures. As in previous years, in 2020 the logistics teams of GF Piping Systems and GF Machining Solutions took steps toward greater transparency on the environmental footprint of the logistics network in areas where GF has a possibility of influence.
	Define and implement improvement measures together with transport service providers.		
	Reduce GF product deliveries by air freight by 20% worldwide.		Efforts are being made to continuously decrease the proportion of air transport. In 2020, the measures implemented by GF Piping Systems resulted in a 31% reduction of air freight shipments relative to its sales (thousands of kilometers per CHF 1'000 of sales) compared with the average for 2014-2015.

Level of achievement:



People and safety





Modules and targets ^{1,2}	Targets 2020	Level of achievement	Progress status (year-end 2020)
Accidents at work GF strives to reduce its severe accidents to zero and bring down the accident rate by at least 20% in every division by the end of 2020.	Zero severe accidents		Over the last three years, GF observed a continuous decline in the number of severe injuries, thanks to the efforts to reduce the incidence of work-related accidents. In 2020, there was an overall significant reduction of accidents, partially due to COVID-19-related measures. During the year under review, three severe accidents occurred compared with 16 in 2019. This represents an 80% reduction.
	Reduce accident rate by 20%		The accident rate decreased from the baseline of 14.0 accidents per one million hours of work to 7.9 accidents in 2020. This 44% decline was significantly better than the target rate. Efforts to establish a safety culture at GF will remain a high priority in the years to come.
	All companies comply with GF safety standards		As accidents still happened, GF is aware that additional measures are needed to ensure compliance with its safety standards. The GF Standards for Occupational Health and Safety, which were revised in 2019, provide up-to-date occupational health and safety information that serves as direction for GF locations to create safe and secure conditions for all employees and visitors. The document also ensures that the same rules are applied worldwide.
Safety audits GF regularly conducts cross-site safety audits in order to constantly improve its safety culture.	Cross-site safety audits are performed per production plant and warehouse at least once a year		As in the previous three years, in 2020, safety audits were conducted at a number of GF's production locations. The lessons learned were analyzed, and improvements were put in place. Over the past five years, cross-site-safety audits have helped foster a safety culture at GF and promoted cross-divisional exchange among the sites.
Employer responsibility GF strives to be an attractive employer to be able to attract talents, retain our high-performing employees, and develop our workforce. Furthermore, GF acts as a respectful and socially responsible employer.	GF recognized in its industry as an attractive employer		In 2020, GF was listed among the "Most attractive employers of Switzerland" for the fourth year in a row. Having partnerships with universities in Switzerland, Germany, the United States, and China, GF helps ensure that students and experienced professionals consider it an attractive potential employer.
	Fill 70% of vacant leadership positions with internal candidates		GF's various professional development programs helped it fill nearly 70% of vacancies in senior management in the period 2016–2020 with internal candidates. At year-end 2020, 69.57% of all senior managers came from within GF's ranks.
	Take action to increase and promote diversity in terms of gender, age, and origin		GF sees diversity as an important topic for the organization, especially in the context of boosting its innovation potential. It launched measures to promote greater flexibility at work and thus make GF more attractive, especially to younger employees and women. GF is also using targeted networks to strengthen career development opportunities for women in the organization.
Absences GF strives to lower the absence rate by implementing supportive measures.	Reduce absence rate by 10% across the organization		The absence rate increased in 2020 to 3.5% compared to the 3.2% baseline, owing in part to quarantines and other COVID-19-related measures.

¹ In order to provide newly acquired GF companies with a realistic timeframe for target achievement, those that commenced sustainability reporting after 2017 are not included in the calculation of the achievement of the Sustainability Targets 2020. Instead, they had individual targets.
² The target achievement graphs are shown in the section "Sustainability at GF" - "Key figures for 2020".

Level of achievement:



Environment and energy

Modules and targets ^{1,2}	Targets 2020	Level of achievement	Progress status (year-end 2020)
Energy GF production companies actively apply energy efficiency measures and define local targets in order to realize the Corporate goal of increasing energy efficiency by 10% in every division by the end of 2020.	Increase energy efficiency by 10%		Overall, energy efficiency was higher than the expected index target line. In the recent years, all three divisions continually improved in this KPI. The return on investment in new buildings and infrastructure and ongoing efficiency measures were the main factors. Over the last five years, the majority of GF sites increased their energy efficiency and contributed to the target achievement.
CO₂e GF strives to reduce its CO ₂ e emissions from production by at least 10% in every division by the end of 2020.	Reduce CO ₂ e emissions by 10%		GHG emission intensity in 2020 was below the index target line. The improvement reflected the purchase of green energy for GF Casting Solutions sites and the aforementioned increase in energy efficiency across the divisions. Over the last five years, the amount of green energy purchased has risen in parallel with the reduction in GHG emissions.
Materials and waste GF strives to reduce its non-recycled waste (i.e. waste sent to landfill or incineration) from production by at least 10%.	Reduce non-recycled waste by 10%		Technical problems in 2020 at one site relating to separation of a water-oil emulsion from production processes led to the emulsion's discharge as hazardous waste. This problem's significant impact prevented GF from meeting this target for the year. Overall, in 2020, GF recycled nearly 70% of its waste.
Water GF strives to reduce its volume of fresh water consumption in water-scarce and water-stressed areas by at least 10% in every division by the end of 2020.	Reduce fresh water consumption in water-scarce and water-stressed areas by 10%		In 2020, the six GF sites in water-stressed areas met their water-intensity target. Systematic screening of water consumption in production processes helped identify improvement measures and achieve the target on schedule.

¹ In order to provide newly acquired GF companies with a realistic timeframe for target achievement, those that commenced sustainability reporting after 2017 are not included in the calculation of the achievement of the Sustainability Targets 2020. Instead, they had individual targets.

² The target achievement graphs are shown in the section "Our performance" - "Key figures for 2020".

Level of achievement:



Procurement and logistics

For GF, sustainable management includes the establishment and maintenance of long-term, trusting partnerships with its sourcing and logistics partners.

Alongside economic considerations, GF has specific expectations for its business partners regarding ethical conduct and compliance with relevant laws, regulations, and international standards for social and environmental conduct. GF considers this — along with environmentally friendly and efficient transport solutions — an important part of good business conduct and of progress toward its business goals.

Procurement

The [Code for Business Partners](#) plays a crucial role in this context. By the end of 2020, almost all GF's key suppliers had signed the Code for Business Partners or demonstrated that they have equivalent requirements in place (GF Piping Systems 100%, GF Casting Solutions 100%, GF Machining Solutions 95%).

Several sustainability criteria are part of the onboarding process and periodic evaluation process for GF's suppliers. These criteria include, but are not limited to, questions about human rights, environmental risk exposure, health and safety in the manufacturing process, and conformity with relevant legislation (such as REACH, the Dodd-Frank Act, and the Consumer Protection Act). For example, GF is committed to ensuring that its supply chain has no conflict minerals. Due to the complexity of tracing the minerals' origins, the process is a step-by-step effort. Based on the information obtained from suppliers, GF is unaware of any conflict minerals present in the materials it purchased in 2020 to manufacture its products.

→ [Please see the GF Corporate Conflict Minerals Policy](#)

Responsible supply chain

In 2019, GF designed an approach for systematically assessing its three divisions' commodity groups and suppliers. The aim was to achieve deeper insights into the quality of GF's supply chain from a sustainability perspective. The high level process for 2021–2025 includes:

1. risk assessment of commodities purchased
2. self-assessment by suppliers in categories identified as having higher risks and covering 80% of the spend
3. audits of suppliers identified as having weaker processes
4. follow-up and engagement with the suppliers needing improvement.

GF concluded an agreement in late 2020 to work with EcoVadis to support the rollout of the supplier sustainability assessments. The program will start in 2021 and will focus on the three divisions' roughly 500 suppliers. A cross-divisional project team was formed in 2020 to coordinate the implementation of the sustainability assessments' findings.

Since early 2019, GF has been an active participant in the Sustainable Supply Chains working group organized by the [UN Global Compact's Swiss network](#). This group serves as a forum for companies to share knowledge and best practices on topics such as improvements to supply chain visibility and traceability, supply chain risk assessment, supplier engagement, and human rights due diligence. In September 2020, GF hosted one of the meetings of the working group and shared its own experiences with the other members.

Logistics

GF purchases a variety of raw materials and goods from its supply chain and then delivers the finished products to sales companies and customers around the globe. To ensure that this process is environmentally friendly, GF has set a [target](#) of reducing energy consumption, carbon emissions, and packaging material.

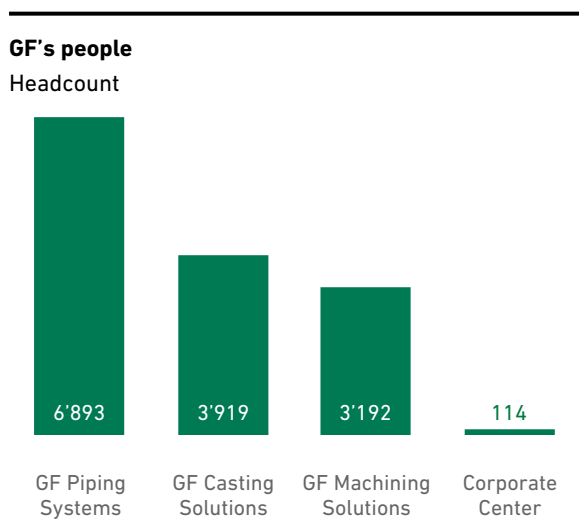
The divisions therefore took additional steps in 2020 toward improving transparency of their logistics networks' environmental footprint in areas where GF has a possibility of influence.

In 2020, GF Piping Systems reduced its air freight relative to sales — 1'000 kilometers per CHF 1'000 of sales — by 31% compared with the average for 2014–2015. This is equivalent to a reduction of 2'650 tonnes of CO₂ per year. The division conducted a detailed analysis of its available data for road, air, and ocean transport with its most important transport service providers in Europe. In cooperation with a large key customer in Germany, the division also developed a plan to shift from daily deliveries (mainly by parcel transport) to one or two bundled deliveries per week. It worked with the customer to design and agree on an optimized delivery plan and schedule with 65 bundling points. The plan simplifies logistics for both the customer and GF. It is expected to reduce the number of shipments by 60%, which will minimize the environmental impact in terms of both carbon emissions and packaging materials.

GF Machining Solutions worked with its logistics partners to review and analyze a number of possible solutions and is currently evaluating a systematic track-and-trace screening of its ocean and air freight's GHG emissions.

Employees and society

Motivated employees are crucial to a company’s success, and GF relies on their commitment. To promote their engagement, GF offers various development opportunities.



At the end of 2020, GF employed a total of 14'118 people. This headcount corresponds to 13'562 full time equivalents (FTEs). Being their employer gives GF direct responsibility for their on-the-job safety, health, and well-being.

Today’s workplace is evolving continually. One of GF’s key goals is therefore to be agile and remain an attractive employer to its current and potential employees. GF offers employees a broad range of continuous learning and development courses and programs, fair and competitive compensation, and increasingly modern production and office facilities. The purpose is to promote a collaborative environment and employees’ health and safety.

Diversity and flexibility

GF is a global organization represented by a diverse network of employees from all corners of the world. The diversity of cultures, religions, nationalities, genders, sexual orientations, and ages is a valuable source of talent, creativity, and innovation, all of which improve performance and decision-making.

GF expats all over the world

GF fosters cultural exchange by giving employees the opportunity to acquire professional and life experience in different countries over the course of their careers. GF encourages the exchange of exceptionally talented employees across national and cultural borders. This enables expats and inpats to gain the skills necessary to assume global responsibilities within the Corporation and acquire an understanding of other cultures, customs, and traditions. In 2020, 22 employees were on a multi-year secondment abroad.



Flexible work arrangements

Cultivating and establishing a flexible, creative work environment is essential for GF to achieve its innovation objectives. An initiative in Switzerland, "future@work", enables the company to continually analyze and implement steps to make work arrangements more attractive and flexible and help employees achieve a healthy work-life balance.¹ At year-end 2020, 396 employees (3% of the workforce) were working part-time, of whom 66% were women. The COVID-19 pandemic accelerated the trend toward remote working. GF widened its existing policies and made working from home possible whenever an employees' professional duties allow it.

Gender balance

At year-end 2020, 19.9% of GF employees were women (2'764 FTEs). The proportion of women managers was 15.8% (97 FTEs) compared with 16.4% (100 FTEs) in 2019.

In the last few years, GF has initiated a variety of measures to improve its workforce's gender balance. For example, the shortlist for vacant management positions generally includes at least one woman.

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

Other Corporation-wide measures focus on adjusting the recruitment process to find female candidates for positions key to GF's core business, conducting internal communications to reinforce awareness across the company, and adding new topics to existing training courses, such as familiarizing participants with the added value of diversity.

GF also attends career fairs like Women's Contact Day in Zurich, Switzerland, which focus on highly talented women professionals and university graduates. Most career fairs took place virtually in 2020. This gave university graduates the opportunity to live-chat with current GF employees and to learn more about working at GF.



Gabriel Bolliger (2.f.l.), Head Vocational Training at GF Machining Solutions, with young apprentices in the training workshop in Biel (Switzerland). The workshop focuses on cross-professional projects with mixed project teams to optimize the learning process.

Diversity in a broader sense

Diversity goes beyond gender. GF does not tolerate discrimination on the basis on any personal attribute.² It also strives to foster a workplace culture that welcomes, includes, and affirms everyone. GF welcomes applications from people with a disability and supports their integration into the company. At the end of 2020, there were 114 employees with disabilities working at GF (0.8% of the total workforce).

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

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

A number of measures that are part of the [Sustainability Framework 2025](#) will further enhance GF's efforts to increase diversity and inclusion.

Fostering collaboration

Collaboration within and across divisions and functions is only feasible if such a culture is continuously nurtured. At GF, this starts by bringing its corporate **purpose and values** to life and is reinforced by training all employees based on a framework “*7 Habits of Highly Effective People*.”³ Collaboration also requires appropriate structures in terms of processes, infrastructure, and physical space.

GF launched a project in 2017 to standardize its human resources (HR) processes across divisions and countries. The aim was to enhance communications between line management, employees, and the HR department and to strengthen the shared understanding of GF’s values and leadership. Its purpose was also to help HR support GF’s daily operations of GF and propel the implementation of GF’s strategic targets. By year-end 2020, four parts of the project had been rolled out: Management by Objectives and Performance Development in 2018, and Recruiting and Talent Management in 2020. Currently, cross-divisional teams are working on establishing a learning management platform. It will provide employees with a single portal for viewing their course history and finding new courses they could take from across GF. The project’s final work stream focuses on the harmonization of compensation and benefits. It is scheduled to be rolled out in 2021/22.

In addition to offering up-to-date employment conditions, GF focuses on providing an innovative work environment that enhances open communications and efficient collaboration, while still making it possible for employees to temporarily withdraw from open-space offices to do work requiring a high degree of concentration.

Pandemic-related restrictions made it necessary for GF employees to adapt their style of collaboration in line with the situation in their country. The swift and smooth rollout of Microsoft Teams in early spring 2020 made virtual meetings the new format for most collaboration. GF supported its employees and line managers by offering various training materials for them to become more familiar and efficient with virtual-presence technology and to also support their personal interactions while working remotely.

Training and professional development

Knowledge and hence employee development are essential for a company’s lasting success. GF therefore supports its employees and provides them with targeted and customized training and professional development that aim to widen and deepen their knowledge throughout their career.

The GF Academy is responsible for designing and implementing GF’s training and professional development portfolio at Corporate level. It coordinates measures and programs that target social and technical skills for management and employees of all divisions and regions. For over 15 years, a course introduces all new employees to Stephen Covey’s book, *7 Habits of Highly Effective People*. The *4 Disciplines of Execution (4DX)* method teaches employees important skills that help them successfully implement GF’s corporate strategy.

GF Academy launched a new leadership training course in 2019. Its purpose is to train and coach senior managers to be successful and effective leaders today and tomorrow. Through sharing experiences, concepts, and tools, the course aims to help participants engage their employees to achieve great results and impeccable customer service. The course has been conducted six times so far. The two sessions scheduled for 2020 had to be postponed until 2021 due to COVID-19.

In 2020, the GF Academy started to transform its course formats from in-person to hybrid learning journeys in order to adapt to the new realities of training.

Beyond GF Academy, the divisions have their own training programs to provide relevant educational support to their specific operations. These programs focus on applied technical education as well as training in the area of occupational health and safety (such as the Zero Risk campaign).

Many of these training programs normally take place at Klostergut Paradies, GF's Corporate Training Center in Schlatt, Switzerland. This facility is housed in an eight-century-old former monastery updated with state-of-the-art infrastructure.

Focus on innovation and added value for customers

A key element of GF's Strategy 2020 was innovation. To accelerate the Corporation's transformation and to sharpen its customer focus, GF has been adopting design thinking across all divisions to make it an integral part of its corporate culture. Design thinking's main tenets are that:

- success depends on clearly defined factors: multi-disciplinary teams, a culture of try early and fail quickly, and a structured process including rapid prototyping as well as ongoing dialog with customers
- innovation is not restricted to R&D, but rather is a team effort that incorporates all functions.

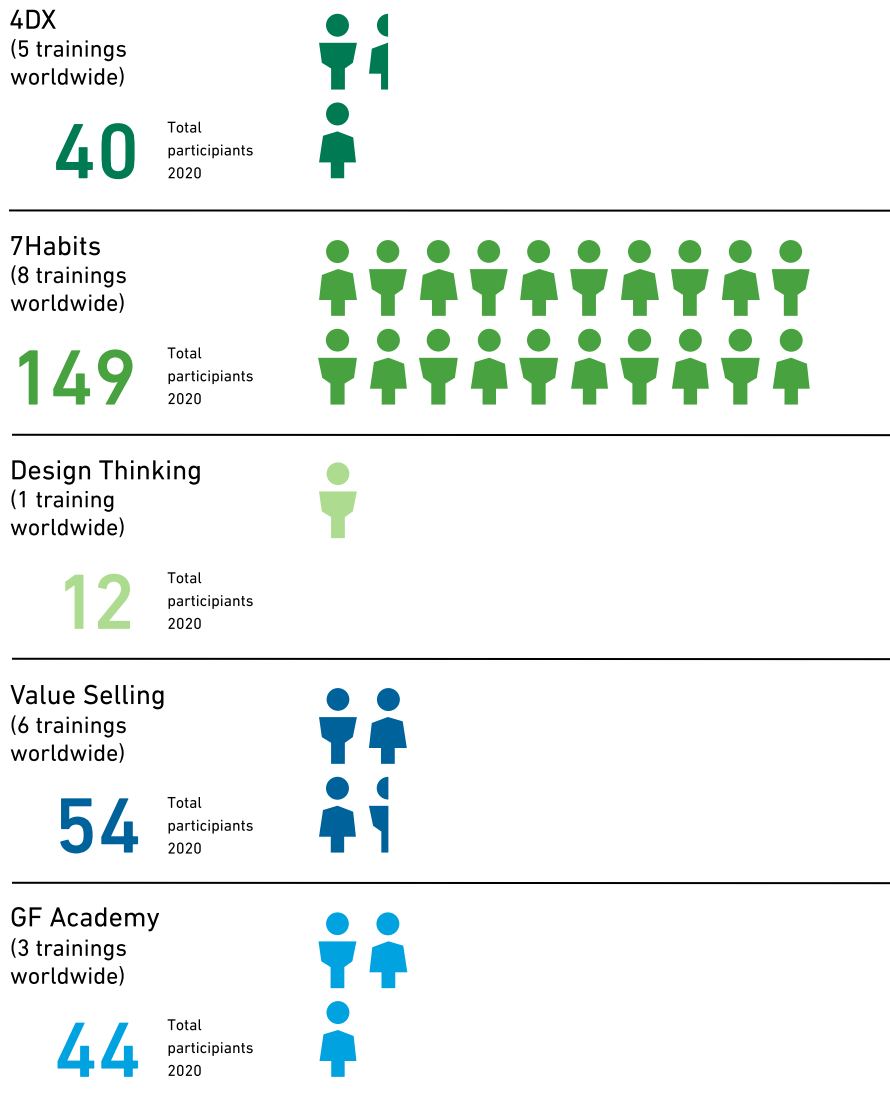
To date, more than 1'500 GF employees have received design thinking training worldwide (12 in 2020). The main focus in recent years has been on providing next-level support through project coaching, offering advanced training opportunities, and further embedding design thinking into GF's innovation processes and corporate culture. In 2020, this included providing project-specific coaching (mostly virtually) in key markets and industries and promoting the use of the GF-specific design thinking framework and toolbox to support all GF employees in applying new ways of working.

In addition, GF has adopted a value selling approach to address the strategic target of realizing business potential in higher value areas. In 2020, 54 GF employees worldwide participated in a total six training sessions on value selling.

These two approaches—design thinking and value selling—form the basis for employees to work together across GF's functional and geographical borders to provide the best solutions and services for meeting customers' needs and expectations.

GF's various professional development programs helped it fill nearly 70% of senior management vacancies in the period 2016–2020 with internal candidates. At year-end 2020, 69.57% of all senior managers came from within GF's ranks.

GF's employee training courses in 2020



The low number of trainings carried out compared to the previous year is due to the pandemic-situation in 2020.

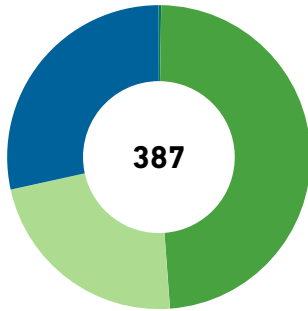
Collaborations with academia

GF works closely with renowned technical universities around the world. The company offers students specializing in science, technology, engineering, and mathematics the opportunity to do an internship at GF or to complete their bachelor's or master's thesis by working on challenging projects and case studies. Current collaborations include institutions in Switzerland, Germany, Austria, and Australia. GF also pursues similar collaborations with universities in China and the United States in order to strengthen access to engineering talent in these key markets.

One such partnership is between GF Signet in El Monte and Harvey Mudd College in Claremont, California (USA). GF Signet started this relationship three years ago when it was looking for fresh ideas and input for a number of engineering challenges. Students participate in a GF Signet project for two semesters. The collaboration also helps the site replenish its talent pipeline.

Number of apprentices

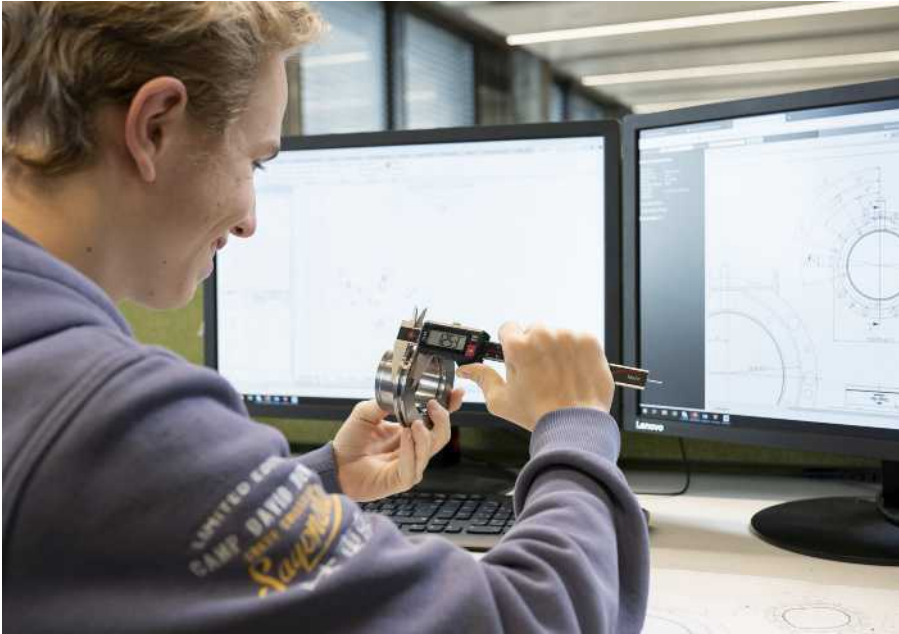
In % (100% = 387)



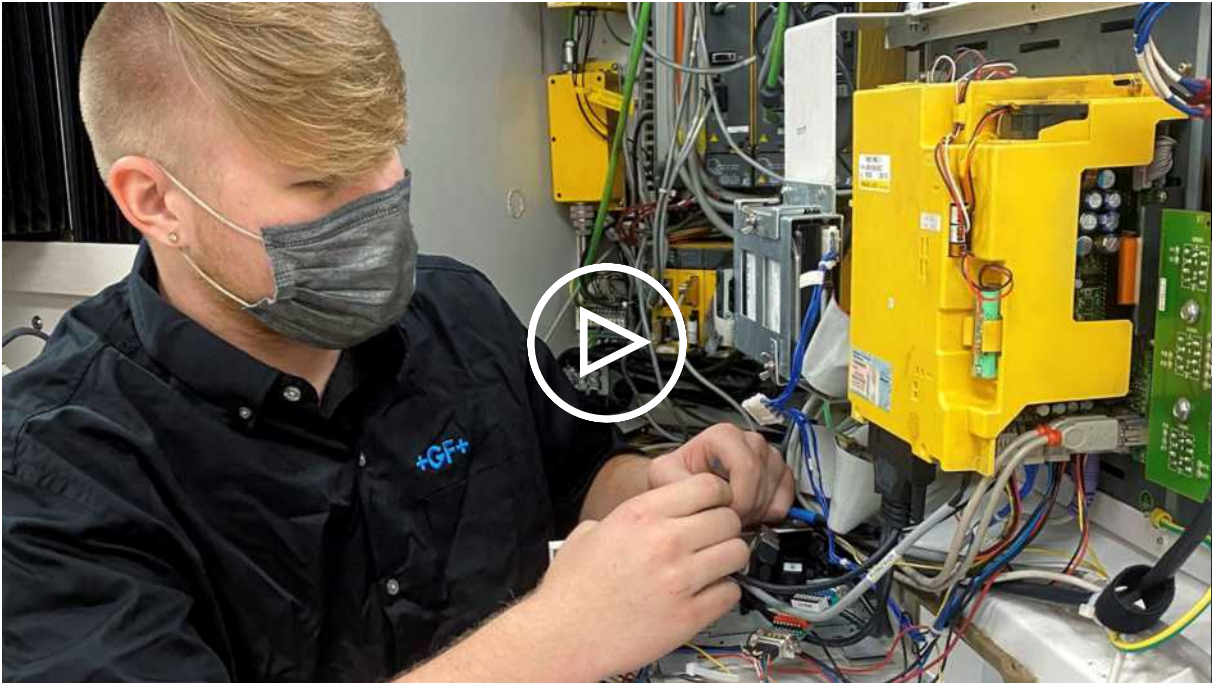
- 0% Corporation
- 49% GF Piping Systems
- 23% GF Casting Solutions
- 28% GF Machining Solutions

Vocational training is a cornerstone of Switzerland's education system, and GF was one of the country's first companies to establish such a program over 100 years ago. The program now encompasses its operations in the United States and China. GF offers apprenticeships in a broad range of technical and commercial professions. In 2020, GF trained 387 apprentices globally (446 in 2019).





GF's company guidelines stipulate that qualified apprentices are given preference if there is an open position. For example, the apprenticeship model applied three years ago at GF Machining Solutions' site in Lincolnshire, Illinois aims to establish a program for future technicians in the division's engineering operations. The response to this initiative has been enthusiastic, in part because the United States do not have an officially recognized apprenticeship system like Switzerland and other European countries.



In China, GF is collaborating with many colleges across the country located near its operations. This includes, but is not limited to, Chengdu Aeronautic Polytechnic, Shanghai Polytechnic University, and Changzhou Technician College Jiangsu Province. For example, GF Machining Solutions established a 15- to 18-month program for new engineering graduates at its Shanghai facility.

The goal of all these measures is to address the shortage of qualified workers by taking a long-term perspective and developing the company's own specialists. This also helps GF burnish the reputation as an attractive employer.

Employee satisfaction

Employee retention is important for GF's continued success. As part of this effort, in the fall of 2020, GF conducted a global survey to identify its strengths as an employer. A total 2'485 employees participated, of whom 717 work in production. Employees were asked to rank employer attributes according to their experience at GF. The top ratings were for "a friendly work environment," "attractive/exciting products and services," and "customer focus."

The Corporation-wide fluctuation rate (including dismissals, internal transfers, and retirements) was 14.6% in 2020 (15.8% in 2019). The relocation of GF Machining Solutions in Switzerland was concluded in 2020. This move as well as the divestments and the transfer of the GF Casting Solutions sites in Austria and Germany resulted in an increase in the number of departures and the fluctuation rate in the last years.

As part of the [Sustainability Framework 2025](#), GF set a target for measuring and ensuring employee satisfaction: every other year, all three divisions will conduct an employee engagement survey containing both Corporation-wide and division-specific questions.

Employee representation

GF respects its employees' right to join employee representation bodies. Such agreements exist in a variety of GF locations and entities around the world, including Switzerland, Germany, Austria, China, France, Sweden, Japan, and Taiwan. In countries where the law provides employees the right of codetermination, this right is protected. In 2020, around 60% of GF's employees were employed under a collective bargaining agreement.

Workplace health and safety

GF places the highest priority on employees' health and safety. In 2020, GF continued its efforts to establish and maintain a safety culture with the ultimate goal of having zero accidents. Nevertheless, GF's predominant health and safety issue of 2020 was to work systematically to ensure that its offices and facilities had the equipment and procedures necessary to prevent the spread of COVID-19.

Management of the response to COVID-19

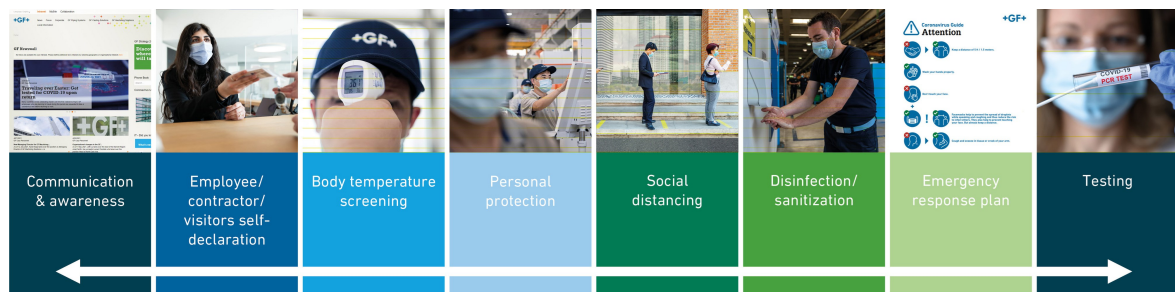
New types of viruses emerge at irregular intervals. To prepare for a novel occurrence, as far back as 2006, GF established a set of detailed pandemic plans. GF updated these plans several times in 2020 to reflect emerging WHO health advice.

To guide and coordinate its pandemic response, in February 2020, GF established a corporate committee consisting of the Executive Committee, the Corporate Risk Manager as well as Corporate and Divisional HR and Communication Managers. The committee initiates specific measures and supports implementation by unit-level management. In addition to the corporate committee, each division and company has a dedicated pandemic crisis team in place to ensure a rapid response at all levels of GF.

Those groups worked extensively throughout the year to plan, adapt, and react to the evolving pandemic situation. The safety precautions taken aimed in particular at ensuring a safe workplace for those employees who had to continue working in plants, laboratories, and offices. The measures included dividing teams into discrete groups, offering COVID-19 tests, conducting hygiene and mental health training, and providing personal protective equipment (PPE), such as mouth-and-nose coverings, hand hygiene stations, and translucent plastic dividers.

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

Alongside protective measures, global HR teams trained senior managers on leading their teams remotely and offered guidance to employees on maintaining mental and physical well-being as well as a healthy work-life balance.



GF Safety Standards

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



GF Standards for Occupational Health and Safety

Reducing the risk of accidents

GF works continuously to minimize the potential of workplace accidents. Its target for its accident rate at year-end 2020 was to be 20% below the average figure for 2013–2015. Thanks in part to GF's unrelenting commitment to safety, the accident rate at year-end 2020 was 44% below the former average, far surpassing its target.

Ongoing training is a key component of a robust safety culture. GF trains its employees, contractors, and visitors on health and safety topics via the Zero Risk campaign. Initiated in 2015, this campaign has now been adopted by all three divisions. It encompasses communication measures on the divisional and company levels to reinforce safety awareness.

GF Standards for Occupational Health and Safety require its production sites to be certified to ISO 45001 or OHSAS 18001. The safety management processes are valid for all employees, visitors and third parties and all workplaces at the facilities. At year-end 2020, the health and safety management processes of around 80% of GF's production sites were certified to OHSAS 18001⁴ or ISO 45001. In 2020, GF Linamar in the United States and the facilities that GF Casting Solutions acquired in Romania in 2017 successfully certified their health and safety management to ISO 45001.

80% of GF production sites are OHSAS 18001 or ISO 45001 certified.

The identification of risks and hazardous processes is crucial for ensuring safe workplaces. GF does this by adopting the proven hazard portfolio method. A GF company classifies its activities by risk and the availability of recognized methods to avoid that risk. The result is documented, and the defined protective measures and safety rules are summarized as operating instructions. These instructions are made clear to all affected employees and displayed at workstations. In addition, the operating instructions are available for all employees at any time. After a near-miss or an accident, the hazard identification is reviewed and, if necessary, updated. The head of the department, together with a safety manager and the responsible managers regularly monitors the implementation of technical and practical safety measures and identifies improvements.

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

A process called Safety Stand Down at GF Piping Systems' site in El Monte (USA) provides a hands-on example of how the employees are integrated to achieve a safe work environment. On a quarterly basis, the facility's Environmental Health & Safety team reviews GF's safety materials and guidance and assesses various risky situations, behaviors, and best practices with the employees exposed to such risks. Their feedback is recorded and analyzed. This process is likely one of the reasons this facility reported no accidents in 2020.



In addition, since 2015, GF's divisions have conducted annual cross-facility safety audits at each location to ensure the effectiveness of their safety measures.

Due to pandemic-related travel restrictions, in 2020 these audits were conducted by the facilities themselves. GF Piping Systems conducted them at 32 locations, while GF Casting Solutions at all 10 of its facilities. The findings were summarized and presented to divisional management. GF Machining Solutions was unable to conduct its planned audits owing to reduced work schedules (short-working time). It will renew them in 2021. Still, over 95% of all GF's production facilities were audited in 2020.

To do even more to protect the health of GF employees and other people working at its premises, in early 2020, GF Machining Solutions introduced a Stop Working Directive. It encourages employees who perceive a potentially hazardous situation to stop working immediately and notify their supervisor.

Despite these comprehensive measures, accidents sometime still occur. In such cases, the accident, its root cause, and any corrective measures taken must be reported within three days of the accident by means of a Corporation-wide accident reporting tool. Accident reporting and analysis help GF gauge the effectiveness of its safety initiatives and procedures. In 2020, reporting was expanded to include near-misses, their root-cause analysis, and any preventive measures implemented. Each division's health and safety specialist provides an accident and near-miss report on a monthly basis to divisional management and the location's safety teams to ensure knowledge sharing between the facilities and to help prevent future accidents. In addition, information on health and safety is included in the monthly reports provided to the Board of Directors since 2019. This reflects the high priority GF places on safety.

Safety awards

In 2020, GF Piping Systems' sites in the United States were recognized by **EHS Today** to be among the safest nationwide. The award is testimony to management's outstanding support for sites' health and safety efforts, employee involvement in these processes, and innovative solutions to safety challenges.



GF Casting Solutions site in Suzhou (China) received an honor certificate from the local government for supporting three other companies in setting up their occupational health and safety management during 2020.

The North Carolina Department of Labor awarded GF Linamar (USA) with the Silver Safety Award. The company's health and safety management is considered to be best in class. For example, its days-away-from-work rate is 50% below the industry average.



The Environmental Health and Safety team of GF Linamar displays the Silver Safety Achievement certificate.

Safety indicators

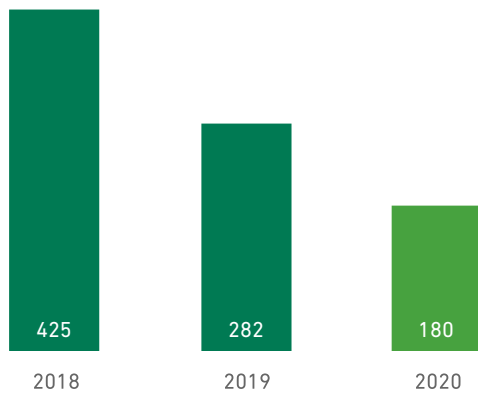
The total number of accidents among GF employees decreased by 36%, from 282 in 2019 to 180 in 2020. Most of the accidents happened in production and processing areas, which resulted in finger and hand injuries. The number of accidents among GF employees declined at all three divisions. Short-time work and the pandemic-related temporary closure of some sites in the first half of 2020 contributed to the reduction.

The Zero Risk campaign's ongoing efforts have paid off: the Corporation-wide accident rate (per one million working hours) declined from 14.0 in the baseline year to 7.9 in 2020.⁵ Over the five-year target period, GF reduced its accident rate by 44% relative to the baseline, far surpassing its target of 20%. All three divisions contributed to this achievement.

2020 was the fifth year in a row that GF's companies had zero fatalities.

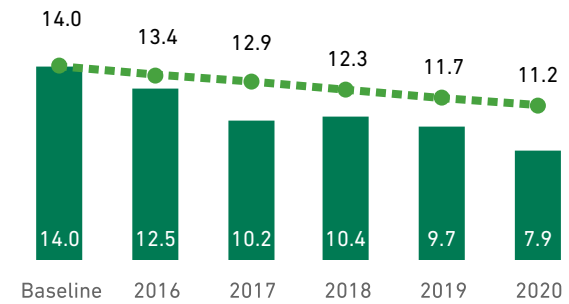
Zero fatalities five years in a row

Number of accidents among GF employees



Accident rate⁶

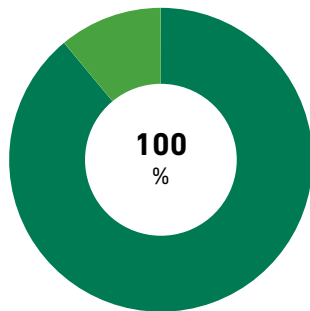
Per million hours worked



● Target line

Share of accidents, GF employees and leased personnel, 2020

In %



- 89% GF employees
- 11% Leased employees

Some accidents still happen. Consequently, the [Sustainability Framework 2025](#) sets new accident targets including those for contracted employees.⁷ Accidents involving contractor employees account for 10% of GF's total accidents, whereas the remaining 90% involve GF employees.

The ambitious target for the next five years is to reduce the overall accident rate by 30%. GF aims to achieve this mainly by:

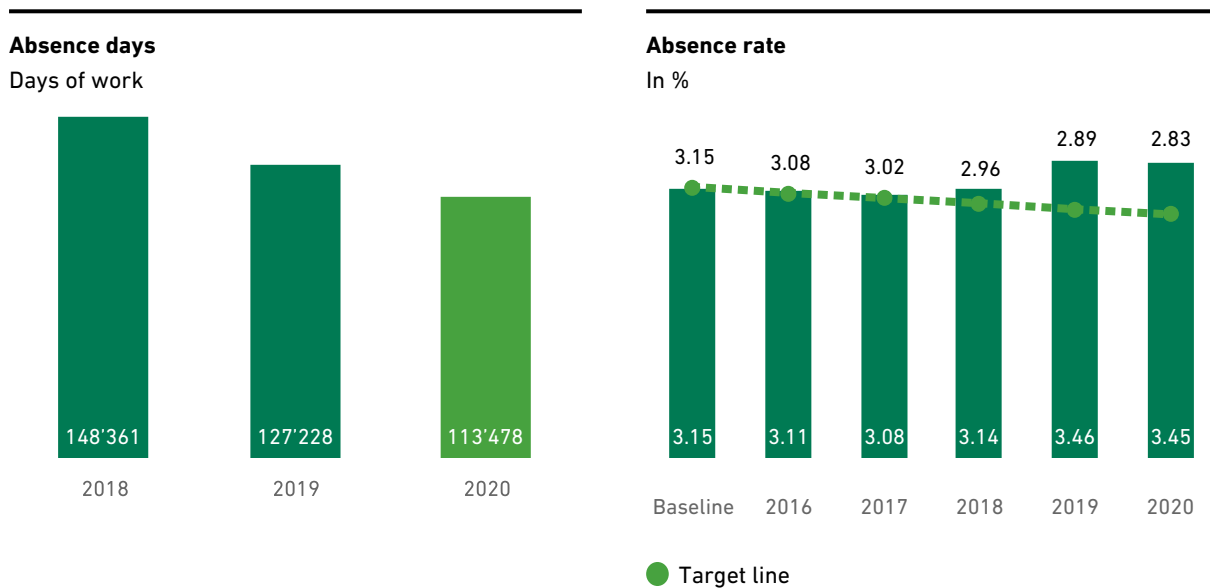
- refining the divisions' safety training for the specific needs of employees from temporary employment agencies
- focusing on the optimization and the effectiveness of the measures that are already in place.

The Zero Risk campaign and its main message will remain the core of GF's occupational safety communications and will be continually upgraded. For instance, GF Piping Systems has already initiated plans to enhance safety awareness with a new campaign "Be aware, be safe". Additionally, GF will concentrate its efforts on developing specific measures that will help reduce the most common recurring accidents (such as finger and hand injuries).

Employee well-being and absence rate

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

COVID-19 was by far the main health issue of 2020. Consequently, the majority of health measures throughout the year were related to managing the pandemic effectively. These measures included extensive home office arrangements, the division of teams into discrete groups, targeted restrictions at canteens, and a range of hygiene and social-distancing measures. The chapter "GF's response to COVID-19" contains more details.



GF views the absence rate as a key indicator of employee well-being and therefore monitors it closely.⁸ The company-wide absence rate decreased slightly year-on-year, from 3.46% in 2019 to 3.45 in 2020. This equaled 8.0 absence days per headcount. Around 97% of absences were unrelated to work. Nevertheless, GF did not meet its absence rate target for year-end 2020. A comprehensive analysis is needed to fully understand the underlying reasons.

As part of the [Sustainability Framework 2025](#), GF would like to measure how its employees feel as part of the organization. From 2022 onward, it will therefore conduct an employee engagement survey every two years in all three divisions.

Corporate citizenship

GF supports and promotes cultural and social programs at its various locations as well as activities that contribute to the common good. In 2020, it spent around CHF 2 million at the Corporation level on social engagement activities in addition to the donations (around CHF 900'000) made by the individual locations. The biggest contributions in 2020 went to the GF-owned foundations [Clean Water](#), [Klostergut Paradies](#), and [Iron Library](#). In addition, several GF companies supported local activities by making substantial contributions.

Improved access to clean drinking water

GF's Clean Water Foundation has supported a total of 155 drinking water projects worldwide since 2002. To date, GF has invested more than CHF 11 million and improved the lives of more than 300'000 people by providing them with better access to safe drinking water. In 2020, the Clean Water Foundation granted CHF 400'000 to projects in Indonesia, Malawi, Uganda, Tanzania, Honduras, and Peru. Most of the projects focus on improving infrastructure for water filtration and water distribution in rural communities and for hospitals. Water Mission, a non-profit organization in Charleston (USA) and a trusted partner of GF's Foundation for the past ten years, conducted most of these projects. GF's collaboration with Water Mission extends beyond donations and also encompasses providing engineering design support for local installations as well as offering significant discounts on GF equipment.

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

Klostergut Paradies and Iron Library Foundation

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

The Iron Library and GF Corporate Archives, managed by one team, jointly preserve GF's historical and cultural heritage, whose roots go back to the 18th century. In 2020, the digital offerings included over 1'000 digitized volumes totaling more than 60'000 pages.



Klostergut Paradies



The Iron Library

- ¹ Current laws and regulations in some other countries limit the flexibility of adapting employment conditions to expectations.
- ² Examples include, but are not limited to, gender, race, skin color, origin, disability, religion, sexual orientation, political affiliation, and familial status.
- ³ Copyright by the Franklin Covey Corporation. The focus is on reinforcing a proactive attitude, an outcome-oriented mind-set, goal orientation, shared vision, listening and understanding, and solving problems by celebrating different points of view and each individual team member's qualities and skills.
- ⁴ By 2021 at the latest, according to OHSAS 18001 (Occupational Health & Safety Assessment Series).
- ⁵ The shown target achievement calculation and the absolute five-year development of the KPIs is a like-for-like comparison. This means that divested facilities are not included for 2019 and all the previous years.

- ⁶ Information in the “Accident rate” chart changed compared to the data reported in the Sustainability Report 2019 due to: 1) divested GF Casting Solutions facilities were taken out of the target achievement calculation for all the years to ensure data comparability over time, 2) 50% equity share was applied as a correction to one GF Piping Systems company that is part of the Chinaust joint-venture – this facility was consolidated at 100% in 2019 and prior.
- ⁷ Personnel from temporary employment agencies join the company on very short notice and support GF for a defined timeframe.
- ⁸ Information in the “Absence rate” chart changed compared to the data reported in the Sustainability Report 2019 due to: 1) divested GF Casting Solutions facilities were taken out of the target achievement calculation for all the years to ensure data comparability over time, 2) 50% equity share was applied as a correction to one GF Piping Systems company that is part of the Chinaust joint-venture – this facility was consolidated at 100% for the figures shown for 2019 and prior.

Environment and energy

Environmental challenges such as climate change, the rise in energy demand, the finite nature of fossil fuels, the scarcity of raw materials, and waste disposal practices are challenging businesses to rethink their production processes and contribute toward sustainable development.

Our footprint

GF has assessed the environmental effects of its direct operations and found that energy consumption, the resulting GHG emissions, as well as the waste generated in production are the largest components of its environmental footprint.¹ From a manufacturing point of view, GF's impact on water consumption is less relevant, because most of the processes are not water-intensive. However, managing the water footprint in a sustainable way is a topic of key importance for some of GF's stakeholders and customers. GF Piping Systems provides solutions for optimal water management, which means that GF plays a crucial role in this regard, especially in water-scarce areas.

The Sustainability Targets 2020 GF set in 2015 included **environmental targets**, which set GF on a journey of optimizing its manufacturing processes. These targets focused on reducing energy consumption and CO₂-equivalent (CO₂e) emissions, non-recycled waste, and water consumption in water-scarce areas.² These targets were binding for all GF production facilities worldwide. A variety of measures defined since 2015 resulted in several projects being implemented to achieve the reduction targets by 2020.

In 2020, short-time work, the temporary closure of certain facilities, and a pandemic-related decrease in sales impacted environmental data. At the same time, many GF facilities continued to implement measures to improve their ecological efficiency and to reduce the overall consumption of energy and water and the generation of waste. Figures for 2020 reflect the combination of these two developments.

The GF Corporate Environmental Policy is the foundation on which GF bases its environmental management activities.

→ [GF Corporate Environmental Management Policy](#)

Energy and related GHG emissions

Energy consumption and related GHG emissions are of high relevance for GF based on the specifics of its business. Care needs to be taken to avoid potential negative environmental impacts. For GF's operations, this means taking steps to consume energy more efficiently, to promote the use of renewable energy sources, and to evaluate measures to self-generate renewable energy on-site.

At year-end 2020, 84% of GF's production facilities had environmental management systems (EMSs) in place and were certified to ISO 14001, an internationally recognized standard for such systems. Additionally, the EMSs of eight facilities of GF Piping Systems and GF Casting Solutions are certified to ISO 50001.³ These systems promote the efficient use of resources and enable the facilities to take immediate action if consumption data show significant deviations from the average. These facilities account for 49% of GF's total energy consumption.

In addition, 90% of GF's production facilities and a number of sales companies have in place quality management systems certified to ISO 9001 and IATF (ISO TS) 16949.

Energy consumption

In the year under review, GF's net energy consumption decreased by 13.2% (2.5% pro rata) to 3.1 million gigajoules (GJ), while the order intake decreased by 14.4% relative to 2019.⁴ Although COVID-19-related measures contributed to this decline, it was mainly driven by a 14.0% year-on-year decrease in electricity consumption (3.8% pro-rata). Various small- to medium-size energy saving projects contributed to the reduction.

Beyond the aforementioned factors, a number of organizational changes made in 2019 influenced GF's energy consumption and other environmental KPIs in 2020. For example, GF Machining Solutions' new building in Biel (Switzerland) meets advanced energy-efficiency standards and contributed significantly to the division's energy efficiency index in 2020. At the same time, two facilities in the United States and China increased their production capacity, resulting in higher energy consumption.

GF's **Sustainability Targets 2020** included increasing energy efficiency and reducing GHG emissions, both by 10%. During the last five years, the three divisions' production facilities implemented 100 energy-efficiency projects, 20 of them in 2020.

GF Piping Systems' sites in Little Rock and Bakersfield (both in the USA) implemented a range of energy-efficient lighting projects throughout their facilities. These projects achieved annual electricity savings of 560 MWh and 244 MWh respectively, which represents a reduction of 3.5% of the corresponding GHG emissions and 3.5% of the facilities' total annual energy consumption.

Climate change score from CDP

In the 2020 CDP reporting cycle, GF improved its climate change score from B to A- (Leadership level).



Comparison of the new LED lighting (left) and the old induction lighting (right) at GF Harvel in Little Rock.

GF Casting Solutions' facility in Mills River (USA) also implemented a number of environmental improvement measures in 2020. One of them was a larger heat capturing project. In the third quarter of the year, a new device was installed to reuse and distribute the heat to the compressor room and the tooling shop. This measure contributes to the reuse of 108 MWh annually. The second device will be installed in 2021, which is expected to deliver additional savings.



A new heat exhaust from air compressor at GF Linamar in Mills River.

In Kunshan (China), the GF Casting Solutions site was rewarded with a "Green Plant" certification for its efforts to meet a strict environmental standard set by the Chinese government. The measures implemented at the facility in the areas of energy, land, and materials use, waste management, and clean production impressed the team of external experts and government assessors. GF's Kunshan facility was one of the first in the Juangsu province to be granted the "Green Plant" designation.



The project team at GF Casting Solutions Kunshan that led the efforts to obtain the "Green Plant" status.

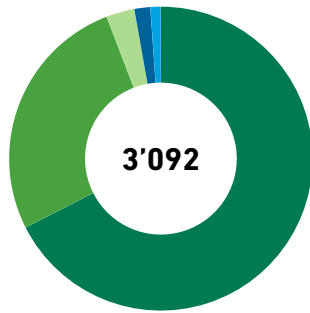
Composition of energy sources

Besides the amount of energy consumed, the composition of energy sources is equally relevant to GF's environmental footprint.

GF Casting Solutions' strategic shift in recent years to exit the European iron-casting business was the main contributor to the change in energy composition from 2018 to 2020. Since 2014, lignite is no longer used in GF operations and therefore not shown in graphs anymore.⁵

Energy sources 2020

In 1'000 GJ

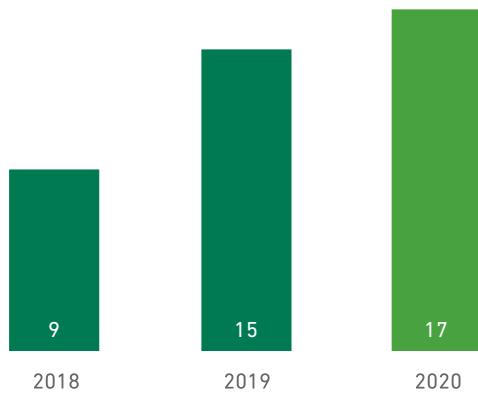


- 67.5% Electricity
- 26.7% Natural gas, biogas, fuel oil
- 3% Coke
- 1.7% Fuel use (for internal transportation)
- 1.1% Other energy sources

Renewables met 17% of GF's total energy consumption in 2020 (up from 15% in 2019). The vast majority (95%) was due to the purchase of 504'300 GJ of renewable electricity, primarily from hydro power and wind turbines. The remainder of the renewable energy was self-generated hydro and solar power as well as purchased renewable district heat.⁶

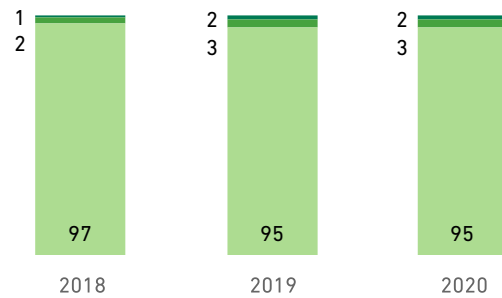
Renewable energy (incl. certified green electricity)

In %



Renewable energy sources

In %



- Local district heat from renewable sources
- Self-generated from hydro power and solar power
- Renewable electricity purchased (mainly from hydro power and wind turbines)

To increase the share of renewables in GF’s energy mix, GF Casting Solutions purchased green electricity for the years 2020–2024 for its facilities in Austria, as well as for 2020 for its site in Suzhou (China). Two GF Piping Systems facilities in the United States and China started to install rooftop solar panels. The solar panels in China already meet 11% of the facility’s total electricity consumption. Currently, seven GF facilities generate their own solar or hydro power, while the majority of GF’s renewable energy is purchased.

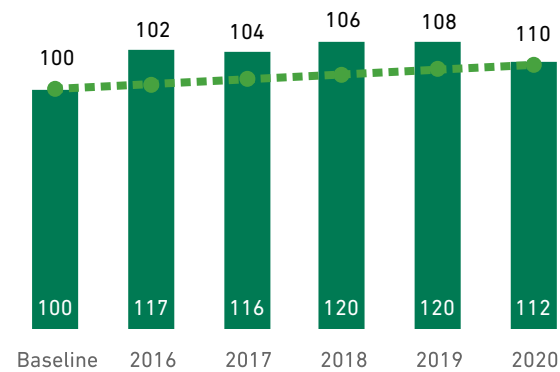
In the year under review, GF created a green electricity fund in Switzerland with the aim of insourcing the amount spent for renewable electricity certificates. Its facilities there pay an internal GF charge and can submit proposals for subsidies from the fund for energy-efficiency measures and the self-generation of renewable energy. Based on the experience in Switzerland, in 2021, GF will assess whether to extend to fund to other countries.

For the next five years, exploring ways to substitute electricity and fossil fuels with renewable sources will remain a high priority on GF’s agenda. Several assessments were conducted in 2020 with the goal of implementing resulting initiatives as part of the [Sustainability Framework 2025](#).

Target achievement: energy efficiency

Energy efficiency index

Production volume⁷ per energy consumption



● Target line

Over the last five years, GF met its energy-efficiency target, which was made possible thanks to positive contributions of the three divisions.⁸

GF’s production output and energy consumption declined in 2020. Energy efficiency declined slightly year-on-year, but the trend was still in line with the 2020 target. The reason was that many facilities gradually reduced production capacity in the first half of 2020 (due to COVID-19), whereas energy consumption did not decrease at the same pace. A production facility not operated at full capacity generally has a lower efficiency.

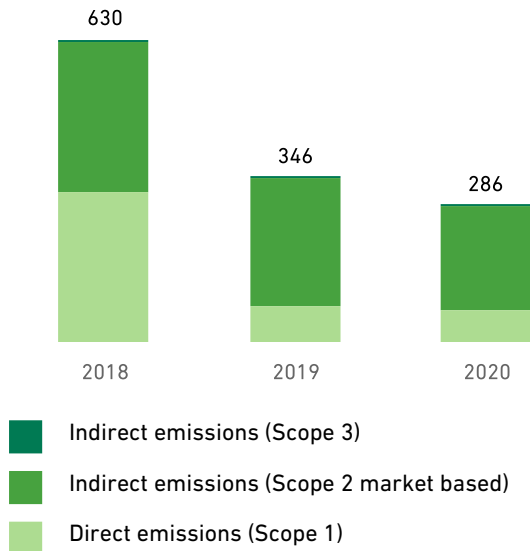
As in the previous years, in 2020, GF organized a virtual sustainability conference to promote cross-facility and cross-divisional information sharing on energy efficiency and other topics.

2020 marked the end of the Sustainability Targets 2020. Consequently, GF evaluated the measures it had implemented over the five-year period and assessed their contribution to target achievement. One of the new [targets for 2025](#) focuses on reducing GHG emissions by 12.5% over the next five-year period compared with the baseline. To achieve this ambitious target will require a combination of energy-efficiency measures and a clear strategy on renewable energy. GF’s Corporate Sustainability Team, in close collaboration with the divisions and the facilities, is working on developing a roadmap to achieve this target by the end of 2025.

Emissions

Total GHG emissions

In 1'000 tonnes



GF distinguishes between the sources of its GHG emissions to better contribute to the international community's efforts to meet the goals of the Paris Agreement.

Total GHG emissions decreased by 17% in 2020 (11% pro rata). Scope 1 emissions decreased by 12% year-on-year (0% pro rata).⁹ Scope 2 market-based emissions declined by 18% (11% pro rata).¹⁰ Scope 3 emissions fell by 67%. Currently, GF's Scope 3 emissions calculation consists only of business travel, which declined significantly due to COVID-19 travel restrictions in place in 2020.

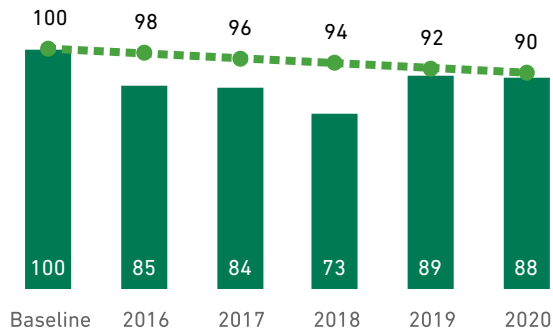
The majority (76%) of GF's GHG emissions stem from electricity consumption and are classified as Scope 2 emissions. The remaining 24% consists of Scope 1 emissions resulting from the consumption of fossil fuels at GF's operations (over 23%) and Scope 3 emissions from business travel (less than 1%).

In the year under review, GF Casting Solutions invested in Guarantees of Origin for its facilities in Austria and for one site in China.¹¹ The purchase covered 37% of the division's electricity consumption and contributed positively to reducing GF's overall Scope 2 emissions. Additionally, GF Piping Systems [partnered with Land Life Company](#) to offset the Scope 1 footprint of three of its American sites by planting 14'000 trees in California, Texas, and Oregon.

Target achievement: CO₂e emissions

GHG emissions intensity index

CO₂e emissions per production volume⁷



● Target line

In the year under review, GF achieved the target GHG intensity line. Compared to 2019, more Guarantees of Origin were purchased, however this could not fully compensate for the drop in the production volume.

GF achieved its five-year GHG emission intensity target. Absolute GHG emissions in 2020 were 16% lower than the baseline. This is mainly attributable to the energy-efficiency contributions by GF Piping Systems (around 33%) and Casting Solutions (around 65%). The impact of GF Machining Solutions accounted for around 2%.

For the **next five-year strategy**, GF aims to decrease its GHG emissions by 12.5% compared to the baseline, a reduction trajectory in line with the Science-Based Targets initiative (SBTi).¹² As GF does not yet report comprehensively on its Scope 3 emissions, a project is underway to quantify 10 of the 15 relevant Scope 3 emissions categories. Based on the findings, GF will set a reasonable reduction target for its customers and suppliers. GF plans to submit its targets to SBTi for approval in 2022.

Natural resources and materials

Ensuring prudent and responsible resource and waste management is important for GF. It therefore aims to redesign its production processes in a holistic way in order to close material loops. In principle, the castings of GF Casting Solutions are 100% recyclable whether they are made of aluminum or magnesium, and these materials are reused in a circular fashion. Additionally, GF integrates re-use opportunities when retrofitting its buildings. Identifying options for recycling and for applying circular economy approaches to the materials used by the other two divisions is on GF's sustainability agenda.

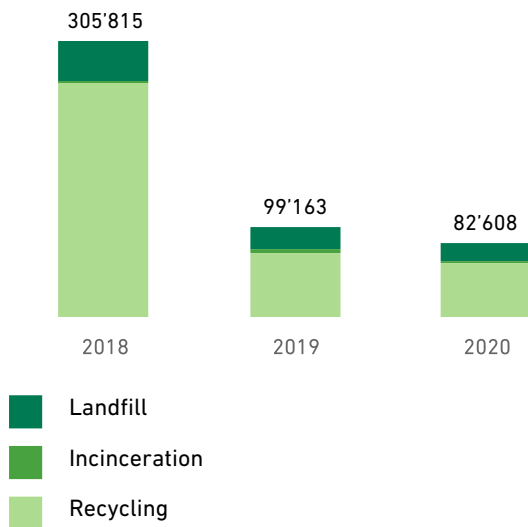
Waste materials from production processes can be used as a resource for other industrial companies and therefore reduce the overall demand for energy and raw materials. Examples include using GF's manufacturing by-products as a substitute for fossil fuels or as an input for the production of cement. GF is constantly on the outlook for such opportunities.

In the year under review, the total amount of waste decreased by 17% (9% pro rata). The share of hazardous waste increased from 9% to 12%, with 88% of the total waste being non-hazardous. The increase in hazardous waste was mainly due to technical problems at one GF Casting Solutions site. During the manufacturing process, oil is mixed with water. Before releasing the water from the emulsion, a machine separates both materials. As a result, the oil is disposed of as hazardous waste and the water is released to the local sewage systems. During 2020, the machine that separates the emulsion had technical issues. Consequently, the total amount of the oil-water emulsion was disposed of as hazardous waste. The site has fixed the issue. Hazardous waste is therefore expected to decline in subsequent years. The majority of GF’s waste is recycled (71%).

Other initiatives that focus on both the sourcing of reusable materials and components as well as on revising GF’s waste management processes to enable reuse are on the three divisions’ agenda.

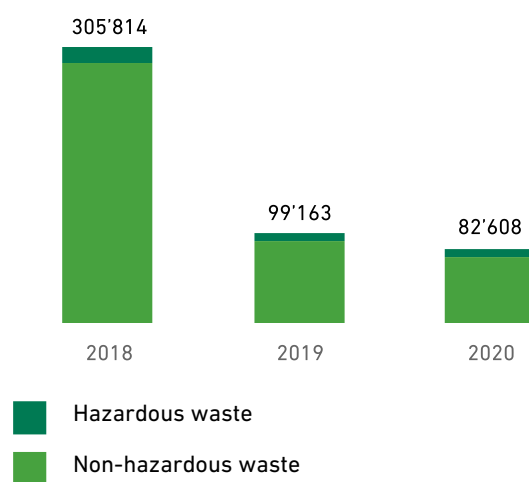
Waste disposal

In tonnes



Composition of waste

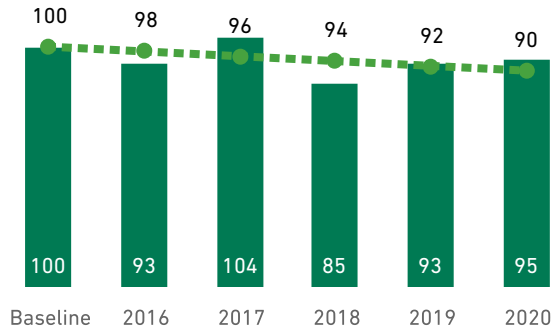
In tonnes



Target achievement: unrecycled waste¹³

Unrecycled waste intensity index

Unrecycled waste per production volume⁷



● Target line

Although absolute waste volumes decreased during 2020, the production volume decreased at a higher pace, which led to GF not achieving its unrecycled waste target.

The [Sustainability Framework 2025](#) places a major emphasis on finding ways to improve the disposal of GF's waste. The 2025 target aims to decrease waste sent to landfill and incineration by 20% compared with baseline.

Six production facilities of GF Casting Solutions and two production facilities of GF Piping Systems account for 95% of GF's total hazardous waste. The Corporation will set a target to reduce these eight facilities' hazardous waste by 2025.

Water footprint

Water is essential to life, so good stewardship of this finite resource is important to GF. One of GF's Sustainability Targets 2020 was therefore to consume 10% less water in water-stressed and water-scarce areas by 2020. In early 2017, an analysis was conducted of GF production facilities which are located in water-stressed areas, using the World Resources Institute (WRI) tool.¹⁴ The GF [water target for 2020](#) was relevant for the six sites (all are part of GF Piping Systems). Three are in China and three in the United States. These facilities monitored their water consumption carefully over the past five years and implemented improvement measures accordingly.

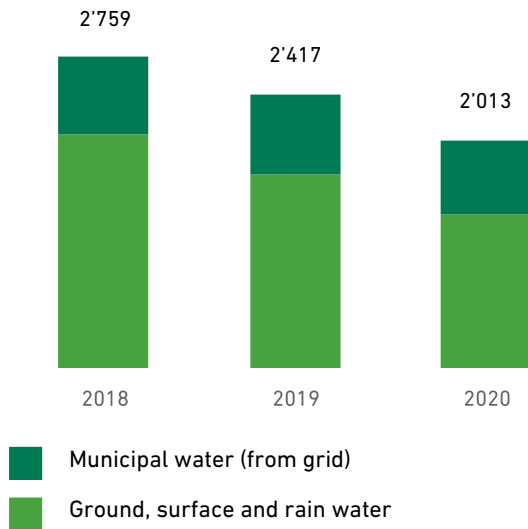
In general, GF production facilities do not consume large amounts of water. They use it in closed-loop cycles for cooling purposes. The majority of the water is discharged to municipal wastewater treatment systems. All production sites comply with applicable laws and regulations governing wastewater discharge. Furthermore, GF Casting Solutions sites comply with additional wastewater-discharge requirements. In prior years, a GF Piping Systems site in Dallas (USA) lost water because of a faulty system in a chiller. After replacing the old single compressor system with a new dual one, this facility's water consumption decreased by 2'259 m³ (10.6%) in 2020.

Water security score from CDP

In the 2020 CDP reporting cycle, GF improved its water security score from B to A- (Leadership level).

Water consumption

In 1'000 m³



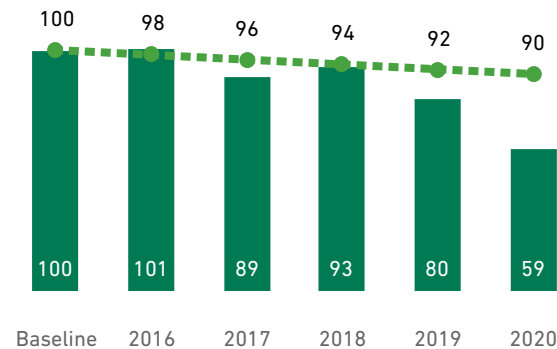
Another GF Piping Systems site, in Indonesia, fixed its leakages in several areas and was able to reduce its water consumption in 2020 by 3'639 m³ (15.2%).

The total water consumption for all GF facilities decreased by 17% in 2020 compared with 2019 (13% pro rata). The reduction reflects in part the improvement measures realized by the facilities.

Target achievement: water in water-stressed areas

Water intensity index

Water consumption per production volume⁷



GF's production plants located in water-stressed areas reduced their water consumption beyond the targeted reduction path of 2% per year. Compared with the baseline, the facilities reduced their overall water consumption by 9%.

In the year under review, one facility of GF Piping Systems' Chinaust joint venture optimized its cooling cycle and the overall water consumption on site, which contributed to an 18% reduction in water usage relative to 2019. The site is one of GF's large water consumers, so the reduction helped achieve the target in 2020.

For the strategy cycle 2025, GF set a goal to reduce water intensity by 20% in the areas with high water stress compared with the baseline. This target is binding for a total 15 facilities across all three divisions. GF again used the WRI water aqueduct tool to determine which of its facilities are located in a water-stressed area.

¹ The assessment was initiated in 2015 as part of the definition of the Sustainability Targets 2020 and again in early 2018 as part of a materiality assessment process. For the Sustainability Framework 2025, a new materiality assessment was conducted in mid-2019 and finalized during 2020. As a result, the same environmental topics remain of high importance as in the 2018 assessment.

- ² The waste target includes both hazardous and non-hazardous waste.
- ³ The following facilities are ISO 50001 certified: GF Piping Systems: Deka GmbH and GF Fluoropolymer Products GmbH (both in Germany), GF Casting Solutions: Kunshan, Suzhou (both in China), Leipzig (Germany), Altenmarkt, Herzogenburg Services, and Herzogenburg HPDC (all in Austria).
- ⁴ To ensure data comparability, the pro rata number does not include facilities that were divested and transferred in 2019 and therefore provides information on the underlying trend.
- ⁵ In the previous years, the category was reported as "Coke, lignite."
- ⁶ Biogas was only purchased in 2019 and 2018. As its share of the total renewable energy is less than 0.01%, it is excluded from the graph.
- ⁷ GF's divisions define production volume according to the nature of their particular business. GF Piping Systems defines it as "metric tonnes produced," GF Casting Solutions as "gross value added" (operating income less the cost of materials and products, changes in inventory, and operating expenses), and GF Machining Solutions as "hours worked."
- ⁸ The energy efficiency index is equal to the inverse calculation of the energy intensity required by the GRI (energy consumption, the numerator, divided by production volume, the denominator). Energy consumption includes all sources of energy that are consumed within the organization (such as electricity and fuel). Energy that is used for business travel (such as fuels for company cars and for planes) is therefore not included.
- ⁹ GF has Scope 1 emissions because it consumes natural gas, coke, and oil (for example, for heating and process heat) as well as petrol, LPG, and CNG (for example, for company transportation).
- ¹⁰ Indirect emissions (Scope 2) stem from purchased and consumed energy at GF plants and are not emitted by the company itself. GF publishes both the amount of Scope 2 market-based emissions and location-based emissions. Market-based emissions figures show emissions with instruments that were applied to offset them. For example, the purchase of green energy certificates is considered an instrument and is directly subtracted from the total amount of emissions.
- ¹¹ Guarantees of Origin (GO or GoO) are voluntary trading instruments evidencing the origin of electricity generated from renewable energy sources.
- ¹² The Science-Based Target initiative developed reduction paths for global GHG emissions to stay in line with the Paris Climate Agreement. See [SBTi website](#) for more details.
- ¹³ Due to data quality improvement at one site of GF Casting Solutions, waste and recycling data changed slightly for 2018 and 2019. The corrections impact the progress to meet the annual unrecycled waste target. The specific values for both years changed, however the general development did not, i.e. the unrecycled waste target was achieved in 2018, but not in 2019.
- ¹⁴ www.wri.org/our-work/project/aqueduct.

Sustainability performance

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Social performance indicators	p. 112
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Economic performance indicators

CHF million	2020	2019	2018	2017	2016	2015
Order intake	3'160	3'692	4'521	4'274	3'749	3'662
Orders on hand at year-end	514	563	623	773	614	612
Income statement						
Sales	3'184	3'720	4'572	4'150	3'744	3'640
EBITDA	299	374	529	491	443	422
Operating result (EBIT) before one-offs	185	281	382	352	311	296
One-offs	19	46				
Operating result (EBIT)	166	235	382	352	311	296
Net profit/loss after minorities	116	173	281	252	216	188
Cash flow						
Cash flow from operating activities	342	318	397	410	400	328
Free cash flow before acquisitions/divestitures	230	137	147	204	231	190
Free cash flow	224	132	-7	130	135	188
Balance sheet						
Assets	3'445	3'344	3'444	3'610	3'202	3'083
Liabilities	2'056	1'906	2'016	2'241	2'002	1'953
Equity	1'389	1'438	1'428	1'369	1'200	1'130
Net working capital	707	856	926	899	838	819
Invested capital (IC)	1'313	1'473	1'494	1'466	1'333	1'279
Net debt	117	232	238	183	214	238
Key figures						
Return on equity (ROE) %	7.9	12.0	19.9	20.1	19.3	17.7
Return on invested capital (ROIC) %	9.3	12.4	22.4	20.3	19.3	18.9
Return on sales before one-offs (EBIT margin before one-offs) %	5.8	7.6	8.4	8.5	8.3	8.1
Return on sales (EBIT margin) %	5.2	6.3	8.4	8.5	8.3	8.1
Asset turnover	2.3	2.5	3.1	3.0	2.9	2.8
Cash flow from operating activities in % of sales	10.7	8.5	8.7	9.9	10.7	9.0
Research and development						
Investments into research and development	112	127	127	112	104	102
Employees						
Employees at year-end	14'118	14'678	15'027	15'835	14'808	14'424
Europe	7'792	8'373	8'721	9'658	8'845	8'783
Asia	3'604	3'545	3'725	3'807	3'713	3'502
– Thereof Rest of Asia	549	548	526	520	497	371

Americas	1'938	1'922	1'740	1'503	1'348	1'262
Rest of world	784	838	841	867	902	877

Social performance indicators

Social performance indicators ¹	Unit	2020 ²	2019 ²	2018 ³	2017	2016
Employees						
Number of employees	Headcount	14'118	14'678	15'027	15'835	14'808
	FTE ⁴	13'562	14'073	14'413	15'163	14'105
Female employees	Headcount	2'812	2'958	2'512	2'347	2'245
	FTE	2'764	2'851	2'397	2'213	2'055
	% of headcount	19.9	20.2	16.7	14.8	15.2
Women in management positions ⁵	FTE	97	100	88	90	95
	% of total management positions	15.8	16.4	14.8	14.2	17.0
Women on the Executive Committee	Number	0	0	0	0	0
Women on the Board of Directors	Number	2	2	2	2	2
	%	22.2	22.2	22.2	22.2	22.2
Part-time employees	Headcount	396	400	457	373	398
	%	2.8	2.7	3.0	2.4	2.7
Female part-time employees	Headcount	261				
	% of part-time employees	66				
Employees younger than 30	% of headcount	15	17	19	19	19
Employees between 30 and 50	% of headcount	59	57	54	53	53
Employees older than 50	% of headcount	26	26	27	28	28
Student interns	Headcount	104	133	174	145	182
Apprentices	Headcount	387	446	469	525	540
Employees with disabilities	Headcount	114	129	280	298	308
	%	0.8	0.9	1.9	1.9	2.1
Total departures ⁶	Headcount	2'019	2'162	1'796	1'603	1'512
Total employee fluctuation ⁷	%	14.6	15.8	11.9	11.3	11.6
Employee fluctuation, unwanted by GF	%	4.0	5.6	4.0	4.1	3.7
Employee surveys ⁹	Number of employees surveyed	3'289	5'448	6'341	6'987	1'300
Investigated incidents of discrimination ¹⁰	Number	2	1	3	1	1
Employees under collective bargaining agreement	Headcount	8'178				
	%	58				
Training and professional development						

Training and professional development	Number of GF employees with training (headcount)	9'394	10'517	11'558	12'192	10'635
	%	66.5	71.7	76.9	77.0	71.8
Training days	Days worked	18'860	30'527	36'974	38'822	33'160
	Days per employee	1.3	2.1	2.5	2.5	2.2
Health and safety						
Work-related accidents involving injury of GF employees	Number	180	282	425	407	468
Work-related accidents involving injury of leased personnel	Number	22	56	133	145	95
Work-related accidents involving injury of other third parties	Number	4	7	10	14	0
Sustainability Targets 2020: Accident rate	per 1'000'000 hours worked	7.9 ⁸	9.7	10.4	10.2	12.5
Sustainability Targets 2020: Target line accident rate ¹¹	per 1'000'000 hours worked	11.2	11.7	12.3	12.9	13.4
Fatalities, work-related	Number	0 ⁸	0	0	0	0
Absence days due to work-related accidents or illness	Days worked	3'593	6'605	8'675	6'750	7'542
Absence rate due to work-related accidents or illness	% of total days worked	0.1	0.2	0.2	0.2	0.2
Total absence days	Days worked	113'478	127'228	148'361	139'407	133'383
Sustainability Targets 2020: Total absence rate	% of total days worked	3.45	3.46	3.14	3.08	3.11
Sustainability Targets 2020: Target line absence rate ¹¹	% of total days worked	2.83	2.89	2.96	3.02	3.08
Community						
Order volume from workshops employing disabled people	CHF million	2.5	2.6	2.9	2.4	2.2
Charitable donations	CHF million	2.9	3.5	4.0	4.5	4.0

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

² Due to the divestment (as of 30 September 2019) of the iron plant in Herzogenburg of GF Casting Solutions, the social performance indicators presented here include the data from the respective site until end of September 2019. In the calculation of the target-relevant social indicators for all the years in this overview, all divested sites are excluded.

³ The 2018 social performance indicators here are presented according to the consumption at two divested plants of GF Casting Solutions (Singen and Mettmann, both Germany) while part of the GF Corporation (11 months of 2018). The reduction in the KPIs is mainly a result of the divestment of the sites of GF Casting Solutions in 2018 and 2019.

⁴ FTE stands for Full Time Equivalents.

⁵ Management positions are defined as members of the management board of each business entity or managers who report to a managing director.

⁶ The number of departures is tracked on site level and includes therefore internal transfers, and natural departures, e.g. retirements.

⁷ The relocation of GF Machining Solutions in Switzerland, the divestments, and the transfer of the GF Casting Solutions sites in Austria and Germany resulted in an increase in the number of departures and the fluctuation rate in the last years.

⁸ 2020 PwC assured. The 2019 PwC assurance process followed the same scope and set of KPIs as 2020. Please receive further details in the 2019 Sustainability Report, by clicking on the following link: <https://sustainability-report.georgfischer.com/19/en/social-performance-indicators/>.

⁹ The figure represents the number of employees who were requested to participate in the survey.

¹⁰ The reported cases that occurred in 2020 were investigated, and both cases were resolved with appropriate measures taken.

¹¹ The target line is calculated linearly based on the baseline data and according to the defined target.

Environmental performance indicators

Environmental performance indicators ¹	Unit	2020	2019 pro rata ²	2019 ³	2018 ⁴	2017	2016
Energy							
Gross energy consumption	1'000 GJ	3'100	3'172	3'565	6'823	6'941	6'605
Electricity	1'000 GJ	2'087	2'170	2'427	3'249	3'296	3'168
Natural gas, biogas, fuel oil	1'000 GJ	824	816	949	1'363	1'247	1'205
Coke	1'000 GJ	93	101	101	2'092	2'265	2'121
Fuel use (for internal transportation)	1'000 GJ	53	62	65	97	110	92
Other energy sources	1'000 GJ	34	22	22	22	23	19
Energy sold	1'000 GJ	-8	-1	-1	-82	-103	-96
Net energy consumption	1'000 GJ	3'092	3'171	3'564	6'742	6'838	6'509
Renewable energy (incl. green electricity)	%	17	17	15	9	10	11
Sustainability Targets 2020: Energy efficiency index ³ (status at year-end)		112	120	120	120	116	117
Sustainability Targets 2020: Target line energy efficiency index ⁵ (production volume ⁶ per energy consumption)		110	108	108	106	104	102
GHG emissions (in CO₂e)⁷							
Total CO ₂ e emissions ("market based" approach)	1'000 tonnes CO ₂ e	285	319	344	630	668	610
Scope 1 (Direct emissions: fuel-related energy consumption)	1'000 tonnes CO ₂ e	68 ⁸	68	77	312	325	307
Scope 2 market-based ⁹ (Indirect emissions: electricity and district heating)	1'000 tonnes CO ₂ e	216 ⁸	244	263	312	337	299
Scope 2 location-based ¹⁰ (Indirect emissions: electricity and district heating)	1'000 tonnes CO ₂ e	297 ⁸	303	333	411	468	438
Scope 3 ¹¹ (Indirect emissions: business travel)	1'000 tonnes CO ₂ e	2	6	6	6	7	4
Sustainability Targets 2020: GHG emission intensity index ³ (status at year-end)		88	89	89	73	84	85
Sustainability Targets 2020: Target line GHG emission intensity index ⁵ (CO ₂ e emissions ¹² per production volume ⁶)		90 ⁸	92	92	94	96	98
Air emissions							
Nitrogen oxides (NO _x)	1'000 tonnes	0.01	0.01	0.01	0.05	0.04	0.03
Sulfur oxides (SO _x)	1'000 tonnes	0.00	0.01	0.01	0.01	0.01	0.01
Volatile organic compounds (VOCs)	1'000 tonnes	0.05	0.05	0.05	0.06	0.05	0.06
Particular matter	1'000 tonnes	0.002	0.001	0.001	0.005	0.001	na
Water and wastewater							
Total water consumption	1'000 m ³	2'013 ⁸	2'305	2,417	2'759	2'966	2'808
City water from public supply	1'000 m ³	648	635	702	697	662	633
Ground and rain water	1'000 m ³	1'365	1'670	1'715	2'062	2'304	2'175
Wastewater volume	1'000 m ³	1'772	1'926	1'961	1'961	2'098	1'977

Wastewater to sewage systems	1'000 m ³	674	715	750	814	944	897
Wastewater returned to nature, unpolluted	1'000 m ³	1'098	1'211	1'211	1'147	1'153	1'081
Sustainability Targets 2020: Water intensity index (status at year-end)		59	80	80	93	89	101
Sustainability Targets 2020: Target line water intensity index ⁵ (water consumption per production volume ⁶)		90	92	92	94	96	98
Waste and recycling							
Total waste	1'000 tonnes	83 ⁸	91	99	306	326	314
Normal waste, recycling	1'000 tonnes	53	59	67	245	263	249
Normal waste, landfill or incineration	1'000 tonnes	19	24	24	43	44	45
Hazardous waste	1'000 tonnes	10 ⁸	8	9	18	18	20
Hazardous waste, recycling	1'000 tonnes	6	4	3	16	16	14
Hazardous waste, storage or incineration	1'000 tonnes	4	4	5	2	2	6
Recycled waste as % of total waste	%	72	69	71	85	86	84
Sustainability Targets 2020: Unrecycled waste intensity index ³ (status at year-end)		95	93	93	85	104	93
Sustainability Targets 2020: Target line Unrecycled waste intensity index ⁵ (non-recycled waste per production volume ⁶)		90	92	92	94	96	98
Business trips							
Air travel ¹¹	1'000 km	15'603	50'465	50'631	49'603	52'759	31'863
Monetary values							
Expenditure for environmental protection	CHF million	10	4	5	18	18	15
Energy costs	CHF million	65	68	72	130	128	103
Water and wastewater costs	CHF million	2.0	2.3	2.5	3.5	3.0	2.5
Waste disposal costs and recycling credits	CHF million	1	3	3	9	8	8

¹ The environmental performance indicators include all GF production companies.

² To ensure data comparability and consistency over time, the data in the "2019 pro rata" column show how the comparable consumption would have looked in 2019 without the divested and the transferred sites of GF Casting Solutions in Austria and Germany.

³ Due to the divestment of the iron plant of GF Casting Solutions in Herzogenburg (Austria) as of 30 September 2019, the environmental performance figures are presented according to the consumption at this site while still part of the GF Corporation (9 months of 2019). The calculation of the target-relevant environmental indicators for all the years in this overview excludes all divested sites.

⁴ The 2018 environmental performance indicators include the consumption of the two plants of GF Casting Solutions (Singen and Mettmann, both Germany) while part of the GF Corporation (11 months of 2018). The reduction in the KPIs is mainly a result of the divestment of the sites of GF Casting Solutions in 2018 and 2019. The Sustainability Report 2019 shows in the column 2018 pro rata how the 2018 data would have looked without the two divested sites.

⁵ The target line is calculated linearly based on the standardized baseline consumption (=100) and according to the defined target.

⁶ The production volume is defined based on the specificities of the businesses of the individual divisions: as "produced tonnes" for GF Piping Systems, as "gross value added" (it includes all operating income subtracting the costs of materials and products, changes in inventory, and operating expenses) for GF Casting Solutions and as "hours worked" for GF Machining Solutions.

⁷ CO₂-equivalent is a unit used to transform other greenhouse gases into CO₂e (CO₂=1) according to their global warming potential. The applied emission factors are based on the GHG Protocol 2016.

⁸ 2020 PwC assured. The 2019 PwC assurance process followed the same scope and set of KPIs as 2020. Please see further details in the 2019 Sustainability Report, by clicking on the following link: <https://sustainability-report.georgfischer.com/19/en/environmental-performance-indicators/>.

⁹ Market-based emissions refer to specific emission factors, e.g. from local utility provider, and they account for market instruments such as guarantees of origin that might be purchased in order to reduce Scope 2 market-based emissions.

¹⁰ Location-based emissions refer to the average emission factors of the area where the electricity consumption takes place, e.g. average emission factor of one country.

¹¹ Air travel data and related Scope 3 emissions were restated for all the years since 2017, as a more comprehensive data set is available. The disclosed figures cover over 90% of GF's workforce.

¹² For the purpose of this calculation, CO₂e emissions = Scope 1 + Scope 2 market-based emissions.

About the report

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Disclosure information

This report covers the reporting period from January 1 to December 31, 2020. It was prepared in accordance with the GRI Standards: Core option (2016).

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

Reporting cycle

Since 2005 and until 2018, a comprehensive Sustainability Report was published every other year, with an interim report published in the intervening years. Since 2019, GF publishes a comprehensive report on an annual basis. Sustainability Reports from previous periods are available on the [GF website](#) and in the [online version of the Corporate Archives](#). Additionally, information on energy consumption, GHG emissions, and GF's management of water as a resource is also provided annually to CDP (Carbon Disclosure Project). As of 2021, GF again participates in the S&P Global CSA (Corporate Sustainability Assessment), with the information covering the 2020 reporting period.¹

Scope of data collection and reporting

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

- As part of the strategic realignment of GF Casting Solutions and to strengthen its positioning in the aluminum and magnesium light-metal segments, the iron foundry in Herzogenburg (Austria) was divested as of September 30, 2019, and the site in Werdohl (Germany) was closed and production partially shifted to two other locations of GF Casting Solutions. Both facilities accounted for a significant share of GF's environmental footprint. For this reason and to ensure data consistency and comparability over time, the 2019 environmental indicators in this report are shown in two ways: including both facilities and the 2019 pro rata data excluding both facilities. The indicators relevant to calculate target achievement exclude both facilities for 2019 and all previous years.
- Two GF companies, Georg Fischer Mecco Eckel GmbH in Biedenkopf-Wallau (Germany) and Chinaust Plastics Ltd in Xian (China), joined the reporting of social and environmental indicators in 2020 for the first time. In line with the Corporate Instruction on sustainability management at GF, newly acquired companies have up to

three years to be integrated into the sustainability reporting. The contribution of both facilities to the total is small. Their data is included in the absolute figures presented in the KPI tables.

- In line with financial reporting, for one GF Piping Systems site in China that is part of the Chinaust joint venture (Shanghai Chinaust Plastics Corp Ltd), the equity share was applied in 2020 and as a correction for all previous years. As the contribution of this site to the total is small, restatement of data for previous periods is not necessary.

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

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

Scope and calculation of Sustainability Targets 2020

The target achievement for the environmental indicators is calculated in relation to production volume. Average consumption for the years 2013–2015 serves as a baseline to reflect a more realistic consumption trajectory.²

The Sustainability Targets were introduced in 2015 and had to be achieved within five years: by year-end 2020. In order to provide companies with a realistic timeframe for target attainment, companies that joined GF before 2017 are included in the calculation for the achievement of the Sustainability Targets 2020. Companies that joined later had individual targets. Business acquisitions, divestments, and closures can affect the results as well. Organizational adjustments that took place during 2019 are explained in the section “Scope of data collection and reporting.”

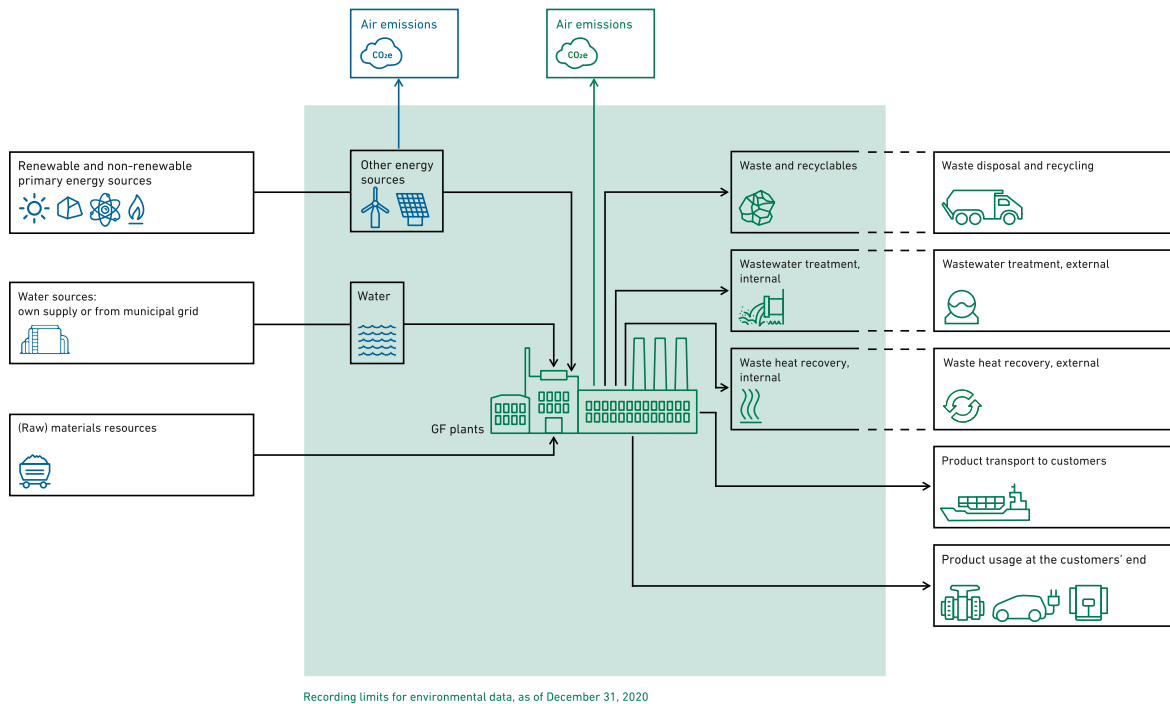
Economic performance indicators cover all of the companies under the scope of corporate consolidation, as reported in the GF Annual Report 2020.

In the year under review, GF had 137 companies. About 72% of them report their social and environmental indicators, which covers 95% of the production facilities and 96% of the total workforce.

The financial performance indicators follow Swiss GAAP FER principles (Swiss Generally Accepted Accounting Principles Accounting and Reporting Recommendations) and are consistent with those reported in the GF Annual Report 2020.

The social performance indicators presented in this report are based on the data collected from all sales and production companies worldwide with more than ten employees. They report this information to the sustainability teams at the divisional and corporate levels on a monthly and bi-annual basis using the Sustainability Information System. Environmental performance indicators are reported by the production companies according to the same cycle.

GF's environmental indicators are energy and water consumption (on the input side) and air emissions, waste, and wastewater (on the output side). GF also calculates the environmental impact of transportation at its facilities as well as business travel by plane or company car. The environmental footprint of purchased materials, the construction of facilities and buildings, as well as the use of products by customers are not yet included.



External assurance

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

- ¹ Formerly known as SAM CSA and Dow Jones Sustainability Rating.
- ² In any given year, some of the indicators may be influenced by random weather fluctuation, such as a cold winter, which translates into an increase in energy consumption for heating.

GRI content index

102 General Disclosures

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2020	Annual Report 2020	Other
Organizational profile					
102-1		Name of the organization	Landing page		
102-2		Activities, brands, products, and services	Corporate profile		
102-3		Location of headquarters	Worldwide presence		
102-4		Location of operations	Worldwide presence		
102-5		Ownership and legal form		Organization of GF GF share and shareholders	
102-6		Markets served	Corporate profile		
102-7		Scale of the organization	Worldwide presence	Key figures 2020	
102-8	RT-IG-000.B	Information on employees and other workers	Employees and society	Key figures 2020	
102-9		Supply chain	Social performance indicators Value chain Procurement and logistics		
102-10		Significant changes to the organization and its supply chain	Scope of data collection and reporting	Georg Fischer Ltd statement of changes in equity 4. Corporate Structure	
102-11		Precautionary principle or approach	Business conduct Topics of material importance		
102-12		External initiatives	CDP ranking on Climate Change and Water Security Value chain		UN Global Compact CDP
102-13		Membership of associations			UN Global Compact
Strategy					
102-14		CEO statement	Letter to GF's stakeholders		
Ethics and integrity					
102-16		Values, principles, standards, and norms of behavior	Business conduct		Values & purpose Code of Conduct
Governance					

102-18	Governance structure	Governance bodies	
Stakeholder engagement			
102-40	List of stakeholder groups	Stakeholder dialogue	
102-41	Collective bargaining agreements	Employee representation	
		Social performance indicators	
102-42	Identifying and selecting stakeholders	Value chain	
102-43	Approach to stakeholder engagement	Stakeholder dialogue	
		Topics of material importance	
102-44	Key topics and concerns raised	Stakeholder dialogue	
		Topics of material importance	
		Future developments: outlook on 2021	
		Employee satisfaction	
Reporting practice			
102-45	Entities included in the consolidated financial statements	Scope of data collection and reporting	Scope and principles of consolidation
102-46	Defining report content and topic boundaries	Topics of material importance	
102-47	List of material topics	Topics of material importance	
102-48	Restatements of information	Scope of data collection and reporting	
102-49	Changes in reporting	Topics of material importance	
		Scope of data collection and reporting	
102-50	Reporting period	Disclosure information	
102-51	Date of most recent report	Comprehensive version – GF Sustainability Report 2019	
		Short version – GF Sustainability Report 2018	
102-52	Reporting cycle	Reporting cycle	
102-53	Contact point	Contacts	
102-54	Claims of reporting in accordance with the GRI Standards	Disclosure information	
102-55	GRI content index	GRI content index	
102-56	External assurance	External assurance	

200 Economic Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2020	Annual Report 2020	Other
Economic performance					
103-1/2/3		Management approach disclosures	Letter to GF's stakeholders	Letter to the shareholders	
201-1		Direct economic value generated and distributed	Key figures for 2020	Georg Fischer Ltd income statement	
			Economic performance indicators	1.5 Income taxes	Key figures 2020
Indirect economic impacts					
103-1/2/3		Management approach disclosures	Value chain		
203-1		Infrastructure investments and services supported	Improved access to clean drinking water		
			GF's contribution to SDG 6		
Anti-corruption					
103-1/2/3		Management approach disclosures	Good governance		
			Value chain		
205-2		Communication and training about anti-corruption policies and procedures	Corporate compliance		
Anti-competitive behavior					
103-1/2/3		Management approach disclosures	Good governance		
206-1		Legal actions for anti-competitive behavior, anti-trust, and monopoly practices ¹			

¹ **Omission** GF is not aware of any legal actions against it for anti-competitive behavior, anti-trust, and monopoly practices that took place during the reporting period. GF can confirm that no fines or non-monetary sanctions were imposed on it in 2020.

300 Environmental Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2020	Annual Report 2020	Other
Materials					
103-1/2/3		Management approach disclosures	Topics of material importance, subpoint "Natural resources and materials"		GF Corporate Environmental Management Policy
			Sustainability Framework 2025		
			Natural resources and materials		
301-1		Materials used by weight or volume ¹			
Energy					
103-1/2/3		Management approach disclosures	Operational tasks over which GF has direct control		GF Corporate Environmental Management Policy
			Sustainability Targets 2020		GF Corporate E-mobility Policy
			Sustainability Framework 2025		
			Environment and energy		
302-1	RT-IG-130a.1	Energy consumption within the organization	Key figures for 2020		
			Sustainability Targets 2020		
			Energy consumption		
			Environmental performance indicators		
302-3		Energy intensity ²	Key figures for 2020		
			Sustainability Targets 2020		
			Target achievement energy efficiency		
			Environmental performance indicators		
302-4		Reduction of energy consumption	Key figures for 2020		
			Sustainability Targets 2020		
			Energy consumption		
			Environmental performance indicators		
Emissions					
103-1/2/3		Management approach disclosures	Operational tasks over which GF has direct control		GF Corporate Environmental Management Policy
			Sustainability Targets 2020		

		Sustainability Framework 2025	
		Emissions	
305-1	Direct (Scope 1) GHG emissions	Emissions	
		Environmental performance indicators	
305-2	Energy indirect (Scope 2) GHG emissions	Emissions	
		Environmental performance indicators	
305-3	Other indirect (Scope 3) GHG emissions	Emissions	
		Environmental performance indicators	
305-4	GHG emissions intensity	Key figures for 2020	
		Sustainability Targets 2020	
		Target achievement CO ₂ e emissions	
		Environmental performance indicators	
305-5	Reduction of GHG emissions	Key figures for 2020	
		Sustainability Targets 2020	
		Emissions	
		Environmental performance indicators	
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	Environmental performance indicators	
		Water and effluents	
303-1	Interactions with water as a shared resource	Operational tasks over which GF has direct control	
		Sustainability Targets 2020	
		Water footprint	
303-2	Management of water discharge-related impacts	Water footprint	2020 CDP water security questionnaire
303-3	Water withdrawal ⁵	Environmental performance indicators	
303-4	Water discharge ⁵	Water footprint	
		Environmental performance indicators	
303-5	Water consumption	Water footprint	
		Environmental performance indicators	
		Effluents and Waste	
103-1/2/3	Management approach disclosures	Operational tasks over which GF has direct control	
		Sustainability Targets 2020	
		Natural resources and materials	
306-2	Waste by type and disposal method ³	Natural resources and materials	
		Environmental performance indicators	
		Environmental compliance	

103-1/2/3		Management approach disclosures	Good governance - Environmental protection	GF Corporate Environmental Management Policy
			Operational tasks over which GF has direct control	
307-1		Non-compliance with environmental laws and regulations ⁴		
Supplier environmental assessment				
103-1/2/3	RT-IG-440a.1	Management approach disclosures	Value chain	
			Procurement and logistics	
			Sustainability Framework 2025	
308-1		New suppliers that were screened using environmental criteria	Sustainability Targets 2020	
			Procurement and logistics	

¹ **Omission** No comprehensive information is available at this point in regard to the total weight or volume of materials that are used to produce and package GF's primary products during the reporting period. The topic will be included in the environmental data collection process.

² **Comment** As per defined Sustainability Targets 2020, GF set the goal to increase energy efficiency. The calculation thereof is a direct inverse of that for energy intensity.

³ **Comment** The types of waste disposal used by GF sites are indicated in the breakdown provided within the "Environmental performance indicators" table. No other disposal methods are applicable. The information on waste disposal methods is collected from and provided to the sites by waste disposal contractors.

⁴ **Omission** GF is not aware of any incidents of non-compliance with environmental laws and regulations that took place during the reporting period. GF can confirm that no fines or non-monetary sanctions were imposed on it in 2020.

⁵ **Omission** The types of water withdrawal and water discharge by GF sites are indicated in the breakdown provided within the "Environmental performance indicators" table. No other withdrawal or discharge methods are applicable. The information on water withdrawal and discharge methods is collected from and provided by GF sites.

400 Social Topics

GRI reference number	SASB reference number	Disclosure title	Location of content		
			Sustainability Report 2020	Annual Report 2020	Other
Employment					
103-1/2/3		Management approach disclosures	Stakeholder dialogue		
			Sustainability Targets 2020		
			Sustainability Framework 2025		
			Employees and society		
401-1		New employee hires and employee turnover	Employee satisfaction		
			Social performance indicators		
401-3		Parental leave ¹	Diversity and flexibility		
Occupational Health and Safety					
403-1		Occupational health and safety management system	Sustainability Targets 2020		
			Workplace health and safety		
403-2		Hazard identification, risk assessment, and incident investigation	Reducing the risk of accidents		
403-3		Occupational health services	GF Safety Standards		
			Reducing the risk of accidents		
403-4		Worker participation, consultation, and communication on occupational health and safety	Reducing the risk of accidents		
403-5		Worker training on occupational health and safety	Reducing the risk of accidents		
403-6		Promotion of worker health	GF's response to COVID-19		
			Sustainability Targets 2020		
			Workplace health and safety		
			Employee well-being and absence rate		
403-7		Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Product and service information and labeling		
			Workplace health and safety		
403-8		Workers covered by an occupational health and safety management system	Reducing the risk of accidents		
403-9	RT-IG-320a.1	Work-related injuries	Key figures for 2020		
			Reducing the risk of accidents		
			Safety indicators		

		Social performance indicators	
Training and education			
103-1/2/3	Management approach disclosures	GF's contribution to SDG 4	
		Sustainability Targets 2020	
		Training and professional development	
404-1	Average hours of training per year per employee	Social performance indicators	
404-2	Programs for upgrading employee skills and transition assistance programs	Training and professional development	
Diversity and equal opportunity			
103-1/2/3	Management approach disclosures	Diversity and flexibility	
405-1	Diversity of governance bodies and employees	Sustainability Framework 2025	Members of the Board of Directors
		Social performance indicators	Members of the Executive Committee
Non-discrimination			
103-1/2/3	Management approach disclosures	Diversity and flexibility	Code of Conduct
406-1	Incidents of discrimination and corrective actions taken ²	Social performance indicators	
Freedom of association and collective bargaining			
103-1/2/3	Management approach disclosures	Topics of material importance	
		Employee representation	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Sustainability Targets 2020	
		Employee representation	
Human rights assessment			
103-1/2/3	Management approach disclosures	Business conduct	GF Corporate Human Rights Policy
		Value chain	
412-1	Operations that have been subject to human rights reviews or impact assessments ³		Internal Audit
Supplier social assessment			
103-1/2/3	Management approach disclosures	Value chain	GF Corporate Human Rights Policy
		Sustainability Targets 2020	
414-2	Negative social impacts in the supply chain and actions taken	Procurement and logistics	
Public policy			
103-1/2/3	Management approach disclosures	Stakeholder dialogue	
415-1	Political contributions	Public policy	
Customer health and safety			
103-1/2/3	Management approach disclosures	Product and service information and labeling	
416-1	Assessment of the health and safety impacts of product and service categories ⁴	Product and service information and labeling	
Marketing and labeling			

103-1/2/3	Management approach disclosures	Product and service information and labeling
417-1	Requirements for product and service information and labeling	Product and service information and labeling
Socioeconomic compliance		
103-1/2/3	Management approach disclosures	Business conduct Value chain
419-1	Non-compliance with laws and regulations in the social and economic area ⁵	

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

² **Comment** Two workplace incidents, they were investigated and both cases were resolved, with appropriate measures taken.

³ **Omission** Human rights topics are included in internal audit procedures at individual locations. The selection of these locations is based on systematic and disciplined risk assessments in internal auditing. Details on the specific locations cannot be disclosed due to the underlying confidentiality as required by the internal audit charter.

⁴ **Omission** Information on the exact percentage of significant product and service categories assessed for health and safety impacts is currently unavailable.

⁵ **Omission** GF is not aware of any incidents of non-compliance with laws and regulations in the social and economic area that took place during the reporting period. GF can confirm that no fines or non-monetary sanctions were imposed on it in 2020.

External assurance

Independent Limited Assurance Report

on the selected data and information of Georg Fischer Sustainability Report 2020

To the Board of Directors of Georg Fischer Ltd, Schaffhausen

We have been engaged to perform assurance procedures to provide assurance on the aspects of the 2020 Sustainability Reporting of Georg Fischer Ltd, Schaffhausen and its consolidated subsidiaries ("Georg Fischer Corporation") published in the Sustainability Report 2020.

Scope and subject matter

Our assurance engagement relates to limited level of assurance focused on the data and information for the year ended on 31 December 2020 disclosed in the Sustainability Report of Georg Fischer Corporation.

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

The following specified data and information published in the Sustainability Report is within the scope of our limited assurance engagement:

- Selected sustainability indicators: 'GHG emissions – Scope 1' on page 114, 'GHG emissions – Scope 2 – location-based' on page 114, 'GHG emissions – Scope 2 – market-based' on page 114, 'GHG emission intensity index' on page 114, 'Total water consumption' on page 114, 'Total waste' on page 115, 'Hazardous waste' on page 115, 'Accident rate' on page 113, 'Fatalities – work-related' on page 113, 'Total Employee fluctuation' on page 112;
- The management and reporting processes to collect and aggregate the data as well as the control environment in relation to the data aggregation of these sustainability indicators.

Criteria

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

Inherent limitations

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

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

Georg Fischer's responsibility

The Board of Directors of Georg Fischer Ltd is responsible for both the subject matter and the criteria including the selection, preparation and presentation of the selected information in accordance with the criteria. This responsibility includes the design, implementation and maintenance of related internal control relevant to this reporting process that is free from material misstatement, whether due to fraud or error.

Our independence and quality controls

We are independent of the Georg Fischer Corporation 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.

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

Our responsibility

Our responsibility is to perform a limited assurance engagement and to express conclusion on the selected sustainability indicators of the 2020 sustainability indicators and related management and reporting processes of the Georg Fischer Corporation. We planned and performed our procedures in accordance with the International Standards on Assurance Engagements (ISAE 3000) (Revised) 'Assurance engagements other than audits or reviews of historical financial information' and in respect of greenhouse gas emissions, with the International Standard on Assurance Engagements (ISAE 3410) 'Assurance Engagements on Greenhouse Gas Statements', issued by the International Auditing and Assurance Standards Board. These standards require that we plan and perform our procedures to obtain limited assurance on whether the selected sustainability indicators were prepared and related management and reporting processes exist, in all material aspects, to report in accordance with the 'GRI Standards' published in October 2016 by the Global Reporting Initiative and on the Greenhouse Gas Protocol Initiative of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

A limited assurance engagement 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. The procedures selected depend on the assurance practitioner's judgement.

Summary of the work performed

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

- *Evaluation of the application of Corporation guidelines*
Reviewing the application of the Georg Fischer Corporation internal sustainability reporting guidelines;
- *Review of documentation and analysis of relevant policies and principles*
Reviewing relevant documentation on a sample basis, including Georg Fischer Corporation sustainability policies, management of reporting structures and documentation.
- *Site visit and management inquiry*
Remotely visiting selected sites of Georg Fischer Casting Solutions Altenmarkt in Austria and Georg Fischer Piping Systems Deka in Germany. The selection was based on quantitative and qualitative criteria;
Interviewing personnel responsible for internal sustainability reporting and data collection at the sites we visited and at the Georg Fischer Corporation level to determine the understanding and application of Georg Fischer's sustainability and contributions guidelines;
- *Assessment of the key figures*
Performing tests on a sample basis of the evidence supporting the selected sustainability indicators concerning completeness, accuracy, adequacy and consistency;

We have not carried out any work on data other than outlined in the scope and subject matter section as defined above. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our assurance conclusions.



Conclusion

Based on our work performed nothing has come to our attention causing us to believe that in all material respects:

- The selected sustainability indicators on pages 112 to 115 in the Sustainability Report 2020 of Georg Fischer Corporation and marked with a footnote '2020 PwC assured' are not stated in accordance with suitable Criteria; and
- The management and reporting processes with respect to the Sustainability Report to collect and aggregate the selected sustainability performance indicators as well as the related control environment in relation to data aggregation of these key performance indicators are not working as designed.

PricewaterhouseCoopers AG

Stephan Hirschi

Hélène Baron

Zurich, 28 May, 2021



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Imprint

Published by Georg Fischer Ltd
Edited by Georg Fischer Ltd, Corporate Development
Designed by NeidhartSchön AG
Coding by NeidhartSchön AG

All photos for the GF Sustainability Report 2020 were taken in strict compliance with the locally applicable COVID-19 protection regulations.

Cover: GF apprentices, GF Machining Solutions, Biel (Switzerland)

Disclaimer

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

The Sustainability Report 2020 of GF is also available in German. In the event of any discrepancy, the English version shall prevail.

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

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Legal form: Company Limited by Shares (Art. 620 et seqq. CO)
Business Identification Number (UID): CHE-108.778.486
Registered in the commercial register of the Canton of Schaffhausen
Value added tax number: CHE-116.293.044 MWST