

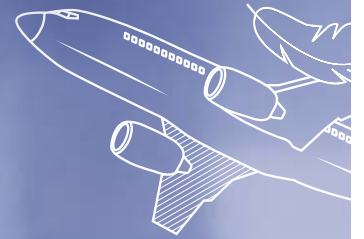
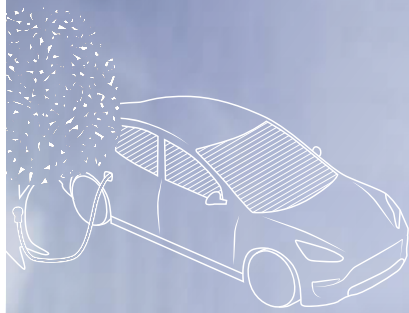
# Globe

+GF+

The global magazine for GF employees

#01/2023

## The mobility of the future



Self-driving or fully connected – the mobility of the future will be sustainable, above all. Here are some good examples of how GF is helping to shape the way we will move in the future.

### TEAM SPIRIT SPREADS QUICKLY

How Change Agents at GF Machining Solutions inspire colleagues to embrace a more open culture of learning **24**

### ALL FROM A SINGLE SOURCE

New services at a GF Casting Solutions location are ensuring a boom in growth **30**

### MAJOR CHANGES IN FARMING

Why a company is working with GF Piping Systems to rethink agriculture **32**

HELLO!

# Our language heroes

They don't know much about each other, yet they are a team. The "language heroes" are GF employees from various corners of the world who, in addition to their regular jobs, help make Globe more accessible to its readers.

**Claudio Corvaglia**  
**Position:** Social Media Manager  
**Division:** GF Corporate  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 2021  
**Reads Globe in:** Italian

**Anca Pascu**  
**Position:** Assistant Manager  
**Division:** GF Casting Solutions  
**Location:** Arad (Romania)  
**Joined GF in:** 2019  
**Reads Globe in:** Romanian

**Elif Demirbilek Balaban**  
**Position:** Head of Marketing  
**Division:** GF Piping Systems  
**Location:** Çerkezköy (Turkey)  
**Joined GF in:** 2006  
**Reads Globe in:** Turkish

**Oskar Jiang**  
**Position:** Marketing & Communications Coordinator  
**Division:** GF Casting Solutions  
**Location:** Suzhou (China)  
**Joined GF in:** 2022  
**Reads Globe in:** Chinese

**Laurence Lamanthe**  
**Position:** Executive Assistant to the CFO  
**Division:** GF Machining Solutions  
**Location:** Meyrin (Switzerland)  
**Joined GF in:** 2018  
**Reads Globe in:** French

**Silvia Guedes**  
**Position:** LATAM Marketing Communications Coordinator  
**Division:** GF Piping Systems  
**Location:** São Paulo (Brazil)  
**Joined GF in:** 2021  
**Reads Globe in:** Portuguese

The Globe language heroes have to be one of the most unusual GF teams. They do not know each other, and yet they work together on the same project, proofreading the translated versions of Globe in their respective native languages before the latest issue goes to print – eight languages in total. The Globe editorial team couldn't manage without these language heroes, who ensure that Globe is understood by all GF employees, and that the GF terms everyone knows, such as the ones from our Culture Movement, are correctly used. It's a job that can only

be done by someone who is part of the GF family!  
 Oskar, our hero from China, likens "every proofreading job to sampling a different bottle of wine." Elif from Turkey enjoys "spreading the good news from the world of GF," while being able to improve her foreign language skills. However, she is sad about never having met another hero. Laurence from Switzerland would also consider it "great to be able to meet the others for once and share their expertise." The upcoming virtual coffee talk is a first step!

**+**  
**And how about you?**  
**Would you like to be a language hero too** and help make our magazine better in your own native tongue? You would also get to read Globe before anyone else! Send us an e-mail to: [globe@georgfischer.com](mailto:globe@georgfischer.com)

EDITORIAL

# Two sides of the coin

Dear colleagues,

I have to admit, it's quite a challenge if I want to be truly sustainable in terms of mobility in my daily life. Living in a small town on the shores of Lake Geneva, where the beauty of the floral arrangements at the local train station is more widely known than the punctuality of the trains, with an employer at the other end of the country, catering to my children and their range of after-school activities, and maintaining contact with my extended family in northern Germany for regular but brief visits, I far too often choose to use the comforts of a diesel car – one that has really grown on me, because a more environmentally compatible car is also a question of investment.

My research on this topic quickly showed me the two sides of the coin. Logic dictates that sustainable mobility helps the environment; however, we do not want to make too many concessions on comfort and driving pleasure. Our Spotlight feature **starting on page 8** discusses the aspects that are crucial in the development of environmentally friendly and efficient solutions without losing sight of comfort. A renowned futurist shares with us his predictions for the mobility of the future.

How do you maintain the balancing act in your endeavor to pursue a more sustainable lifestyle when facing the realities of everyday life? Send us an e-mail at [globe@georgfischer.com](mailto:globe@georgfischer.com).

We hope you enjoy reading and exploring this issue!

*Isabel Proske*  
**Isabel Proske**  
 Globe Project Manager



**We found her!**

In the last issue of Globe, we published a photo of a young GF colleague in 1963 and asked if anyone knew who she was. Thanks to your help, we have now found Lilly Huggler Ackermann. Her family had and still has a close connection to GF. We will tell you more about her in the next issue.



**Has anyone seen the former plant-operated train somewhere?**

Page 38 shows a picture of the plant-operated train in use at GF in 1915. Do you know if it is still around, and where it might be? Send us an e-mail at [globe@georgfischer.com](mailto:globe@georgfischer.com).



WITH CONTRIBUTIONS FROM

**Martin Maier**

As a popular photographer, Martin Maier is always traveling around Germany, Austria and Switzerland. **8**



**Clarissa Barreto**

The former editor for economic affairs at Jornal do Comércio speaks with Globe from Latin America. **23**



**Glenn Harvey**

The illustrator has worked for The New York Times, The Wall Street Journal and The Washington Post. **16 and 17**



**SPOTLIGHT**



**8**

Will we be using self-driving vehicles or hyperloops to get from A to B in the world of tomorrow? Only one thing is clear: The mobility of tomorrow will be sustainable. Bright minds at GF are developing ideas to make it possible.

**CARE**



**20**

Francesco Viganò from GF Machining Solutions fights for universal access to clean water for everyone in the world. He is this issue's hidden hero.

**23**

**My Best Lesson: "I'm always working on expanding my know-how."**

**Viviane Marques**  
Business Developer at GF Piping Systems



Globe is also available online!

Scan to read Globe from anywhere in the world.

[globe.georgfischer.com](http://globe.georgfischer.com)

**CREATE**



**30**

A new machining center at the GF Casting Solutions location in Leipzig (Germany) ensures customer satisfaction and a boom in growth.

**CONNECT**



**32**

Pure Life Carbon produces growing mediums that help plants grow faster thanks to GF Piping Systems.

**37**

GF Casting Solutions is developing innovative solutions, together with Boston Dynamics, so parcels can reach the recipient in a timely manner.



**ISSUE #01/2023**

**CONTENTS**

**SPOTLIGHT**

**8 Sustainable Mobility**

Visionary plans and ideas from all divisions show how GF is helping to shape developments for the mobility of the future.

**16 Infographic**

Cars have undergone great changes in recent decades. Check out our infographic to see just how much.

**18 Insider's View**

A futurist shares his ideas regarding our mobility in 30 years' time and the technologies that we will be using.

**19 Your View**

Four GF employees explain how they live sustainability in their daily lives and what they value.

**CARE**

**20 Hidden Hero**

Francesco Viganò is fighting for universal access to clean water for everyone in the world.

**23 My Best Lesson**

Viviane Marques had to overcome shyness and reinvent herself in order to start her new job.

**24 A Strong Team**

A team in Sweden made sure that their colleagues were able to feel comfortable with one another.

**CREATE**

**26 Our Markets**

Laser technology is not yet widespread in the Asia-Pacific region. GF Machining Solutions is working to gain a foothold there.

**29 Innovator's Insight**

A new training and onboarding program for sales and marketing at GF Piping Systems is designed to be inspiring and, above all, fun.

**30 On Site**

A new machining center from GF Casting Solutions in Germany is ensuring customer satisfaction and a boom in growth.

**CONNECT**

**32 Our Customers**

GF Piping Systems is helping Pure Life Carbon in its endeavor to revolutionize agriculture around the world.

**36 Did You Know?**

GF Piping Systems has had customized solutions traveling the seven seas for quite some time.

**37 There's GF in It**

Robots with GF at the core of their design: innovative high-tech for logistics centers worldwide.

**INTRO/OUTRO**

**2 Hello!**

**6 In Brief**

**38 Time Machine**

**39 After Work**



IN BRIEF



The third show car from GF Casting Solutions is now 4.60 meters long, 1.80 meters wide and 1.50 meters high.

## First show car in China

On the occasion of the Culture Day 2022 in China, GF Casting Solutions has presented its first show car for China at the Suzhou and Kunshan sites at the end of 2022. It is the 3rd of its kind from GF Casting Solutions worldwide. There is no better way to demonstrate the diversity of the light-weight solutions from GF for the global automotive industry – from body, structural and e-mobility solutions to power-train parts and chassis components. The custom-made car shows where each component sits. The battery-powered electric car was designed and built in Suzhou. Weighing 500 kilograms, the car consists of 52 individual die-cast and iron cast parts. The installation includes products that GF produces for customers such as BMW, Mercedes-Benz or booming Chinese e-mobility start-ups such as Xiaopeng. The show car will be used for customer events, training courses and corporate events and will certainly be a highlight at the official opening ceremony of Shenyang site at the end of April 2023.

**+** **More pictures?**

You want to see more of the showcar? Scan the QR code to find impressions of the Culture Day 2022 in Suzhou.



### Happy Birthday Culture Movement!

GF celebrated the first anniversary of the **Culture Movement** with two virtual sessions gathering around 4'250 employees from all over the world. The Executive Committee and some Change Agents (photo) shared their experiences of living the GF values for a year. Big screens were set up at many production sites.



### Team spirit at community watch party in Brazil

The soccer teams playing in the World Cup were not the only ones showing team spirit. It was also evident among employees of GF Piping Systems. Viewers at the Cajamar site near São Paulo (Brazil) enjoyed live action on the large screen at the **community watch party**, cheering the Brazilian team when it played against Switzerland.



## Together against waste

GF Piping Systems is teaching its apprentices about the issues caused by littering through its **"No time to WASTE" project**. It used to be that the apprentices did not enjoy collecting the trash that accumulated at the Sissach (Switzerland) site. The project, run by strategic quality management & sustainability and the management of vocational training at the site, is successfully raising

awareness. A course was developed to introduce the 30 or so trainees to the topic, in which they learned about waste disposal at GF, and that included a tour of a bulk foods store. One integral part of the annual program is cleanup work on the grounds. The apprentices work as a team, are open to new ideas and take their findings back to their everyday lives – all in keeping with the GF values.



A mandatory exercise for apprentices at the GF Piping Systems site in Sissach becomes a durable learning success.

## Award-winning GF image film



The GF image film has been viewed around the world and has won several awards in the meantime. The film was shortlisted in the New York Festivals TV & Film Awards. At the Cannes Corporate Media & TV Awards, it received the Silver Dolphin (second place). And the highlight came when the film was honored with first place at the German Business Film Award in Berlin. Now the film will be used to woo potential employees. GF will launch a campaign around the image film "Going Forward" at Zurich Airport in Switzerland from July to November 2023. The aim is to highlight the image of GF as an attractive, modern employer to a more international audience.

**+** **Curious now?**

Do you want to watch "Going Forward," GF's award-winning image film? Just scan the QR code:



### We@GF soon available for everyone

The new intranet **We@GF** was launched at the end of 2022 for GF employees who could access the previous SharePoint intranet. The second project phase is currently under way. All employees, including those from production and logistics, will gradually be given access during this phase. The intranet is intended to connect all employees – regardless of division and location – and to facilitate exchange among employees worldwide. It is user friendly and features a smartphone app offering 24/7 access from anywhere, even for employees without a computer.

**+** **The app for We@GF**

Scan this to download it on your smartphone:



### Marketplace for sustainability



Noah Christen (left) and David Schelker, both apprentices at GF Machining Solutions, have established an **online marketplace for sustainable material procurement** to ensure discarded materials can be reused. It offers employees an exchange platform where they can find a new home for items lying around the office or at home, such as unused keyboards. The web portal, developed as a Kickbox project, is now being tested at the headquarters of GF Machining Solutions in Biel (Switzerland). It is likely to be rolled out across GF.

YOUR FEEDBACK

## Learning from other countries



**QUESTION:**

Dear Globe team,

I've been wondering about something for a long time. Why don't you dedicate an entire issue of Globe to a specific country where GF is active? In that manner, the entire Globe family could learn a great deal about other cultures.

**Respondent**

to the Globe reader survey (winter 2022)

**ANSWER:**

Dear colleague,

Thank you for your inspiring request. We are a large, international GF family, which is why we try to compile a balanced blend of topics in each issue of Globe, with a featured focus that has strategic relevance for as much of GF as possible, enabling divisions from different regions to have a voice. We focus on regional topics in, for example, the sections On Site and A Strong Team.

Setting a focus topic purely geographically might be a possibility, for example in the sense of a learning journey, if all divisions can also play their own important role in it. By the way, we are planning to let the employees choose the topics for the #03/2023 issue of Globe. We are happy to add your proposal to the list of topics.

**Your Globe editorial team**

**+** **And how about you?**

Do you have any feedback for Globe, or would you like to ask the Globe editorial team a question? Then send an e-mail to [globe@georgfischer.com](mailto:globe@georgfischer.com).



## Sustainable transformation

Our infographic shows how much cars and automotive technology have changed

Page 16

## Pods and robots

An expert talks about future trends and technology

Page 18

## Sustainable living

The importance of sustainability to GF employees in their everyday lives

Page 19

# Sustainable mobility

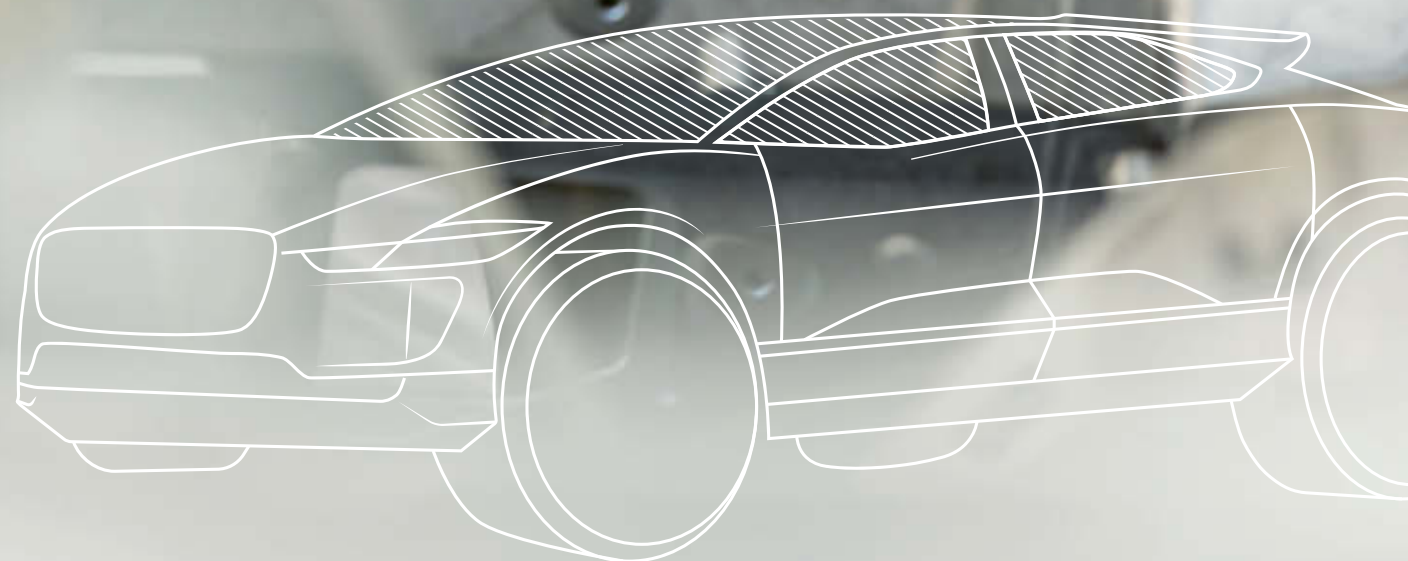
**SPOTLIGHT:** Today, we can only guess how we will be getting from A to B in the future. Self-driving vehicles, hyperloops, fully connected cars – who knows? But one thing is clear: The mobility of tomorrow will be sustainable. Innovative ideas from bright minds show how GF is integrating sustainability across the entire value chain and beyond.

**F**ilmmakers of the mid-1980s sometimes offered these crazy fantasies of people talking to their cars via their wristwatches or of riding a hoverboard to get around town. Nearly 40 years down the road, these imaginative ideas have become reality. And experts are now predicting that in another 30 years vehicles will be able to travel autonomously both on land and in the air (see interview page 18). Or maybe even Tesla boss Elon Musk's dream of his Hyperloop will have come true. This concept sees people riding in capsules, or "pods," through a vacuum tube.

### Ambitious objectives

Ideas for new concepts of mobility often originate in the desire to further develop autonomous driving in terms of more comfort, or to connect vehicles to improve safety and the flow of traffic, so, not always for reasons of sustainability. But the sustainability aspect cannot be ignored. After all, according to the United Nations (UN), the transport sector is responsible for around one-quarter of global greenhouse gas emissions. For this reason, the transport sector needs to reduce its greenhouse gas emissions quickly and drastically in order to counteract global warming. The GF Strategy 2025 includes a set of targets for developing innovative solutions and products that follow an environmentally friendly life cycle and strengthen the future of sustainable mobility. →

Sabine Tunzini and Gabriel Selbach work at GF Casting Solutions finding sustainable solutions for the future. GF approaches sustainable mobility with a holistic view, looking beyond just the value chain.





1 The greater precision of simulations in automotive engineering reduces the quantity of prototypes needed.

2 Dominik Mahnig from GF Casting Solutions is convinced that lightweight engineering and sustainability cannot be separated.



**Dominik Mahnig**

**Position:** Head of Product Development  
**Division:** GF Casting Solutions  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 1995



**“We will continue to increase the precision of the simulations in the future so we can produce the components more easily while consuming less energy.”**

**Dominik Mahnig**, Head of Product Development at GF Casting Solutions



“The challenge will be to keep climate protection and the social aspects of sustainability in mind along the entire value chain while developing these vehicles of the future,” says Christina Widmann, Sustainability Manager at GF Casting Solutions. This value chain includes the procurement of materials and machinery, as well as managerial tasks such as establishing sustainable thinking as part of a culture of innovation. Sales and logistics are as much a part of the value chain as the use of the product and end-of-life management – that is, what happens to the product when it is no longer needed. GF considers aspects of sustainability in all these areas.

**Starting off with innovative ideas**

Things always start with an idea for a new product. GF has “reorganized its innovation management for this focus on sustainability, among other things,”



**Christina Widmann**

**Position:** Sustainability Manager  
**Division:** GF Casting Solutions  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 2021

explains Sabine Tunzini, Innovation Manager at GF Casting Solutions.

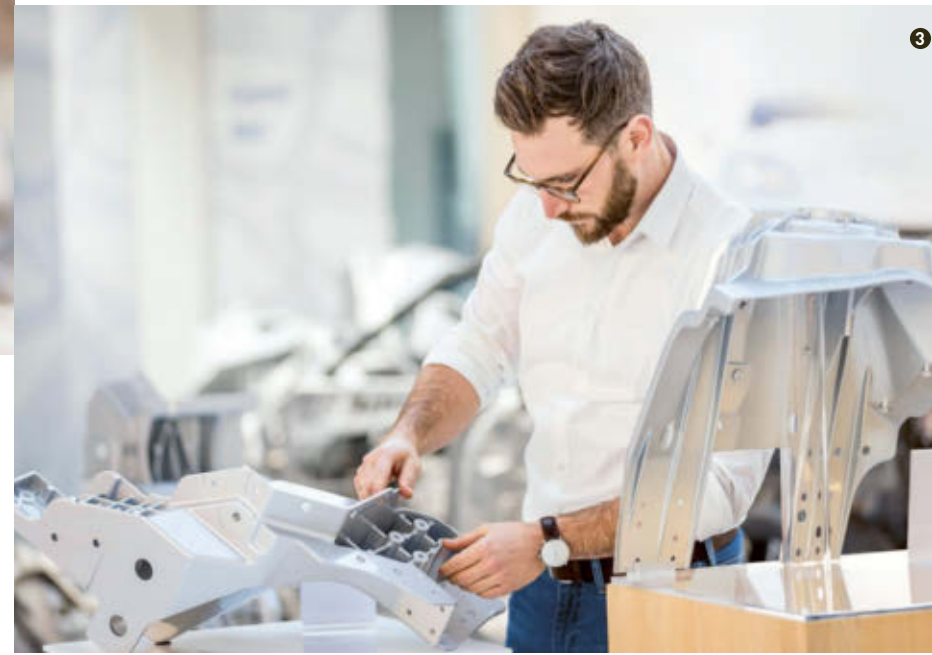
It is generally employees who provide the inspiration for these ideas. A system is in place to continuously evaluate them in terms of sustainability right from the outset. In addition, GF is receptive to new ideas from outside the company as part of its collaboration with Startup Autobahn, an open innovation platform that brings together technology start-ups and leading industrial companies to jointly develop innovations.

Computer-aided design and virtual simulation have revolutionized the design process in the automotive industry. In addition to cutting costs and saving time, virtual simulations essentially mean that fewer resources are consumed, because significantly fewer prototypes are required. At GF, this affects a significant number of all components produced, including body & structure, powertrain and chassis parts for the automotive industry.

“We would like to continue greatly increasing the precision of simulations in the future, so we can produce the components even more easily while consuming less energy,” says Dominik Mahnig, Head of Product Development at GF Casting Solutions.

**Sustainable products and materials**

In addition, GF Casting Solutions uses the principle of bionic topology optimization when developing innovative products. In this process, computer-aided geometries are created that are based on shapes found in nature. After all, nature has had millions of years to learn how to be efficient, economical and resilient at the same time. “Lightweight design and sustainability in automotive engineering are the be-all and end-all of development,” Dominik says. Lightweight design contributes to increasing the range of electric vehicles while also reducing carbon emissions. When developing lightweight components, the challenge is to continue to meet the high load requirements placed on a vehicle while it is in operation.



**Sabine Tunzini**

**Position:** Innovation Manager  
**Division:** GF Casting Solutions  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 2004

3 Gabriel Selbach believes in the importance of innovation as we move toward greater sustainability.

4 Sabine Tunzini (left) and Gabriel Selbach closely oversee innovations developed at GF Casting Solutions.



GF is leading the way with its commitment to preliminary and series development. “We design, simulate, optimize and validate everything from a single source with our strong capacities for research and development. It helps us to provide optimum support to the customer,” Dominik says. And the focus always remains on developments pertaining to products, processes and materials. In the past, GF has been able to leverage this innovation and development process to bring products to the market that have enabled weight savings of up to 40%.

**Resources and the circular economy**

Right from the beginning of development, attention is paid to keeping the company’s own resources in the cycle for as long as possible along the entire value chain. After all, there is no waste in nature. In this manner, GF wants to reach the next level of the circular economy. According to the Strategy 2025, 70% of sales



**Gabriel Selbach**

**Position:** Head of Innovation  
**Division:** GF Casting Solutions  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 2018

in 2025 are to be generated from products and solutions with social or environmental benefits for our customers.

GF focuses on reusing materials many times over, as well as on selecting materials that can be returned to the manufacturing cycle. The GF Casting Solutions foundries are an example of this. The division now uses more than 90% recycled materials in iron casting. In addition, it is working towards further increasing the content of recycled materials in aluminum alloys. For example, scrap companies supply recycled materials such as auto body & structure scrap, sheet metal scrap from heating appliances or tire wires for iron casting. Leading vehicle manufacturers attach great importance to the carbon footprint and appreciate the longstanding transparency that GF has always exemplified.

For Gabriel Selbach, Head of Innovation at GF Casting Solutions, the company is using innovation as a means to assume more leadership in terms of →



sustainability: "We strengthen our competitiveness and the future orientation of our products on the market by focusing on sustainability."

**Extracting lithium from wastewater**

GF Piping Systems is also working together with customers on innovative recycling solutions for sustainable mobility. Battery technology based on lithium is driving the "electric" revolution on the road, so to speak. The demand for this light metal has greatly increased. However, the way in which it is currently mined is not very environmentally friendly.

Saltworks Technologies, a Canadian company, provides an alternative to conventional methods for lithium extraction. This process involves industrial wastewater being subjected to reverse osmosis. The byproduct of the filtration process is a caustic solution from which Saltworks can then extract lithium for batteries by means of ion exchange. Nina Pongracz is



**Nina Pongracz**

**Position:** Global Communications Manager Sustainability  
**Division:** GF Piping Systems  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 2013



1

**Lithium from wastewater**

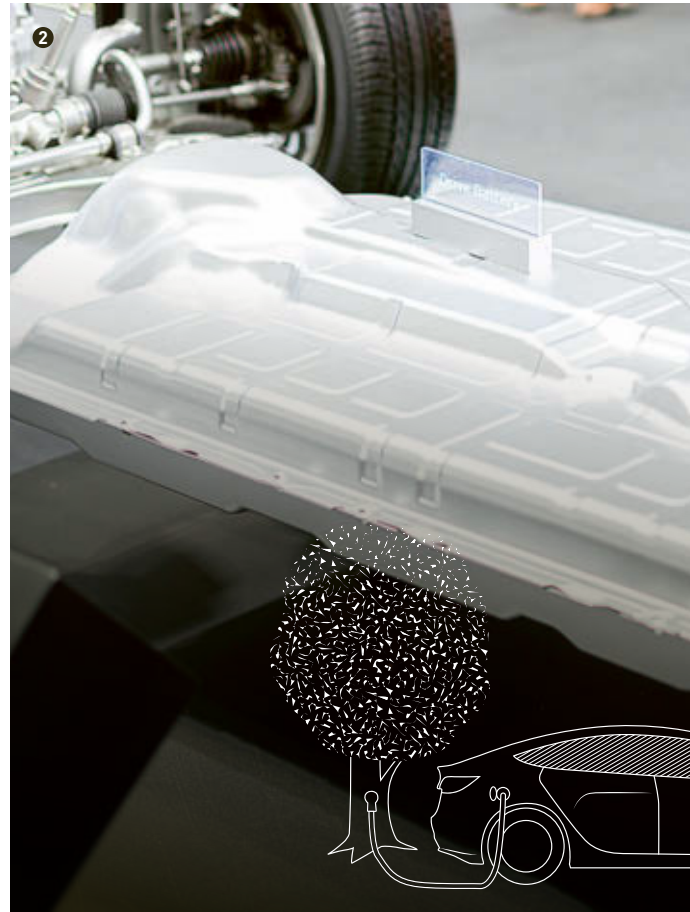
Together with Saltworks, GF Piping Systems is working to improve the sustainability of battery production by extracting lithium from wastewater. But how does it work? Antoine Walter, Senior Business Development Manager for Wastewater Treatment at GF Piping Systems, speaks to Saltworks co-founder and CEO Benjamin Sparrow in the podcast "(Don't) Waste Water."



Scan the QR code with your smartphone to listen to the "(Don't) Waste Water" podcast.

1 Nina Pongracz, Communications Manager at GF Piping Systems, is confident customers trust the quality of GF products.

2 GF Piping Systems is helping Saltworks extract lithium for automotive batteries from wastewater.



2

Global Communications Manager for Sustainability at GF Piping Systems and offers this explanation: "The brine is thick, salty, bad for the environment, and it is difficult to dispose of completely."

But thanks to products from GF, this byproduct can now be used as a raw material. GF Piping Systems ensures that the plant operates efficiently using process automation that includes valves, fittings and pipes. The quality of the GF products here is a unique selling point. The GF brand is also considered by leading industrial customers to stand for the safe disposal of residual material, as well as a higher yield of clean water. "One leading microelectronics company insisted on GF products being used in order to ensure accuracy and quality," says Nina.

**Production challenges**

The pressure to make transportation more sustainable is creating challenges in manufacturing – for example, when it comes to components for the aviation and aerospace industries. "Lighter weight materials can reduce fuel usage and emissions in the air, just as they do on the ground," explains Dameon Crane, Sales Manager Europe at GF Machining Solutions. In this area, GF primarily produces machines for manufacturing parts used in engines and aircraft cabins. For example, lightweight composites for aircraft fuselages can reduce kerosene consumption by up to 20% and by around 15% for engines with high bypass ratios.

However, a higher bypass ratio also means that more air flows out of the turbine, thus increasing the engine efficiency, which generates significantly more heat and affects the compressor in the process.

This applies, for example, to the bladed disks, or blisks, used as a component of the engine compressor. These are a combination of rotor disks and blades and ensure that a sufficient quantity of compressed air enters the engine. Engine manufacturers have started to use Inconel, a special nickel-chromium alloy, instead of the materials commonly used to make engines, such as aluminum or titanium, in order to withstand the extra heat. Ceramics are being used to replace the metal components in turbines. However, the new material is creating challenges in production. "It only takes a few minutes to make metal components. But it can take hours to make the same component from a new material," Dameon explains.

Today, the six furnaces are operating with greater efficiency than manufacturer specifications at the →

3 New materials are posing new challenges on the road to greater sustainability for employees at GF Machining Solutions– like Dameon Crane (center) and his colleagues here.

4 Dameon Crane knows that for engines to be more efficient they need parts, like the blisk here, to be made of durable materials.



3



4



**Dameon Crane**

**Position:** Sales Manager Europe  
**Division:** GF Machining Solutions  
**Location:** Langnau (Switzerland)  
**Joined GF in:** 2021

**“Lighter weight materials can reduce fuel and emissions in the air, just as they do on the ground.”**

**Dameon Crane**  
 Sales Manager Europe at GF Machining Solutions





## Making internal processes more sustainable

GF takes a holistic view of sustainable mobility, which means that internal processes are also constantly optimized. The in-out-in system from GF Machining Solutions is one example of how the company is doing this. The system eliminates single-use packaging for GF products; they are now delivered in heat-stabilized, lightweight packaging for transport. Greenhouse gases can also be eliminated when customers no longer need to use loader cranes for the products. The in-out-in system has been responsible for producing 42% less CO<sub>2</sub> during transport. Since the start of 2023, there has been an electric truck at GF Casting Solutions, instead of a conventional truck, regularly traveling between the Altenmarkt and Herzogenburg sites. It transports everything needed in production, from tools to components. The electric truck can save around 75 metric tons of CO<sub>2</sub> per year compared to the use of vehicles that run on fossil fuels.

In addition, electric-powered forklifts have been replacing conventional diesel-powered ones at many sites. The fleet vehicles for field representatives will also be gradually converted to electric vehicles over the next few years. There are electric bikes at some sites for employee use. Charging stations are gradually being installed.



**42%**

The in-out-in system for transporting products at GF Machining Solutions means that **42%** less CO<sub>2</sub> is produced.

site in Herzogenburg (Austria), which greatly reduces the demand for natural gas. "We want to move away from fossil fuels in the future and start using more renewable energy sources, such as electricity for induction furnaces," reports Michael Kornherr, Head of Smelting at GF Casting Solutions in Herzogenburg. Transmission housings, such as ones for hybrid electric vehicles, battery housings, doors and rear door frames for vehicles are produced in this town near Vienna. Artificial intelligence (AI) helps find the optimal settings for the production parameters more quickly, for example, when working with new products. This also helps keep scrap at a minimum.

### Environmentally friendly every step of the way

It is crucial for the mobility of the future that environmentally friendly, efficient products be developed, while paying attention to the choice of raw materials and sustainable production methods. But sustainability does not stop when the product leaves the warehouse. For this reason, GF is also working on improving sustainability in logistics by using lighter

**1** An electric truck has been used at GF Casting Solutions since the beginning of 2023.

**2** Furnaces at the Herzogenburg (Austria) foundry operate efficiently, which in turn saves natural gas.

**3** Residual material from the sprues is reused in the foundry where Michael Kornherr works.



**"We don't throw away anything."**

**Michael Kornherr**  
Head of Smelting at GF Casting Solutions



**Michael Kornherr**

**Position:** Head of Smelting  
**Division:** GF Casting Solutions  
**Location:** Herzogenburg (Austria)  
**Joined GF in:** 2003

weight packaging and making powertrains more environmentally friendly (see sidebar page 14). But what happens to a product when it is no longer needed? It is crucial also to have a well-designed recycling concept. For example, several functions in a Mercedes S-Class model have been combined in a single-piece cross member for the cockpit developed and manufactured by GF, which results in greater recyclability.

Environmental protection is also a priority in production in the GF Casting Solutions foundry where Michael works – likewise, for the sprues, a type of net in the form of a cluster from which the components are detached. The "branches" can then be recycled without further issues. "We don't throw away anything anymore," says Michael. A product's carbon footprint is determined by the sum of all measures. It is important to consider the eco balance over the product's entire life cycle. This is the only way in which sustainable products for the mobility of the future can be produced in a genuinely sustainable manner. And this applies to all modes of transportation, both the ones we use currently and those we still consider to be science fiction.



**CEO CORNER**

## Powering new mobility

Regular and reliable transportation is essential in today's world. It guarantees access to jobs, education, healthcare and food, enabling people, societies and businesses to prosper. Yet, this complex flow of goods and people has also created one of the greatest environmental challenges in human history.

Developing sustainable mobility is an important opportunity, and one with many facets. Just think of innovations such as autonomous driving, mobility-on-demand or alternative propulsion systems.

GF is one of the players working on advancing this kind of technological progress, while lowering the environmental impact at the same time. We are inspired by hydrogen applications; we strive to find energy-efficient solutions and we build lighter components for all kinds of mobility. Isn't that a great motivator for us? You can read more about the contributions of our three divisions in the Spotlight story, and see for yourself how GF is achieving its vision to become a sustainability and innovation leader.

I'm happy that we are also working on these technologies. As a business, we have a responsibility to transform technical advances into solutions that make business sense, for the needs of today and tomorrow.

**Andreas Müller**  
CEO GF



INFOGRAPHIC

1970

2023

# Sustainable metamorphosis

How does a modern car compare with a car from the 1970s?

INTERIOR DESIGN

There were padded dashboards in the mid-1970s. **Adjustable or integrated headrests** were added to the relatively simple seats. The gear shift levers, along with storage and the additional switches, moved from the steering column to the still **covered mid-tunnel**. This eventually became the center console.



FUEL

Diesel and **leaded gasoline** powered the cars of the 1970s. Instead of lead, gasoline is now mixed with up to 10% ethanol. It is said that the future belongs to **electric cars**, and their numbers are increasing. Powertrain research is also looking into hydrocarbons from biomass and hydrogen.



BODY & STRUCTURE

The rounded shapes and curves of **pontoon-like** design for automotive bodies gradually disappeared in the 1970s and 1980s. It was replaced by the wedge-shaped design for cars – initially in the luxury segment and later for use in mass production. The 1990s saw **more variety in car design**, as well as wider vehicles. The average car in 1990 was 1.68 meters wide; by 2018, it had grown to 1.8 meters. Twenty years ago, the length was 4.2 meters; today it is generally 4.4 meters.

PRODUCTION TIME

It takes **four weeks** from the time an order is placed to a car leaving the factory – if all goes well. But it can also take eight to 12 weeks. In December 1913, when Henry Ford installed the first moving assembly line for the mass production of an entire automobile, it took approximately **one-and-a-half hours** to manufacture one car.

SOFTWARE

Cars now have more than **1'000 electronic components**, with most of them – sensors and microcontrollers, for example – connected to software. The first developments in software emerged around 1970. In 2012, the software of a car had around **10 million lines of code**. By 2023, it will be 100 million. Modern sensors detect raindrops on the windshield, traffic signs and even obstacles. Plus, they can initiate the braking process.



ENERGY DEMAND/CONSUMPTION

Average fuel efficiency improved by 37% between 1973 and 1991, from **17.5 liters per 100 km** to 11 liters. From 1991 to 2013, efficiency improved by only one liter, to an average of 10 liters per 100 km. Fuel efficiency has not improved any further since the **emergence of alternative powertrains**.



SPEED

Cars became faster and faster over the years. In 1950, a mass-produced car would still top out at **about 136 kph**. In the 1960s, the top speed rose to 225 kph, and in the 1970s it was nearly 300 kph. There were even series production sports cars with speeds reaching 350 kph in the mid-1970s. And then in the 1980s, the limits were pushed to 377 kph. Today, the **SSC Tuatara with 475 kph** is the fastest car among internal combustion engines in series production.

WEIGHT

The average car in 1975 weighed about **915 kilograms**. In 1982, it was 1'385 kg, and in 2006, 1'611 kg. Today's electric cars add a further 300 kg to that due to the **weight of the battery**. GF is working on **developing lightweight parts** to counteract this. A car today is made up of about 12% to 15% plastic. In addition, cars contain 600 kg of steel, 10 kg of cast iron and 90 kg of aluminum.



1970s

1981

1990

1997

2008

2009

2035

Cars became safer and more environmentally friendly: **airbags** (1971), **catalytic converters** (1974) and **ABS** (1978).

Honda developed the world's first **map-based navigation system**. It took another 10 years before the GPS system was released.

Environmental protection became ever more important, and **catalytic converters** for diesel engines were introduced.

The Toyota Prius became the first mass-market **hybrid car** to go into series production.

The Tesla Roadster is the first **electric vehicle** in series production, with a battery system featuring lithium-ion cells.

The Mitsubishi i-MiEV, the first mass-produced **electric car**, was released.

The EU wants to reduce **emissions** from new vehicles to zero, meaning that only electric cars and vehicles with alternative powertrains would be allowed.

Want to find out more?

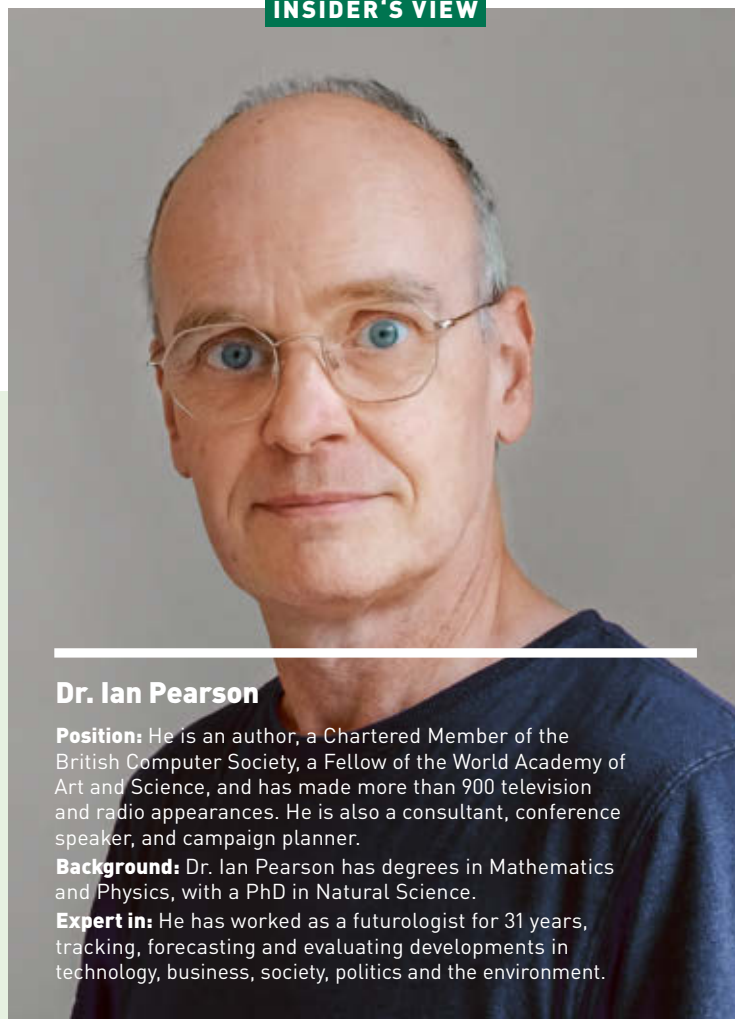
Just scan the QR code and off you go to the website.





# A world of pods and robots

INSIDER'S VIEW



**Dr. Ian Pearson**

**Position:** He is an author, a Chartered Member of the British Computer Society, a Fellow of the World Academy of Art and Science, and has made more than 900 television and radio appearances. He is also a consultant, conference speaker, and campaign planner.

**Background:** Dr. Ian Pearson has degrees in Mathematics and Physics, with a PhD in Natural Science.

**Expert in:** He has worked as a futurologist for 31 years, tracking, forecasting and evaluating developments in technology, business, society, politics and the environment.

What will the world of tomorrow look like? How will we live, communicate and commute? Renowned British futurologist Dr. Ian Pearson has some exciting ideas.

**Will there continue to be individual transportation in the future and how will mobility develop in general?**

By 2030, I think we will start seeing the appearance of a lot of E-pod systems, especially in urban areas. These will be miniature, driverless e-vehicles for transporting people and goods over certain distances. They will be powered purely electrically and be fully automated. I'm talking about very lightweight, economical pods that will pick you up at your home, your office or wherever you are and drop you off exactly where you want to go. Then they will pick you up again and take you right back.

**Will the car be the most appropriate vehicle for future mobility?**

Not in the form that we use cars today. I think most people will use public transportation by means of these pods. If you can pick someone up from their home and they don't have to worry about parking and congestion, that is an advantage.

**Which fuel or drive system could become established?**

Fossil fuels will soon be gone. In the long term, it is probable that by 2040 or 2050, fusion energy will become

mainstream. This will be cheaper than existing nuclear fission energy and a lot safer. These technologies will come into use in mobility and transport as well, likely becoming the most used fuel in these fields.

**Which role is AI likely to play in this scenario?**

I think a lot of the pod systems will be using AI-integrated infrastructure. They won't necessarily have to have separate AI for every single pod. The AI can reside in the cloud, on a remote server that is accessed by means of a mobile device. The other daily application of AI will be in robotics. Robots will be programmed to have different profiles based on who is interacting with them, and these

profiles might be stored in the cloud and be activated based on the user. However, I don't think that robots will be replacing people in the future. Humans and robots will coexist.

**How will we communicate in the future?**

In the future, we won't communicate with one another via small 2D images on our phones or other devices, but instead we will use life-size 3D. However, that is not the near future. It's like 3D television. This has been launched several times and has failed every time. It might require a few more launches and rejections from the market. Perhaps, in more than 20 to 30 years, we will reach proper holographic 3D communication. ■

YOUR VIEW

# How important is sustainability to you?

Sustainable living is increasingly growing in importance. But in what ways? Four GF employees tell us how they get to work and how important sustainability is to them in their everyday lives.

**Roger Gu:**

"I've been driving an electric vehicle (VW ID.3) to work since last year. It's very quiet, fast and energy efficient – an absolutely sustainable means of transportation. Sustainability is very important for our planet, climate and health. What's more, everyone can do their part by reducing water consumption, avoiding food waste and reducing personal use of plastic bags."



**Position:** Head of HR  
**Division:** GF Casting Solutions  
**Location:** Kunshan (China)  
**Joined GF in:** 2011

**Soundarya S.:**

"I take the subway and bus to work, and I always walk the last stretch. The trains and buses are electrically powered. I don't use disposable paper cups for my coffee nor plastic water bottles. There is a chance that these small individual contributions can lead to a change in the water quality of our oceans over the long term, along the lines of the Indian proverb: 'little drops make the mighty ocean.'"



**Position:** Service Coordinator  
**Division:** GF Machining Solutions  
**Location:** Bengaluru (India)  
**Joined GF in:** 2020

**Louise Green:**

"I live in a small community outside Avesta, which is northwest of Stockholm. Every morning before I drive to work, I drop off my son at school, which entails an additional 15 minutes of driving. Despite this, I try to think about the environment as much as possible, and sustainability is important to me. That's why I plan to buy an electric car. The next generation deserves the chance of having a clean and safe Earth without global heating."



**Position:** Welder  
**Division:** GF Piping Systems  
**Location:** Avesta (Sweden)  
**Joined GF in:** 2021

**Jonathan Nichols:**

"I commute to work daily in an electric vehicle (EV). I'm supportive of innovation. As a California resident, I've recently witnessed increasingly extreme weather events: severe droughts and fires. This is alarming. I experimented with ownership of a hydrogen fuel cell car, and I am excited to see the next chapter for hydrogen as our country considers decarbonization efforts in light and medium-duty trucks."



**Position:** Director of Innovation  
**Division:** GF Piping Systems  
**Location:** Irvine, CA (US)  
**Joined GF in:** 2018



**It's not a job, it's a mission**

It was a tough start for Viviane Marques at GF in Brazil, but she persevered

**Page 23**

**Team spirit spreads quickly**

Change Agents are establishing a more open culture of learning at GF in Sweden

**Page 24**



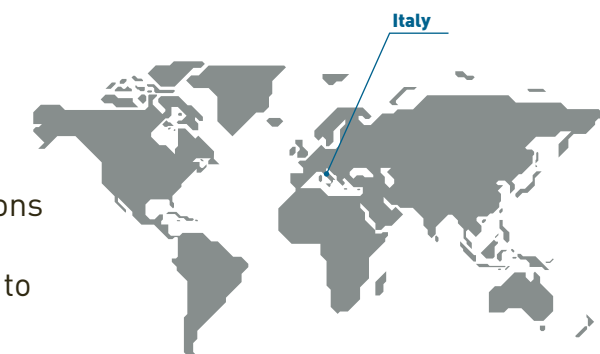
**Francesco Viganò**

**Position:**  
Product Manager  
Automation

**Division:**  
GF Machining  
Solutions

**Joined GF in:**  
2018

## The enabler



**HIDDEN HERO:** Francesco Viganò of GF Machining Solutions is working hard to make sure everyone has access to clean water. A great deal of perseverance and his ability to bring people together are leading him toward success.

**F**rancesco Viganò was 18 years old when he saw first-hand the challenges of living without enough water. In 2008, the Italian, who is now Product Manager Automation at GF Machining Solutions, traveled to Togo and Benin in Africa with a group of young people committed to volunteering with international humanitarian organizations, bringing microscopes with them to support local hospitals. However, on the ground he found that technology could only be part of the solution. Indeed, people crucially lacked the basics to live healthy lives. "It would have been just as important to provide access to clean, germ-free water so they wouldn't come to the hospital in the first place," Francesco says.

Francesco kept thinking about this. In 2016, he founded the Lions Club Seregno AID, dedicated to promoting the human right to water. He also involved his family. Francesco inherited his social vein from his parents, who traveled every year on missions to sub-Saharan Africa to help out as doctors. And every time they returned, they told their son about the same problem: the lack of access to clean water.

The Lions Club Seregno AID wants to tackle this problem. To this end, the club organizes an annual worldwide photo competition ([worldwaterday.it](http://worldwaterday.it)) on the theme of water. The best photos are exhibited to raise awareness of water as a vital resource that is not accessible to everybody.

The funds raised through the competition sponsors' donations is awarded by the Lions Club to organizations that aim to improve access to drinking water in countries where resources are limited. However, the club finances half of project costs; the organization receiving the →



↑ Help locally: Francesco's Lions Club built an irrigation system and trained women to use it for farming in Burkina Faso.





funds has to raise the remainder itself. "This is to ensure the recipient uses the money with care and remains dedicated to the project in the long term," Francesco says. It is his job to select the winners from all the applications.

In 2021, his aid organization celebrated its first milestone. Thanks in part to Francesco's perseverance, organizational skills and ability to bring people together, the Lions Club managed to fund a well in Burkina Faso

← Francesco's Lions Club members collect donations via an annual photo competition that centers on water.

→ Francesco (left) speaks with Roberto Isella, one of the club members.

**"My parents taught me that togetherness should not be neglected, even at work."**

**Francesco Viganò**, Product Manager Automation at GF Machining Solutions

in Africa. They built an irrigation system and trained 35 young women to use it for farming. It took the club five years to collect the required amount: €20'000. But the work has paid off. "Six of the women who learned irrigation methods in our project have already been able to start their own businesses in the first year. They are farming and are now standing on their own two feet," Francesco says proudly. "We have given them a perspective for the future and, with it, a measure of dignity" he says.

**Francesco creates connections**

Francesco, who is now 33, is a good networker. In keeping with the GF value "Caring is about being part of a team," he knows that for projects to be successful, know-how and equipment must be made available to those who need it, and people must come together. He is also successful in doing this at GF: From his hometown in Italy, he travels to his team in Biel/Bienne (Switzerland) once every two weeks. There he gathers his colleagues for a communal coffee break with caviadini, a cookie specialty he brings from his region. "My parents

**35**

women in Burkina Faso were trained in farming techniques thanks to Francesco's Lions Club.



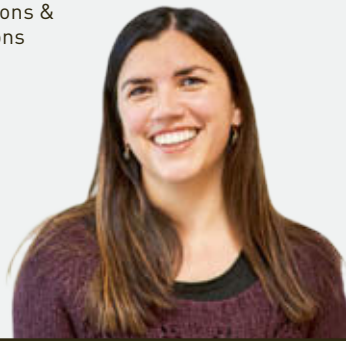
taught me that togetherness should not be neglected, even at work. That's why I started this tradition with the cookies."

The project in Burkina Faso is just the first water project for Francesco's organization. But the Lions Club aims to select and sponsor new water-related initiatives every two years. Indeed, the following tender was published at the end of January. "We are just a small drop in the ocean, but if we all work together, we can create positive change in the long run." ■

**WHY HE IS MY HERO:**

**"Francesco is a hidden hero to me because he commits to helping others despite his busy job."**

**Johanna Lüder**  
Internal Communications & Media Relations Manager, Biel/Bienne (Switzerland)



**And how about you?**

Which colleague is your hidden hero? Send us an e-mail with your explanation to [globe@georgfischer.com](mailto:globe@georgfischer.com).

**MY BEST LESSON**

**It's not a job, it's a mission**

Viviane Marques, who previously worked as a scientist, has found her dream job at GF as a business developer. But it was difficult getting started.



**Viviane Marques**

**Position:** Business Development Non-Revenue Water  
**Division:** GF Piping Systems  
**Location:** São Paulo (Brazil)  
**Joined GF in:** 2022

Nearly 8'000 Olympic-size swimming pools, each of them measuring 50 x 25 meters – that is the amount of treated water lost every day in Brazil's supply systems, according to an official report by the Water Regulatory Authority ANA (Agência Nacional de Águas e Saneamento Básico). Experts agree that there is an urgent need for action. GF also wants to make its contribution.

Civil engineer Viviane Marques's online profile on a professional platform caught GF's attention, thanks to her prior experience battling this type of water loss in Brazil. But as a scientist, Viviane was not used to customer-facing roles and had to overcome the challenge of opening up and her shyness to move from academia into a field with a commercial focus.

**"I don't stop learning and I constantly work to expand my know-how, because I know I am only at the beginning of an amazing journey."**



As a business developer, it is necessary to be able to communicate well with customers and have a good network of contacts, as well as to keep an eye on the market in which you operate. At her previous employer, a civil engineering company, Viviane did not have any contact with customers. Skills such as sales work and persuasive communication were new to her. However, she quickly discovered that she would have the opportunity to acquire these commercial skills at GF. Maurício Oliveira, her supervisor and Managing Director at GF Piping Systems, helped her from the very beginning. "He has a very encouraging manner and exudes confidence, which he transmitted to me. He can always guide you in new directions if something starts to go wrong. Even the way he communicates has been a helpful inspiration for me," Viviane says.

Since water management involves many people and entities in the public administration, business, and

political sectors, Viviane had to use her expertise and diplomatic skills.

Viviane also works in an environment that is male-driven, especially in Brazil. This is another thing she wants to change. She hopes that her career can be a role model for other women, too. "GF is looking for diversity. Of course, there is still a long way to go, but the first steps are fundamental for women to get more and more space."

Thanks to Viviane's work in New Business Development and the resulting sales, the awareness of GF products in the Brazilian water supply sector is increasing. Viviane's goal is to keep expanding her reach. "I feel I can now realize my professional goal. Working with cutting-edge technology is motivating. I never stop learning and I am constantly working to expand my know-how because I know I am only at the beginning of an amazing journey." ■



**And you?**

What life experience would you like to share with your colleagues? Write to us at: [globe@georgfischer.com](mailto:globe@georgfischer.com)



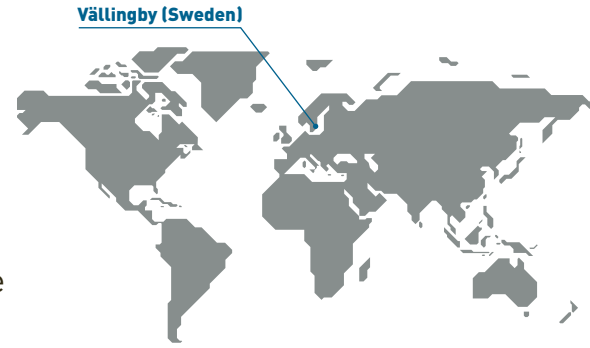
# Team spirit is contagious

**A STRONG TEAM:** Three Change Agents in Sweden inspire more team spirit and an open learning culture as part of the Culture Movement. The success surprised everyone.

When Frida Angeli first heard about the Culture Movement in November 2021, she knew right away that she wanted to be part of it: she learned about the three new values, which GF wants to establish more firmly in the workplace, and about the role of the Change Agents, volunteers tasked with helping to introduce the values to their colleagues.

"At the time, I thought it sounded like fun," says Frida, assistant in the HR department at GF Machining Solutions in Vällingby [Sweden]. "After all, no matter how good things are, there is always room for improvement, especially in terms of the relations between colleagues." In addition, Frida was new to the company and saw the Culture Movement as an opportunity to get to know the location better.

↓ The teams were composed of different employees from various departments.



## A dynamic team

Frida thought there was room for improvement in the communication among employees, who - spread over the two buildings at the site - in their everyday routines rarely ran into each other and thus mostly did not personally know each other. Asking for advice or help was difficult. "We are only separated by a street, but at times it felt like a long trip to make," she explains.

Rikard Bergqvist, Workshop Manager Automation, and Henrik Larsson Sevon, Quality Assurance Engineer, also signed up as Change Agents. The three attended an online training and then got right down to business: "Frida and Henrik were great to work with because they were so proactive and dynamic," says Rikard, who has been with GF for five years.



↑ Frida Angeli had only recently joined GF when she decided to become a Change Agent.

In a meeting, Frida, Rikard and Henrik informed the entire staff of the Vällingby site about the details of the Culture Movement. They then asked the departments about what they felt could be improved and received some straightforward answers: "Employees simply wanted to learn from each other - both from other departments and from people who have more experience than they do," Frida says.

## Getting to know each other through exchange

In response, the team designed an exchange program that brings together two members of different departments at a time. At an initial meeting, called "speed dating," they determine what they would like to learn from each other about work processes and how to deal with unforeseen problems. Each of the participants

↓ Change Agent Henrik Larsson Sevon (right) is showing a colleague from production around as part of an exchange program.



**Frida Angeli**

**Position:** Assistant in HR  
**Division:** GF Machining Solutions  
**Location:** Vällingby [Sweden]  
**Joined GF in:** 2019



**Rikard Bergqvist**

**Position:** Workshop Manager Automation  
**Division:** GF Machining Solutions  
**Location:** Vällingby [Sweden]  
**Joined GF in:** 2017

shadowed a randomly assigned colleague from another department for four hours at the other's workplace. Visible results were quickly achieved, according to Frida, who accompanied the exchange. "By spending time together, colleagues got to know each other better, which also helped to better understand their work and daily challenges."

The interactions in Rikard's team also improved: "We've learned that it's not necessary to create a report in the system for every question and every problem," Rikard says. "Sometimes all it takes is walking over and talking to each other with an open mind and respect."

## Playing boules with the boss

Twenty-four employees from 11 departments participated in the program. To include the roughly 150 remaining colleagues in the Culture Movement, Frida, Rikard and Henrik invited them to participate in one of four excursions with a joint dinner. This was very welcome: Some colleagues went to play boules with the site's General Manager, Christophe Massart, while others competed in pool or bowling, or cleared a level in the laser dome. The idea behind the activities remained the same: Frida arranged mixed teams from different departments, allowing the participants to get to know each other playfully. After that, they were able to chat in a relaxed atmosphere over dinner.

Thanks to the concept, all events were a success - and having joint meals at Vällingby has turned into a tradition: "It's nice to see that the groups gathering in the cafeteria have become bigger since folks now know each other and share ideas over lunch," says Rikard. The program was so popular that it entered its second round a year later, in November 2022. This time around, there were two additional Change Agents and 33 participants - among them Rikard, who is already looking forward to the exchange with a younger GF colleague from the tool shop. "I'm excited to learn more about the department's production technologies," he says.



**New onboarding journey**

How GF Piping Systems is onboarding new recruits to sales and marketing

Page 29

**All from a single source**

A new machining center in Leipzig [Germany] is impressing people

Page 30

# Lasers for a market worth billions

**OUR MARKETS:** The Asia-Pacific region is home to some of the most important sales and procurement markets of the future for laser technology. GF Machining Solutions is in the process of expanding there, winning new customers and revolutionizing the way they manufacture.



**T**he laser industry has been experiencing a tremendous growth in recent years, and GF has played a key role in this development through its innovative laser technologies. In the Asia-Pacific region, however, the industrial use of laser ablation – the removal of material through laser radiation – is not yet widespread. GF Machining Solutions is set to change that and convince customers in the region to embrace a new way of machining.

**Vast economic area**

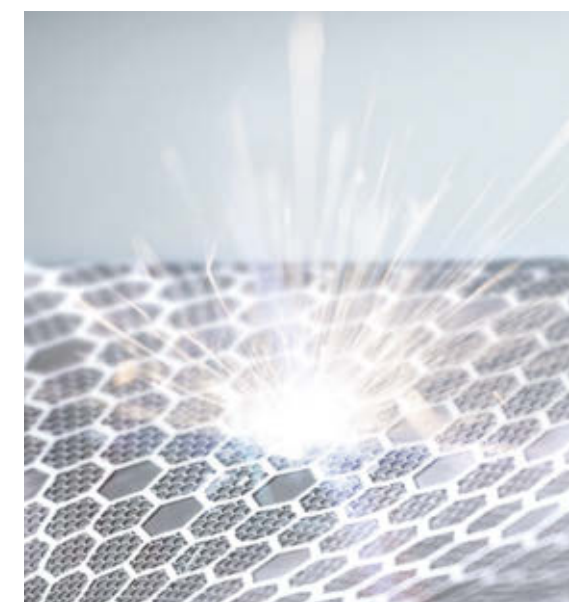
The Asia-Pacific region includes Southeast Asia and parts of East Asia such as Taiwan, Korea and Japan, as well as Australia and Oceania. It is home to more than 4.6 billion people. That's almost 60% of the world's population.

Adrien Rodrigues, Advanced Manufacturing Business Development Manager at GF Machining Solutions in Singapore, is responsible for the region. The 35-year-old regularly travels to support local sales and technical teams: "We're improving our customers' production workflows here by introducing laser technologies that simplify manufacturing processes for precision parts," he says.

**New business asset**

While older technologies will continue to be used, newer technologies such as laser solutions bring additional value by way of improved efficiency, performance and capabilities.

The process with traditional technologies can be expensive, with the risk of defects and scrap – for example, machining carbide parts by die-sinking EDM,



↑ Electronics, automobiles – there is hardly an industry where GF laser technology cannot be applied.

which is tedious and complex. In certain cases, laser technology achieves significant improvements when machining hard metals such as carbide, reducing production times from days to hours. Also, increasing demand from the electronic components and watch-making industries for ceramics and silicon carbides, for example, cannot be met with conventional machines.

Moreover, companies in Asia-Pacific have a difficult time attracting young talents if they do not utilize digitalized processes and software-controlled machines. →



**Adrien Rodrigues**

**Position:** Advanced Manufacturing Business Development Manager for the Asia-Pacific region  
**Division:** GF Machining Solutions  
**Location:** Singapore  
**Joined GF in:** 2013

Billions of people, vibrant metropolitan areas – the Asia-Pacific region offers many opportunities for GF.



Laser technology is the solution to these challenges, and a way to fulfill GF's strategy of achieving profitable growth with sustainable solutions. In the future, laser technology will help to exploit new business opportunities – for example, in the world of electronics.

Since 2009, GF has been looking to introduce the technology in the Asia-Pacific region, Adrien says. "The technology deployment took some time, but it has greatly evolved to meet the specific needs of our customers in processes such as texturing, blasting, engraving and now pure machining. In the early days of the technology, we didn't focus on the processing of materials, because the technology didn't meet customer expectations. But this is the core need of customers in the region. We listened to our customers and learned from them – the technology is now fully developed and poised to bring significant changes to the market." Personal exchange is everything, Adrien says. "If we explain to customers face to face that we have what they need to solve their problems, we attract a lot of interest as this is an innovative way to change their process for their future success."



↑ Laser micromachining equipment is optimized to meet growing demand for small parts.

**Unprecedented flexibility**

GF femtosecond technology operates at a wavelength equivalent to both green and infrared laser wavelengths in the same machine, making it suitable for processing materials such as carbide steel, aluminum, silver, nickel, glass, polymers, ceramics, gems and silicon carbides.

The new flexibility offered by lasers appeals to customers, Adrien says. "I was very surprised at how excited they got when we explained that our technology can minimize certain processes and open up new business ideas for operations."

For customers, the stakes are high. "In all markets around the world, when customers introduce this kind

of technology in their process, they have to significantly change their manufacturing processes. Customers have to recalculate and reorganize everything, including how they design, how they organize the manufacturing flow, how they operate, and the costs of manufacturing – but we are here to support them."

**GF has their customers' back**

GF supports customers every step of the way. "Of course, we are competing with others in the market. But only a few of them can provide on-site customer service as we do with our colleagues based in Korea, Japan, Taiwan, India and Southeast Asia.

"Our expertise in mold making and machine tool business allows us to understand customers' needs, guide them to the best technology and bring new opportunities and benefits," says Adrien. ■

**The LASER P 400 U series from GF**

Laser engraving, texturing and marking processes using lasers from GF offer quality, efficiency and femtosecond laser technology. They are specially designed for machining precision parts for watches and jewelry, inserts, cutting tools and micro-machined parts.

**14**

years ago, GF launched its efforts to introduce laser technology in the Asia-Pacific region.

**1**

It takes just one minute for GF Femto lasers to adjust to a new material. Every material needs a different light wavelength for processing.

**50**

The consumption of electrodes can be reduced by 50%. Laser technology achieves drastic improvements in machining hard metals such as carbide, reducing production times from days to hours.

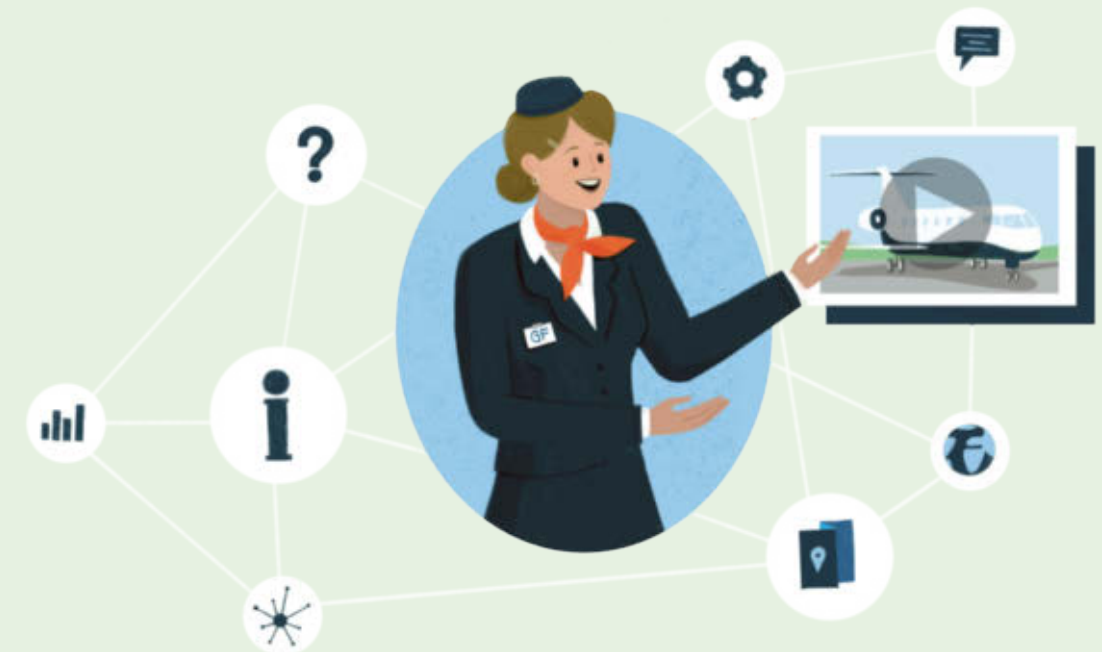


The femtosecond laser is well suited for the functional texturing of precision parts.

**INNOVATOR'S INSIGHT**

**Innovative global onboarding journey**

GForce is the new training and onboarding program for sales and marketing at GF Piping Systems. Co-developer Elisa Nardis introduces it.



**The challenge**

Before GForce, there was no standard onboarding for sales and marketing. Training was time-consuming and often lacking in knowledge about the GF sales culture. E-learning programs were often out of date.

**The process**

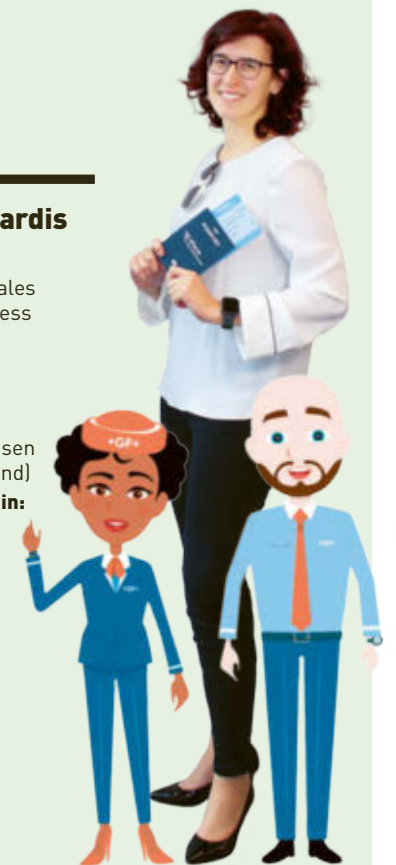
Based on the sales challenges and the needs of employees, I developed a training program with Joanna Palmowska (designer) and Albert Miquel i Serrat (developer) that conveys marketing and sales processes and ensures optimal customer advice. The program uses multimedia formats such as video and interactive animation, and the videos can be enhanced by artificial intelligence (AI).

**The result**

GForce provides plenty of information concerning product and sales fundamentals, tools and methods, as well as our value proposition. It is intended to inspire all employees worldwide with best practices and success stories in a fun way. New videos can be created without a film crew or actors. Training content can easily be updated by means of AI and translated into more than 65 languages without having to re-produce a video. The learning program is continuously developed.

**Elisa Nardis**

**Position:** Head of Sales Effectiveness  
**Division:** GF Piping Systems  
**Location:** Schaffhausen (Switzerland)  
**Joined GF in:** 2018



**Want to find out more?**

Just scan the QR code, and off you go to the website.





# Everything from a single source

**ON SITE:** A new machining center at the GF Casting Solutions location in Leipzig (Germany) ensures customer satisfaction and a boom in growth.

Now more than ever, companies subscribe to the mindset of “the faster, the better.” That’s because they need to offer shorter times for product development and manufacturing. Against the backdrop of growing competition, this is the only way they can convince customers and acquire new orders. One of the two GF iron foundries worldwide is situated at the GF Casting Solutions location in Leipzig (Germany). It produces large cast components for off-highway vehicles such as wheel loaders, tractors, farm machinery and construction vehicles. Prototypes and series produced models can be manufactured relatively quickly, and customers’ individual requirements can be met in the automated molding line at the location, the largest in Europe and the Americas. “More

and more, our customers want ‘no-worries’ full-service packages,” says Matthias Heinrich, Managing Director of the location.

**In-house ready-to-install parts – at long last**  
Cast components could not be machined at the Leipzig location until now. In the past, the company required the services of an external provider. This poses a problem for GF, especially with regard to prototypes. “We can hardly find companies anymore that can machine our cast components quickly enough to satisfy our customers in terms of the final timing,” explains Matthias.

For this reason, GF Casting Solutions made the decision to invest in its own machining center. Now,

↓ GF Casting Solutions’ Leipzig location now offers customers the “no-worries” full-service package – from the idea to series production.



← Soon there will be three-shift operation in the new machining center.

→ Employees in Leipzig work on a lathe and milling machine to produce the ready-to-install cast components.

two employees work on a lathe and milling machine to produce the ready-to-install cast components. “As we look to the future, we want to invest in more machining equipment, with three-shift operation,” says Matthias. A new campaign sums up the Leipzig location’s single-source concept with the slogan, “Our hands shape your success.” There are many inquiries from new customers and many orders already coming in, also for the still nascent Robotics division.

### Robots for the US

GF Casting Solutions recently secured an order from the US. A customer is planning to introduce an autonomous robot for loading and unloading containers. The robot’s housing requires a heavy and stable iron cast component that can accommodate the battery and wheels. “We developed the component together with the customer and simulated the casting process on the computer. The first test molds for the prototypes were created using our sand 3D printer,” Matthias explains. 3D sand printing is also proving useful for the internal parts of hydraulic systems (oil ducts). “It is another way to ensure growth at our location,” says Matthias. GF Casting Solutions in Leipzig won the company award in the Value category in 2021. The reason for this decision: “The location exemplifies the GF Purpose ‘Becoming better every day’ and leads the way in this regard. The colleagues have found their own way to optimize processes sustainably and serve as role models for other locations.”

### Customers want lighter parts

GF Casting Solutions has recently modernized other workflows to facilitate quick reaction times. “In addition to the sand 3D printer, we acquired five cleaning robots, for example, which we have been using successfully for two years,” the managing director notes. It is a very difficult job to grind cast components. Artificial intelligence (AI) has been leveraged to automate this work step, meaning that employees do not need to grind them by hand as often. There are

also plans to purchase a second sand 3D printer. The location’s strategy includes a view to sustainability. “The new generation of off-highway vehicles increasingly relies on alternative powertrains,” Matthias explains. “Manufacturers also expect us to point out on where they can save on materials – without sacrificing strength, of course – so they can increase the fuel economy of diesel engines.” The axle on a dump truck – that is, a front loader capable of operating on large construction sites – weighs up to 700 kilograms. GF Casting Solutions is working on lighter solutions that employ bionic lightweight design techniques, for example. Matthias stresses that “the recyclability of our materials plays a substantial role in climate protection, as well.” “Stamping waste from the manufacture of the body & structure in the automotive industry already accounts for the lion’s share in our manufacturing process. What’s more, our cast components, in their entirety, can also be recycled at a later point in time.” ■



**Matthias Heinrich**

**Position:** Managing Director  
**Division:** GF Casting Solutions  
**Location:** Leipzig (Germany)  
**Joined GF in:** 1995



↑ Matthias Heinrich works closely with his teams. Prototypes are now designed on the computer. Then the sand 3D printer is used to create them.



**Across the seven seas**

Interesting facts about the global marine business of GF Piping Systems

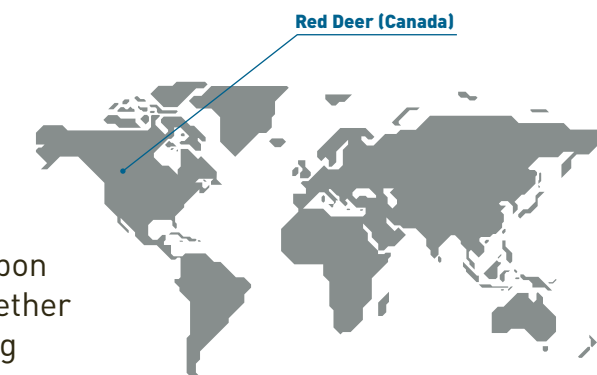
Page 36

**The box master**

Robots with GF at the core of their design: innovative high-tech for logistics centers worldwide

Page 37

## Agriculture rethought



**OUR CUSTOMERS:** The Canadian company Pure Life Carbon wants to revolutionize agriculture around the world. Together with GF Piping Systems, the company produces growing media that make plants grow more quickly and have less impact on the climate.

Canada is one of the world's largest exporters of food. Agricultural land makes up 90% of the Aspen Parkland ecoregion, which extends across parts of three provinces from Alberta through Saskatchewan to Manitoba. The region represents the world's most extensive boreal-grassland transition. In the 19th century, geographer and explorer John Palliser is said to have declared that the almost treeless area surrounding the most arid part of the prairies, the area near Red Deer, was completely unsuitable for settlement and farming.

But sometimes it just takes a bit of pioneering spirit, which was not only demonstrated by the first European settlers, but is also shown today by a company based in Red Deer, a town of 100'000 people between Calgary and Edmonton. The mission of Pure Life Carbon is to improve the productivity of indoor farming around the world as well as lessen the strain placed on the environment. Pure Life Carbon has been working with GF Piping Systems for the last three years to revolutionize the agricultural methods in use today.

**Improving the ecological side of production**

Agriculture is not only a victim of climate change but also a contributor, which makes the need for more sustainable farming all the more urgent. In fact, agriculture is the second-largest contributor to global greenhouse gas emissions after the energy sector. The main causes are industrial livestock production, fertilizer and pesticide production, long global transport paths and the draining of peatlands. The agricultural sector is responsible for nearly



6 gigatons of CO<sub>2</sub> and other greenhouse gases in total (figures from 2019), according to the World Resources Institute's Climate Watch.

This is no longer acceptable, according to Fred Munn, Vice President of Stakeholder Relations at Pure Life Carbon. The cleantech company produces growing media that help plants grow faster while greatly reducing the strain placed on the environment. "It's an honorable project," says John Giroux, Managing

↑ A complete solution from GF Piping Systems: valves, actuators, measurement technology and controllers, which regulate the processing of biocarbon in tanks. →

Agricultural land makes up 90% of the land area in the Aspen Parkland ecoregion of Canada. It is also where the company Pure Life Carbon is based.



Director of GF Piping Systems in Canada. The company's innovations in technology for sustainable agriculture are replacing other products "that are used in growing media, cannot be recycled and really just end up on landfills," John says.

Peat moss, stone wool and coconut coir are widely used in agriculture as growing media. However, these materials are not very environmentally friendly, because, for example, bogs important for the climate are drained to enable their extraction, a lot of greenhouse gases are released during their production, and they are not degradable. Also, large quantities of greenhouse gases are released during production of these materials, and they do not decompose. With the help of products from GF Piping Systems, Pure Life Carbon wants to lead agriculture into a new future.



**John Giroux**

**Position:** Managing Director  
**Division:** GF Piping Systems  
**Location:** Mississauga (Canada)  
**Joined GF in:** 2016

Process water and special chemicals are added, which turns the biocarbon into a sustainable growing medium product. At the same time, additional piping products from GF Piping Systems are used to collect spent water, which is then treated in a filtration system to prepare it for the next process.

The products from GF Piping Systems combine modern technologies with sustainable materials to ensure that industrial plants are prepared for the future. The plastic components are corrosion-free and require virtually no maintenance. This extends the service life of the system and cuts costs compared to metal components. Parts do not need to be replaced as frequently, and the probability of dangerous leaks into the environment is significantly reduced. This, in turn, ensures operational safety. "The durability, sustainability and resistance to breaking of GF products are key to the partnership," says Fred.

**Advantages of indoor farming**

He explains that it is precisely these modern piping systems that are needed to meet the challenges of farming in the future and to increase efficiency levels.

Pure Life Carbon's growing media are not only CO<sub>2</sub>-negative, they also reduce the volume needed to grow plants by up to 90% in comparison to conventional products. "A tomato plant needs one-and-a-half liters of our substrate to grow. For peat moss it would be 15 liters," explains Fred.

What's more, plants that grow on biocarbon substrate will develop fully sooner, which also promises to increase sales even more, as well as increase the

↓ The Canada-based company Pure Life Carbon makes growing media that help plants grow faster and are environmentally friendly.

**Valves, actuation and instrumentation from GF**

In its efforts to achieve this goal, Pure Life Carbon has created growing media that not only improve the quality of the soil but can also sequester larger amounts of CO<sub>2</sub>. In the production of these growing media, wood is subjected to high temperatures, a process that results in biocarbon. This is where a complete solution from GF Piping Systems comes into play. The system consists of valves, actuation, measurement technology and controllers. It regulates the treatment of the biocarbon in tanks with a volume of more than 4'000 liters. In these, the biocarbon is treated with a proprietary chemistry. GF products on the exterior of the tank measure the temperature, flow, pH levels and pressure of the mixture.

**"We are supporting innovation with our products, which will also enable sustainable food production."**

**John Giroux**  
 Managing Director of GF Piping Systems in Canada



↑ Fred Munn (left) from Pure Life Carbon and John Giroux (right) from GF Piping Systems.

→ GF products on the tank's exterior measure values such as temperature and pressure.



**Fred Munn**

**Position:** Vice President of Stakeholder Relations  
**Company:** Pure Life Carbon  
**Location:** Red Deer (Canada)

**"We have built a great partnership with GF. The company is very well integrated into our business because, working together, we have found the best way to implement this innovation in order to protect our planet."**

**Fred Munn**  
 Vice President of Stakeholder Relations  
 Pure Life Carbon

**Sustainable farming in Canada**

The Canadian government has high hopes of using applications from biotechnology in agriculture and forestry.

Pure Life Carbon is headquartered in Alberta, one of the largest crop-producing provinces in Canada. The province is also home to several initiatives and approaches that have been launched to promote bioeconomy. BioEconomy Alberta is an informal network that includes various research, development and industry initiatives. Alberta Innovates – Bio Solutions, a government-funded research institute, has developed recommendations to help grow bioeconomy in Alberta. Among other things, it advances the idea of developing policies on bioeconomy and supporting regional cluster development.

**Curious now?**

Do you want to see the manufacturing operations at Pure Life Carbon? Just scan the QR code to watch the video:



cost-effectiveness of production. Growing media with biocarbon have no known limit to their lifespan on account of the longevity of biocarbon. On the other hand, peat moss and other growing media can be used only once.

"We are supporting innovation with our products, which will also enable sustainable food production," John says.

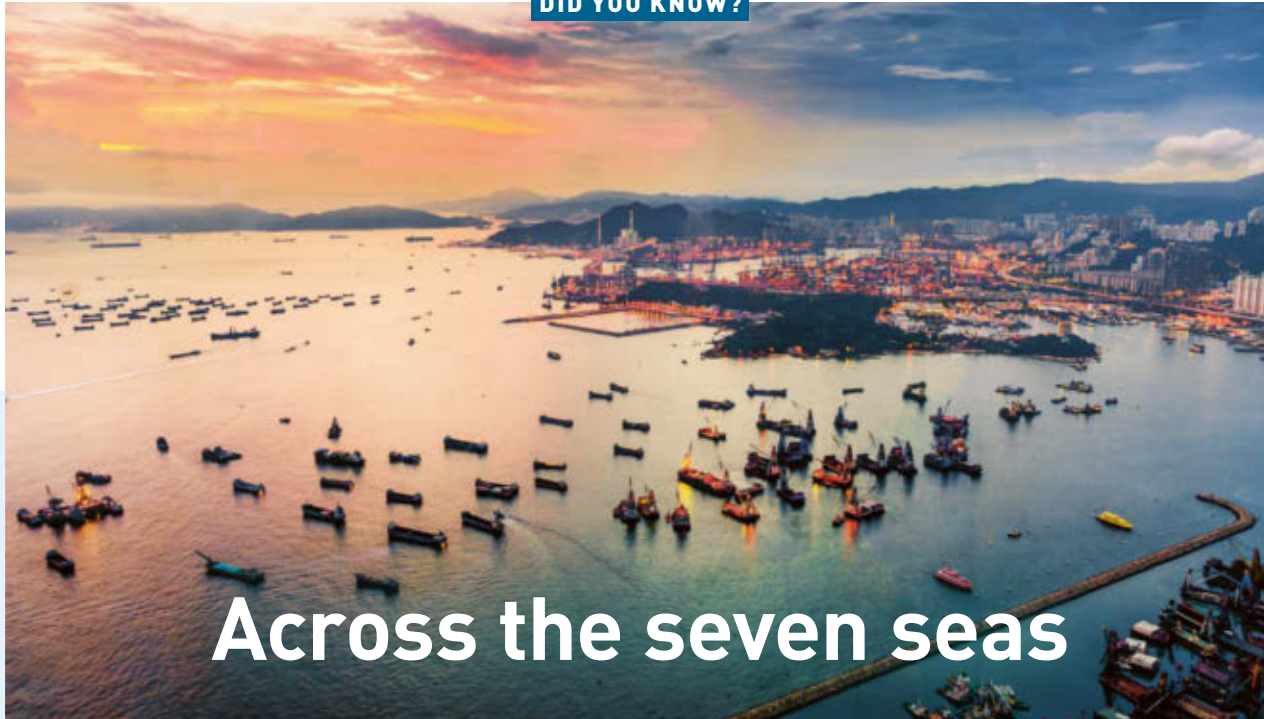
**Proven cooperation**

The Canada-based company continues to greatly value its close cooperation with GF Piping Systems, with the aim of further optimizing the production of substrates for the agricultural industry of the future.

Fred is convinced of both the quality of the products and the efficacy of the cooperation: "We have built a wonderful partnership with GF. The company is very well integrated into our business because, working in collaboration, we have discovered the best way to implement this innovation in order to protect our planet."



DID YOU KNOW?



## Across the seven seas

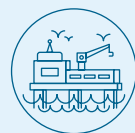
For a long time now, GF Piping Systems has been offering solutions for water and coolant transport for shipboard operations. Safety, efficiency and passenger comfort are the main focus areas. Four facts about our global marine business.



GF Piping Systems manufactures **pipng systems from plastic**, lighter than all metal alternatives, with a longer service life and no downtime. This helps to reduce greenhouse gas emissions and energy consumption. Furthermore, they require no maintenance or repair and can be installed in confined spaces using innovative jointing technology. This makes the products ideal for use on ships.



Cruise ships have miles of piping systems installed for the distribution and treatment of potable water, wastewater, pools and for other applications such as air conditioning. If 600 metal butterfly valves on a cruise ship were to be replaced by GF's 565 butterfly valve, the ship **would be up to 10 tons lighter**, which would also reduce its CO<sub>2</sub> emissions.



**Floating wind farms, offshore support vessels, floating cranes, or oil platforms** can benefit from the easy-to-install solutions from GF Piping Systems with automation functions, as they enable autonomous operation with little personnel input. GF Piping Systems is also a supplier of parts for the world's largest dual-fuel semi-submersible crane vessel (SSCV), Sleipnir, used for the installation and decommissioning of such offshore structures.



GF Piping Systems has recently expanded its presence in the marine industry. **Global business development and sales** teams work hand in hand: 16 marine specialists from 12 different countries support customers from 15 locations around the world. Prefabrication for customized solutions according to customer requirements are also carried out at 14 locations worldwide.

## 6'750 m

GF Piping Systems is the supplier of the world's largest SSCV, Sleipnir, which is used for the installation and decommissioning of offshore structures such as wind farms or oil platforms. The USD 1.5 billion project has a lifting capacity of 20,000 tons and 230 cabins. The company installed 6.75 km of thermoplastic piping systems, including Instaflex, ecoFIT and SeaDrain.

THERE'S GF IN IT

## The box master

According to the Parcel Shipping Index, an average of 5'000 parcels per second were shipped worldwide in 2022. To ensure that every parcel reaches the recipient quickly, GF is helping its customer to develop an innovative solution in some of the world's busiest logistics centers.



### Did you know ...

- **The first seven prototypes** of the GF-built chassis were cast, machined and delivered in just 12 weeks. 3D printing made this possible.
- **Stretch, the logistics robot, features a wheeled base** for maneuverability, and its mast comes equipped with cameras and sensors.
- **The robotic arm on Stretch** can lift loads of up to 23 kilograms.
- **With a fully charged battery system**, Stretch can operate over the course of a full eight-hour shift.

**Stretch, the newly developed logistics robot from Boston Dynamics, is capable of handling up to 800 boxes per hour.** GF Casting Solutions is supplying the central component of the warehouse robot that can sort packages in logistics centers or load and unload containers on ships or trucks. The heart of the robot is the chassis - i.e. the frame that is also the battery housing.

All the connections and the drive train are mounted on it, while the large, fully movable robot arm sits on top. The new Stretch leverages the power of artificial intelligence. It automatically detects the size of a box, picks it up using its gripper with suction cups and moves it to the desired location. It operates entirely without the need for automation infrastructure such as rails to perform these

tasks. Its wheeled base provides for a wide range of movement, enabling it to perform the work of two to three employees in an industry that is coping with personnel shortages. The robot is expected to hit the market in 2025. Demand is already high. Boston Dynamics is currently testing seven prototypes and an initial pre-series on the customer side. ■



## TIME MACHINE

1915

Schaffhausen's plant-operated railway was in use until: 1993  
 Annual number of railcars loaded at the plant: 4'000  
 Number of plant-operated locomotives: 7  
 Location: Schaffhausen [Switzerland]

## GF railway for the city

When in 1910 horse-drawn wagons transporting materials to GF were causing increasing congestion in local streets, GF lobbied for and financed an extension to the narrow-gauge tracks of the Schaffhausen streetcar line to the GF plants. In 1911, tracks were laid to the industrial area on the Ebnet, and then in 1913 to nearby Mühlfental. The route was shared. The plant railway brought materials to GF, and the town's streetcar brought GF employees to work. This photo from 1915 shows a plant-operated train in Mühlfental built using GF components.



## AFTER WORK

## Sausages in Japan

Joachim Nuebling works for GF Piping Systems in Japan. He loves the country, its people and the food. There is only one thing he misses: German sausages. So now he makes them himself.

Everyone knows that Japanese food is excellent. But my German taste buds were missing something: sausage! The sausages you can find in the supermarkets here have promising names like "Frankfurter," "German style" or "Grill Master," but their taste is disappointing. So I decided to start making sausages myself,

together with three friends. We have made sausages with coarser grinds and with finer grinds, as well as merguez, which is a sausage from North Africa made from a mixture of beef and lamb. They are quick and easy to make and the result is very tasty. The photo shows me with a plate of our merguez-style sausage.

## Joachim Nuebling

**Position:**  
Head of Technical Services and Marketing  
**Division:**  
GF Piping Systems  
**Location:**  
Tokyo (Japan)  
**Joined GF in:** 2006

### And how about you?

What do you do after work? Send your photo (good resolution: approx. 2 MB) together with a short description of it to:  
**globe@georgfischer.com.**



## IMPRINT

Issue #01/2023

## Publisher

Georg Fischer Ltd.  
 Beat Römer, Corporate Communications  
 Amsler-Laffon-Strasse 9  
 8201 Schaffhausen, Switzerland  
 Phone: (+41-52) 631-1111  
 globe@georgfischer.com

## Project team

Marta Falconi (Editor-in-Chief), Isabel Proske (project management), Carsten Glose (editorial team - Corporate), Susanne Düggelein, Julia Schäfer Gomez (editorial team - GF Piping Systems), Ramona Bernegger, Linus Gemperli (editorial team - GF Casting Solutions),

Johanna Lüder (editorial team - GF Machining Solutions)

## Production

Axel Springer Corporate Solutions GmbH & Co. KG  
 Nicole Langenheim (project management), Anika Berger, Philipp Blanke (editorial team), Jennifer David (art direction), Anne Schälke (photo editing)

**Printing: Chinese edition**  
 DE Druck Europa GmbH

**Printing: other editions**  
 optimal media GmbH

## Image captions

Cover: Cathrine Stukhard; Illustrations: Clara Philippzig; p. 2-3: private (6), GF, Iron Library, Illustration: Uli Knörzer;

p. 4-5: Martin Maier, Alberto Bernasconi, Michael Bader, Gerard Yunker, Boston Dynamics, GF; Illustrations: Uli Knörzer (3); p. 6-7: GF (6); p. 8-15: Martin Maier (10), Stefan Meyer/Meyerkangangi (3), Cathrine Stukhard (3), Getty Images/Moment/Songsak Rohpravit, GF (2); Illustrations: Clara Philippzig; p. 16-17: Glenn Harvey; p. 18-19: private (5); p. 20-22: Alberto Bernasconi, A. Cross Onlus/Enrica Rosato, Lions Club Seregno AID/Francesco Viganò (2), GF; p. 23: Illustration: Uli Knörzer; p. 24-25: Jann Lipka (5); p. 26-28: Getty Images/Stone/Martin Puddy, GF (3); p. 29: GF; Illustrations: Clara Philippzig; p. 30-31: Michael Bader (5); p. 32-35: Thomas Linkel/laif, Gerard Yunker (4), GF (2); p. 36: Getty Images/Moment/eqsk134; p. 37: Boston Dynamics; p. 38: Iron Library; p. 39: private; p. 40: JBL; Illustration: Uli Knörzer

Globe is published three times a year in German, English, French, Italian, Romanian, Portuguese, Turkish and Chinese, and has a total print run of 11'000 copies.

Editorial deadline for the #02/2023 issue is the end of March 2023.





# Thank you!

We are grateful to all our colleagues at GF who shared their stories in this issue and supported us in publishing it.



## Your topics

Do you have an exciting story that you would like to share with all GF employees? Write to us!



## Your feedback

In your opinion, what was the best thing about this issue? What could we improve? We look forward to your feedback.



**The Globe team (from left to right):**  
Isabel Proske, Johanna Lüder, Susanne Düggelin,  
Carsten Glose, Marta Falconi, Ramona Bernegger

The Globe editorial team is looking forward to your message! Send us an e-mail at:

[globe@georgfischer.com](mailto:globe@georgfischer.com).



## Competition

All employees who send us an e-mail at [globe@georgfischer.com](mailto:globe@georgfischer.com) by **31 March 2023** with ideas for the sections **Hello!**, **Hidden Hero**, **My Best Lesson** or **After Work** will be included in a prize draw to win a **portable, waterproof Bluetooth speaker from JBL**.

Take part and, with a bit of luck, be in the next Globe!

### **This issue's winner is:**

Michelle Reder, GF Piping Systems, Irwindale, CA (US)



### **Conditions of entry**

Georg Fischer Ltd (GF) is the organizer of the competition. All GF employees are eligible to participate. Participants consent to publication of their name if they win. The winner will be chosen from a random drawing from all eligible entries received before the deadline. The prize cannot be paid out in cash. There shall be no legal recourse. Participating in the competition implies your agreement to these conditions of entry. Your data will be processed for the purposes of the competition. For more information, please see the privacy statement on the GF website (<https://www.georgfischer.com/privacy-statement-de>).



## Globe is also available online!

The latest issue of Globe is also available online in German, English and Chinese at:

[globe.georgfischer.com](http://globe.georgfischer.com)