



# Corporate Responsibility Report 2021



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# Company Profile

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GlobalFoundries is one of the world’s leading semiconductor manufacturers and the only one with a truly global footprint. We are redefining innovation and semiconductor manufacturing by developing feature-rich process technology solutions that provide leadership performance in pervasive high growth markets.

As a steadfast partner, with a unique mix of design, development and fabrication services, GF works collaboratively alongside our customers to bring a broad range of innovative products to market. With a global customer base, a talented and diverse workforce and an at-scale manufacturing footprint spanning three continents, GF is delivering a new era of more.

Semiconductor technology is not only central to our global economy, it’s at the heart of everything—laptop computers, noise-cancelling earbuds, smartphones,

data centers, autonomous automobiles, and the high-speed networks and multimedia tools that enable video conferencing to help businesses and schools stay connected. As technology transformation continues to accelerate, it is abundantly clear that the world’s reliance on semiconductors will only further increase.

GF operates manufacturing facilities in Dresden, Germany; Malta and East Fishkill<sup>1</sup>, New York; Burlington, Vermont; and Singapore. These facilities primarily manufacture semiconductor wafers, and our sites in Dresden and East Fishkill have additional capabilities for wafer bumping. All sites have the highest level of quality certification and are dedicated to the GF “zero excursion, zero defect” mission in support of our customers. On June 22, 2021, we broke ground for the construction of GF’s new Singapore Fab in the Woodlands Wafer Fab Park where our current campus is located.

GF’s manufacturing is complemented by a global network of R&D, design enablement, and customer support operations (please refer to the map “[Company Locations](#)”).

Corporate Responsibility is fundamental to our culture and our value proposition to our customers, the communities in which we live and do business, and our full range of global stakeholders. At GF, we are committed globally to ethical and responsible business practices. In 2020 and into early 2021, GF has been recognized for outstanding employment practices, and for exceptional CSR (Corporate Social Responsibility) and EHS (Environmental, Health and Safety) performance with the following awards:

<sup>1</sup> As part of our strategic partnership with ON Semiconductor launched in April 2019, GF will transfer ownership of this site to ON at the end of 2022.



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# Company Profile

## Recognition for Responsible Business Alliance (RBA) Validated Assessment Program (VAP) Audits:

- GF Singapore achieved Platinum Level Recognition for the third time for a completed on-site RBA VAP Audit, achieving the maximum score of 200 in their audit in November 2020;
- GF Fab 8 and 9 earned the maximum score of 200 in their respective RBA VAP Audits, conducted in October 2020 and February 2021 respectively. Due to COVID-19, these audits, while intensive, were either partially or fully virtual. RBA currently provides "Remote Recognition" for such audits.

## EHS Today: 2020 America's Safest Companies Award

- GF demonstrated excellence in occupational safety management practices, including support from company management for EHS efforts, employee involvement and comprehensive training, and other, innovative solutions to safety challenges, all having led to injury and illness rates lower than the average for our industry in 2020.

## 2021 Albany Business Review: Leader in Diversity, Equity and Inclusion Award

- GF was recognized with the 2021 Leader in Diversity, Equity and Inclusion Award for businesses who have made sustainable efforts in creating a more diverse, equitable and inclusive business community. This award is for companies making tangible change on business culture, employee demographics and leadership representation for sustainable long-term effects.

## 2020 Dresden's Best Employers

- Awarded by the business magazine Capital. The evaluation took into account GF Dresden's specific commitment to the region, dedication to social responsibility, the active shaping of the business location and the recommendation as an attractive employer.

## 2020 Germany's Best Companies for Vocational Training

- Awarded by the business magazine Capital and Ausbildung.de. GF Dresden scored specifically well for our support and involvement of trainees, for innovative teaching methods and the excellent learning quality in the company.

## 2020 German Innovation Leaders

- GF Dresden was honored to be named a German Innovation leader by Frankfurter Allgemeine Zeitung for both our innovativeness as well as the influence of our patents on other inventions.



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# Company Profile

## 2020 Best Employers in Germany

- Newspaper WELT has assessed GF Dresden's "very high attractiveness" as an employer in the industrial sector.

## Signature Award 2020: Financial Wellness & Communication

- GF, US was awarded the 1st place Signature Award in category Investment Education, sponsored by Plan Sponsor Council of America & PNC Bank. The award was given in recognition of the outstanding communication and change management associated with GF's 401k financial wellness platform.

## 2020 Singapore Community Spirit Gold

- GF Singapore received the award in recognition of the collective contributions from the company and its employees to The Courage Fund. This giving effort has helped social service agencies and the people they supported through the many challenges arising from the COVID-19 pandemic.

## 2020 Singapore Children's Cancer Foundation Appreciation Award (Silver)

- GF Singapore was presented a Silver Appreciation Award by Singapore Children's Cancer Foundation (CCF) for the collective effort and giving of the company and our employees in 2019.

## 2020 New York Capital Region's Healthiest Employers Award

- GF Fab 8 was honored by the Albany Business Review for wellness programming and benefits that go above and beyond, for example regarding wellness program culture and leadership commitment.

## 2021 Vermont Governor's Excellence Award in Worksite Wellness - Gold level

- For the 2nd consecutive year, GF Fab 9 received Vermont Governor's recognition for commitment to health and wellness.

## 2020 Community Impact Award by the Lake Champlain Chamber

- Fab 9 was recognized for enhancing the quality of life of the Lake Champlain region of Vermont.



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# Company Locations





## CEO Statement

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For the world 2020 was an unprecedented year in so many ways. The global COVID-19 pandemic impacted every aspect of our lives from how we work and educate, to how we engage with our families and our communities. In addition to the impact of the pandemic, the acceleration of the digital transformation and geopolitical forces brought awareness and focus on the criticality of our industry—it exposed the various supply chain strengths and vulnerabilities across the regions of the world. Our industry suddenly became a focal point for industrial, commercial and foreign relation policies of governments around the world.

The power of the world's digital infrastructure was suddenly brought to the forefront of our lives. Yes, we had grown accustomed to on-line shopping, internet search, social media and entertainment—today's most prized conveniences that the digital world provides. But now we were suddenly faced with relying on the digital world in an unprecedented way—to fight a contagion, to run our companies remotely, to keep the economy afloat, to educate our children—in a sense, to enable almost every part of our lives.

It is amazing to see not only how pervasive and resilient the digital infrastructure had become over the last decade, and yet how little of its full potential was not exploited until COVID-19. It seems we have treated this incredible capability as our collective fallback plan or safety net. Today, humankind is more dependent than ever on technology with the realization that the world – and how we once lived – will never be the same.

We began to talk about a “new normal”—almost in a nostalgic or sentimental way. Then, we started to imagine not a new normal—but a “better normal”. This better normal that will come from exploiting the capabilities of a pervasive, expanding and improving digital infrastructure. We will want a revolutionary adoption of digital technology.

This is not just an opportunity for our industry—it is our calling. For me, our industry has always had the responsibility and obligation to create solutions that benefit humankind. Prior to the pandemic, there was a feeling that technology was moving faster

than humankind could adjust. But now, the world needs our industry to accelerate the digital transformation.

At GF, we take this responsibility to heart. As we partner with our customers to innovate and deliver solutions we do so always with our commitment to corporate social responsibility and environmental health and safety as our guiding force.

In this 2021 Corporate Responsibility Report, I am pleased to present the tangible results we have delivered, and I would like to highlight a few key achievements:

### Safety

At GF we start every manufacturing operations meeting reviewing our safety program and metrics. So, it is appropriate that I do so here as well. Our foundational commitment to the safety and well-being of our employees has been the North Star guiding us always and served us well throughout the pandemic. Over the course of this long period, we have seen COVID-19 cases rise and ebb, and then rise again in critically





## CEO Statement

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affected regions such as India. Our strict on-site protocols, along with our extended work-from-home mandates, has allowed us to protect our people while we maintained our essential manufacturing operations to always meet, and even exceed, customer commitments. With the growing availability of vaccines, we have now been able to increase employee on-site presence where this can be safely accomplished.

I have personally championed our “Journey to Zero” ambition to reduce occupational injuries and illnesses to the lowest possible levels. In 2020, GF recorded the lowest Total Recordable Injury Rate (TRIR) in our twelve-year history, reflecting best-in-class safety performance. We were also honored to be recognized as one of “America’s Safest Companies” by EHS Today. In April 2021 we achieved enterprise certification to ISO 45001, the newest standard for Health and Safety Management Systems.

### Employees / HR

We are applying what 2020 taught us with the convergence of the pandemic and social injustices to finding new ways to care for our employees, embrace diversity and inclusion, connect our GF communities, and stand tall for societal issues. Our values of Create and Deliver speak to “what we do” as a company while Partner and Embrace speak to “how we work together” to enable a culture that encourages each individual to do their best work and be the best version of themselves.

Our response to the global pandemic situation focused on adapting our work environment, policies, and benefits to support our employees. We’ve taken a creative and heartfelt approach to care for our employees during the pandemic with global benefits including paid quarantine leave, paid emergency time, childcare initiatives including virtual summer camp curriculum, and many regional efforts to support our employees across the globe. We also launched our new parental leave program that offers best in-class paid time off for both birthing and non-birthing parents.

As we return to the office, our goal is to identify and implement flexible work solutions to better support employee work-life integration and wellbeing. We know flexibility is important to all of us because it improves our engagement, wellbeing, and morale. We developed GF flex solutions designed to better support our diverse workforce and offer a more inclusive culture that allows employees to better integrate their life into work at GF.

We are most successful when our employees can contribute their value in the way that works for the business, themselves and their teams. We accelerated our journey in diversity and inclusion with initiatives that focus on growing our representation of women and underrepresented minorities, building a culture of inclusion, and creating equitable opportunities for success. We’ve taken actions to increase the aperture for sourcing and recruitment of talent. We’ve designed custom inclusive leadership training to build skills and developed differentiated talent management strategies focused on creating more equitable outcomes.





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## CEO Statement

Since 2019, we have more than doubled our employee-led Employee Resource Groups (ERGs), improving the employee experience, fostering allyship, and amplifying underrepresented voices on how we can be better. We started the conversation around issues that affect our society including racism and discrimination. GF launched a Social Justice & Equity campaign, donating over \$200k to nonprofits that fight systemic racism and help advance the cause of racial justice, equality, and an inclusive society. We're passionate about our future and the company we are becoming, including taking action to embrace a more socially conscious culture.

### GlobalGives

Our GlobalGives program provides employees at all of our sites with the opportunity to make a positive impact in their local communities in the areas of education, philanthropy and the environment. Each of our fab locations have well-established programs and teams dedicated to enriching the lives of local citizens, and we take great pride in their long history of community involvement and service.

GF employees made over 7,800 individual donations in 2020, totaling over \$500K in charitable giving—four times the amount donated in 2019. Collectively, between corporate funding and our employee generosity, GF proudly donated more than \$2.2M USD to support our communities around the world in 2020. GlobalGives continues into 2021 with employee donation matching with specific campaigns addressing humanitarian help. In May 2021, GF initiated a giving campaign for COVID-19 stricken India. GF donated \$50K in relief funds across a number of charities to help provide oxygen supplies, screening, treatment and other urgent necessities. This campaign also includes a special 2:1 match for our employee donations. So far, between GF and employee donations plus matching, we've exceeded \$120K in total relief funds for this campaign.

### Journey to Zero—Resource conservation and environmental efficiency

We are making great progress against our 2018-2021 goals. By the end of 2020, we had already exceeded our three-year targets for water, greenhouse gases (GHG), and chemical use and waste generation.

Over the past 5 years, GF has significantly increased our environmental efficiency (relative to manufacturing output) by ~ 25 percent for Energy, Water and GHG. GF worked hard to keep the absolute resource use and emissions relatively flat while GF production has grown by roughly 35%.

We are not stopping here. GF is extrapolating our Journey to Zero theme, developing a new generation of resource conservation goals for energy, water, GHG emissions, and chemical use / waste generation that will aggressively drive environmental efficiency over a longer term goal horizon.

In August 2021 GF announced our "Journey to Zero Carbon" initiative, which builds on our long history of proactive investment in Greenhouse Gas (GHG) emissions reduction. We are setting a goal to reduce absolute GHG emissions by 25% from 2020 to 2030 by investing in enhancing manufacturing controls, further improving energy efficiency, and sourcing renewable and lower-carbon energy—even as we significantly expand our global manufacturing capacity.



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## CEO Statement

### CSR Audits

As a member of the Responsible Business Alliances, GF seeks to assure responsible conduct in our own operations and throughout our global supply chain. From 2020 through Q1 2021, three GF sites conducted extensive third-party audits of our Corporate Responsibility management systems spanning Ethics, Labor and EHS. Due to the ongoing pandemic, these included on-site, hybrid and fully remote audits. Regardless of the model, in all audits we received 200 point scores out of 200 possible.

These are just a few of the highlights from this comprehensive report. I invite you to review the report in its entirety to better understand the level of commitment and dedication GF has to social and environmental responsibility.

I am extremely proud of our progress, made possible by the dedication and passion to these programs of our global team, especially in these unique and challenging times. I look forward to continuing to partner with our customers, suppliers and communities to responsibly address the new challenges and opportunities ahead—always with unyielding integrity.

**Dr. Thomas Caulfield**  
CEO  
GF



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# GF Stakeholders and CSR Priorities

Our key stakeholders have a significant interest in our business and help shape our company and the products and services we provide. We regularly engage with our employees, customers, communities, suppliers, and industry peers, sharing perspectives and gaining valuable insight relevant to our business and operations.

## GF Stakeholders Employees

At GF, people are at the heart of everything we do and we embrace the diversity of our teams as a competitive advantage. Our strength comes from a culture of inclusivity, empathy, and respect. We take great pride in the dedication and commitment of our global workforce to collaborate together for breakthrough solutions. We nurture a performance-based culture in an environment that encourages individual development, collaboration, and new ideas.

Employees engage and keep abreast of corporate and local site information through our GFCurrent platform, quarterly all-hands events, Employee Resource Groups and

other global or site-specific team events, and ongoing corporate and employee communications, all of which include opportunities to ask questions and provide feedback. To enable employees to stay up to date during the global COVID-19 pandemic crisis, we added communication channels, including a weekly video message from our CEO and other GF leaders.

GF also seeks in-depth and confidential employee feedback via our third-party administered ONEGF Pulse Surveys that occur multiple times per year. Our surveys focus on engagement, manager effectiveness, diversity & inclusion, and other emerging themes that impact the employee experience. In 2020 specifically, the addition of survey questions about COVID-19 preparedness, pandemic communication, and employee well-being yielded particularly important employee feedback that translated into immediate action and resolution by our management team. GF management thoroughly reviews employee feedback, translates input into action plans that address employee concerns, and shares both the feedback and the

resulting action plans with employees both at the company and at the team level. This two-way engagement has yielded not only powerful insights but the ability to address concerns early and thoroughly.

## Customers

It is GF's mission to innovate and partner with our customers to deliver technology and solutions for humanity. GF technologies, solutions, services, and manufacturing scale give our customers the power to shape their markets. We work closely with both industry leaders and entrants to identify the right technology opportunities and deliver the right solutions across established and emerging applications in our customers' market segments.

Our Customer Experience program is geared to continually improve our customers' experience when partnering with GF by listening to and feeding our customers' voice back into our business processes. This includes our customers' voice on our shared commitment to social and environmental responsibility.



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## GF Stakeholders and CSR Priorities

- We track internal, customer-facing key performance indicies that closely align to our customers' Quality, Business, Technology, Fulfillment and Responsiveness targets to ensure we can quickly make course corrections when needed.
- We conduct third-party customer relationship surveys to enable a deeper assessment of our performance.
- We manage customer issues in our Action Management and Escalation system to ensure responsive follow-through to our commitments.
- We meet with our customers on a regular basis to review our performance. Improvement projects are prioritized based on customer feedback.

In every aspect of our Customer Experience Program, our GFSHIELD program is in place to ensure our customers' intellectual property and sensitive information remain secure.

### Communities

Along with our global footprint comes a responsibility to the communities in which we operate. GF believes strongly in philanthropy, and our employees around the globe make a difference by volunteering their time and donating money and goods to support a wide range of causes. GlobalFoundries has a long history of community involvement, with well-established programs and global and local teams dedicated to enriching the lives of the people in our communities around the world. Through our worldwide GlobalGives program, we provide employees with the opportunity to make a positive impact in their local communities through personal donations, company matched donations as well as through volunteering their time. Recognizing increased community needs during the global COVID-19 pandemic crisis, GF increased its community support, committing in early 2020 to donate more than \$1M to support local communities. GF has also engaged employees directly by enabling them to direct company donations of personal protective equipment (PPE). The company has made significant

equipment donations during 2020—including medical-grade masks, gloves, and gowns—to local hospitals and first responder organizations in each of our regions.

### Suppliers

Our relationships with our suppliers of goods and services are built on a foundation of trust and integrity. We strive to establish long-term working relationships through mutual performance expectations and measures, performance feedback, and continuous improvement plans. Beyond the day to day working level interaction, we engage with our suppliers through periodic business reviews and our Global Supplier Rating (GSR) process. The GSR determines supplier performance with regard to Quality, Cost, Operations, Service, Technology, Business Continuity and Compliance, including Environmental, Health & Safety (EHS) and Corporate Social Responsibility (CSR). EHS and CSR expectations are established early in supplier relationships to improve efficiency and reduce risks throughout the supply chain. We extend our commitment to responsible business practices



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# GF Stakeholders and CSR Priorities

to our suppliers, requiring them to comply with the Responsible Business Alliance (RBA) Code of Conduct. We specifically engage with suppliers whose employees perform work on GF sites to assure conformance with site-specific EHS and CSR rules and procedures.

## Industry Collaboration

Through our participation and leadership in semiconductor industry trade associations, we gain valuable insight into the economic, social, and environmental trends that affect our business. These groups include the RBA, Semiconductor Industry Association (SIA), the European Semiconductor Industry Association (ESIA), the World Semiconductor Council (WSC), the Global Semiconductor Alliance (GSA), Semiconductor Equipment and Materials International (SEMI), and ZVEI (a leading German electronics trade association).

These associations are engaged in a wide variety of public policy matters ranging from technology, trade, tax, and environmental policy to promoting STEM (Science, Technology, Engineering, and Mathematics) education and the adoption of energy-efficient technologies. SIA, ESIA, the WSC, and SEMI all have active EHS committees.



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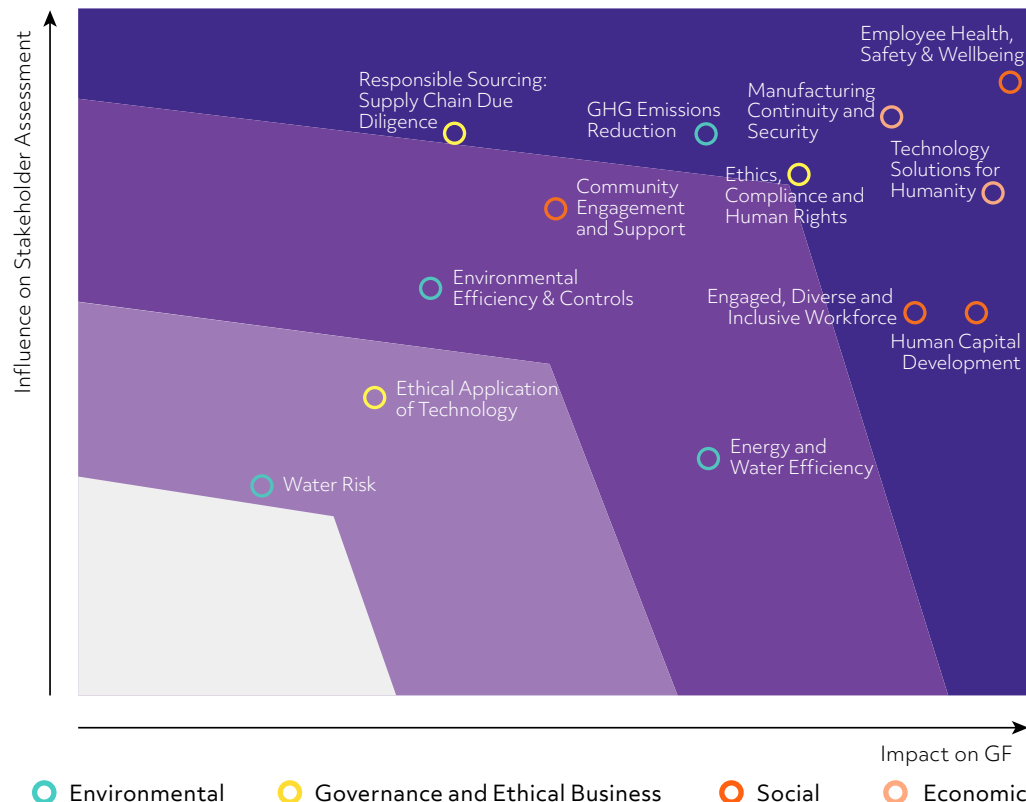


# GF Stakeholders and CSR Priorities

## GlobalFoundries' Materiality Analysis

This report focuses on certain Corporate Social Responsibility priorities that we consider “material” to our business. We periodically conduct a Materiality Analysis by screening and evaluating internal and external stakeholder input and expectations. We consider customer inquiries, employee surveys, industry CSR topics and trends, as well as diverse internal perspectives on the relevance of CSR topics to GF's business. Identified topics are prioritized with regard to their economic, environmental, and social impacts to GF and their perceived importance to internal and external stakeholders. The resulting Materiality Map ([Figure 1](#)), which determines the scope and content of this report, was reviewed and approved by the Stewardship Committee in April 2021.

Figure 1. GlobalFoundries' Materiality Map





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## Governance

GlobalFoundries is committed to upholding the highest degree of ethical behavior in everything we do. Each of our employees, contractors, and consultants has the responsibility to carry out his or her duties in a manner consistent with this commitment.

### GlobalFoundries' Worldwide Standards: Code of Conduct

GF's Worldwide Standards: Code of Conduct (Code) is the foundation of our Ethics & Compliance program and an integral part of our Corporate Social Responsibility Management System. It sets forth the basic rules, standards, and behaviors that we must follow to achieve our business objectives while upholding our values. The Code summarizes legal and ethical standards and provides practical advice covering a wide range of issues pertinent to ethical business practices, including human rights, discrimination, harassment, environmental responsibility, protection of confidential information and intellectual property, anti-bribery, and anti-corruption. It also explains the major elements of our ethics and compliance program and identifies where employees can seek help and support.

### Focus on Preventing Corruption

In addition to the Code, GF has implemented and communicated our Anti-Bribery and Anti-Corruption, Gifts and Entertainment, Conflicts of Interest, Insider Trading, Anti-Money Laundering, and Fraud Controls policies to further illustrate to our employees and business partners our commitment to doing the right thing. These policies include plain-language definitions of core concepts, scenarios that serve as examples drawn from our employees' own experiences, and procedures to ensure compliance. Along with the Code, these policies form the foundation of our Ethics and Compliance program.

### Ethics & Compliance Office

GF's Ethics & Compliance Office (a part of the Legal Department) coordinates the ethics and compliance program and works to foster a culture of principled behavior and decision-making. This office is responsible for promoting employee awareness, education, and training, and implementing a program to assess risks and proactively prevent and detect unlawful/unethical conduct. It is a resource for employees to ask questions or

raise concerns and it is an integral part of our culture driven by executive leadership. Each year our CEO addresses all employees regarding the importance of maintaining the highest ethical and compliance standards as we perform our work. That message is continually cascaded throughout the organization to reinforce the importance of doing the right thing at all times.

The Audit, Risk & Compliance Committee (ARCC) is the body charged by the GF Board of Directors to oversee the Ethics and Compliance program. The Ethics & Compliance Office is required to update the ARCC on key initiatives, metrics, and notable investigations on a quarterly basis. The leader of the Ethics & Compliance Office serves as Secretary to the ARCC and has a direct line of communication with the ARCC Chair. The Ethics & Compliance Office also works closely with the GF Ethics Committee (which includes the Chief Human Resources Officer, Chief Financial Officer, Chief Legal Officer, Chief Audit Executive, and other senior operations leaders). The GF Ethics Committee meets quarterly for formal review of key initiatives,





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metrics and notable investigations, and each investigation conducted by the Ethics & Compliance Office is reviewed by a member of the Committee prior to closing.

The Ethics and Compliance program is implemented through a Compliance Network which consists of over 50 influential employees nominated from various GF sites and business functions around the globe. Network members serve as accessible, familiar contacts to employees and provide a direct conduit from each location to the Ethics & Compliance Office. Network members also help identify key compliance risks, drive engagement, and ensure that training and communications are tailored to the needs of the individual sites.

The Ethics & Compliance Office performs an annual assessment of company risk regarding potential violations of the GF Code (including corruption and fraud) and utilizes the input of subject matter experts and the Compliance Network to validate risk measures by category and region of operation. The results of this assessment are put into practice

through policies and programs covering a range of risk areas including anti-bribery and anti-corruption, protecting confidential information, and insider trading, all of which are also encapsulated in the GF Code.

### Asking Questions, Raising Concerns, No Retaliation

Employees, contractors, and partners are encouraged to ask questions and raise concerns. Ethics & Compliance personnel are available in person, by phone or by email. In addition, GF maintains an Ethics First Helpline which is a confidential, anonymous whistleblower hotline administered by a third party. The Ethics First Helpline is available globally via links on both GF's intranet and external website. The Helpline is accessible 24 hours a day, 365 days a year and online access is available in English, German, and Mandarin. Call center translation services are also available in over 200 languages enabling employees and other stakeholders around the world another avenue to raise questions and/or report concerns. We make this contact information known through various internal and external communications throughout the

year and include it on all GF-issued purchase orders. We promptly review all reports and the company is committed to protecting anyone who makes a good-faith report from retaliation or discrimination. Investigations of complaints are overseen by the Ethics & Compliance Office and supported confidentially by other internal organizations such as Internal Audit and Global Security as appropriate.

The Ethics & Compliance Office also evaluates conflicts of interest and gifts & entertainment disclosures and responds directly to employee inquiries to ensure maximum engagement on Code-related topics. Ethics & Compliance is similarly a key member of the GF Charitable Donations Committee which reviews and approves prospective corporate charitable donations, utilizing a third-party platform to evaluate charitable causes and process employee donations and corporate matches.



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## Training and Communications

The Code is communicated to all employees when they begin work with GF. Code training is conducted upon hire and is repeated annually. Code training includes modules with a specific anti-corruption focus, including avoiding conflicts of interest, appropriate handling and disclosure of gifts and entertainment, and anti-bribery. We update the training annually using a risk-based approach. The training, as well as the Code itself, is delivered in English, German, and Mandarin to ensure that the content is easily understood by all GF employees across the globe. GF achieved a 100% training completion rate among active employees in 2020, and we strive to ensure that same level of completion each year. Contractors also acknowledge understanding of and compliance with the Code.

GF provides additional focused training for targeted audiences. For instance, leaders at GF across the globe complete a two-hour instructor led course entitled “Leading with Ethics” that focuses on ethical behavior and decision-making. In 2020, we launched “Avoiding Ethical Pitfalls”, an online targeted

training to our global sales organization focused on anti-bribery and anti-corruption, insider trading and protecting confidential information. New hires around the globe complete “Respectful Workplace” training and US employees complete annual “Preventing Workplace Harassment” training. These courses are part of a broader organizational engagement plan that includes articles, visual displays, and other means of communication to ensure education regarding ethical issues. We also conduct an annual global Ethics Week to heighten focus regarding specific provisions of our Code of Conduct. In 2020, a renowned leader in creating “speak up” culture presented to approximately 400 leaders of our global executive team, including our CEO and members of the Senior Leadership Team. That presentation was made available to all employees at the direction of our CEO to reinforce the importance of maintaining that culture.

## Governance Framework

Corporate governance addresses the way in which companies are directed, controlled, and managed. Our governance framework is focused on four pillars: responsibility, fairness, transparency, and accountability.

## Ownership

GF is 100% owned by our shareholder, Mubadala Investment Company, which is wholly-owned by the government of Abu Dhabi in the United Arab Emirates.

## Board of Directors

The Board of Directors (the Board) is the body charged with the ultimate responsibility for ensuring appropriate governance across the organization and establishing the “tone at the top.”

The Board reviews and determines the company’s strategy, monitors and assesses the company’s corporate and financial performance, establishes and monitors effective compliance systems and policies, and oversees the performance of GF’s executive management. The Board is



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## Governance

composed of our CEO, Dr. Thomas Caulfield; representatives of Mubadala Investment Company, our shareholder; and other senior industry leaders. The Board draws on a great depth of experience that spans the technology, semiconductor and equipment industries, international finance, energy, aerospace, infrastructure, real estate, risk management and business development. The Chairman of the Board is not an executive officer of the company.

### Board Committees

Three committees support the Board in carrying out its governance responsibilities: Audit, Risk & Compliance; People & Compensation; and Nominating and Governance.

**The Audit, Risk & Compliance Committee (ARCC)** is mandated by the Board to oversee the integrity of financial statements; compliance with legal and regulatory requirements (including oversight of the Ethics & Compliance program); the effectiveness of internal systems and controls (including the company's internal audit function); the risk

management function; and the independence, qualifications, and performance of the company's external auditors.

### The People & Compensation Committee

assists the Board in fulfilling its responsibilities concerning the hiring and compensation of our executives and in providing guidance to GF's management on personnel and compensation issues.

### The Nominating and Governance Committee

advises the Board on matters concerning corporate governance (including the function of the Board and its committees), recommends to the Board appropriate candidates to serve as Directors of the Company, and makes recommendations regarding Directors' compensation.

### GlobalFoundries' Chief Executive Officer

GF's Chief Executive Officer is responsible for managing the company's business and is accountable to the Board. The primary responsibilities of our CEO and senior management broadly cover the management of the day-to-day operations of the business,

strategic planning, budgeting, financial reporting, risk management, and compliance.

### Support for the Board and its Committees

With the ARCC, the Legal Department and the Internal Controls Department are mandated by the CEO to oversee corporate governance at GF. Together, the Legal Department and the Internal Controls Department certify that the organization adheres to the company's corporate governance framework and associated policies and procedures, provide guidance, and ensure training sessions are conducted on a regular basis.

Internal and external auditors play crucial roles in assisting the Board and management. External auditors are responsible for auditing the financial statements of the company. The Internal Audit organization plays an important role in providing the Board and senior management with objective assurance support for the business and consulting services. Internal Audit evaluates the effectiveness of risk management, internal controls, and governance processes, and



# Governance

makes recommendations for improvement. Internal Audit also acts as a bridge between the Board and management, and reports directly to the ARCC.

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## Delegation of Authority

GF is an integral part of the Mubadala Group. An important mechanism in maintaining a strong relationship with our sole shareholder is the shareholder-approved Delegation of Authority (DOA). The DOA allows the shareholder to exercise control and oversight over the authority levels within the company.

In accordance with the GF’s DOA, the Board has delegated certain of its powers to the Board Committees, the CEO, and management. The Board, management, employees, contractors, agents, and anyone acting on behalf of GF are responsible for ensuring that they operate in accordance with the DOA. On an ongoing basis, management in coordination with the ARCC ensures that the DOA is appropriate for the nature of the business and that it is reviewed on an annual basis.

## ESG Governance

In addition to the oversight provided by the Board and its committees with regard to Environmental, Social and Governance (ESG) matters, GF’s Stewardship Committee is responsible for setting strategic direction, conducting management review, and providing approval for ESG related topics. These include topics such as global Environmental, Health & Safety (EHS), Corporate Social Responsibility (CSR), Human Capital Development, Diversity & Inclusion, and Supplier Responsibility.

## Responsible Business Alliance (RBA) Code of Conduct, Self-Assessments and Audits

GF’s Code is aligned with the Responsible Business Alliance Code of Conduct (RBA Code). GF joined the RBA in 2016, following years of incorporating its Code into our business practices. We stand committed to the RBA Code and its continuous pursuit of excellence in corporate responsibility and the extension of responsible practices throughout the supply chain. We review the RBA Code internally each year and as a regular RBA member participate in the RBA’s own Code revision process.

GF is strongly committed to protecting the fundamental human rights of all people. We strive to maintain a fair and inclusive workplace based on a culture of respect, dignity, and integrity for all. As outlined in our Code, the company strictly forbids all forms of child labor and forced, compulsory, or trafficked labor in the operation of our business and in our supply chain. We respect the rights of employees to associate freely and have a zero-tolerance policy against harassment, including sexual harassment, or discrimination based on age, ancestry, color, marital status, medical condition, mental or physical disability, national origin, race, religion, protected genetic information, political and/or third-party affiliation, sex, sexual orientation, gender identity, veteran status, or any other characteristic that is protected by applicable law.

We assess our own conformance with the RBA Code annually, using the RBA’s self-assessment questionnaires (SAQs) for our corporate programs and for each of our manufacturing sites. To date, all of our SAQ results are rated as “low risk” for



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## Governance

non-conformance with the RBA Code. GF Internal Audit also reviews conformance with ethical standards as appropriate while executing its audit plan including reviews to ensure compliance with anti-bribery provisions and of the GF whistleblower program.

At selected sites, we participate in the RBA's VAP (Validated Assessment Program), an independent bi-annual third-party onsite conformance audit. SAQ and VAP audit results are shared with our customers within the RBA-Online tool. GF's most recent VAP audits each earned the maximum VAP audit score of 200 with zero findings across all five categories audited (Labor, Safety and Health, Environmental, Ethics, Management Systems). We also use the RBA's assessment tools to evaluate supplier performance ([see 10 Responsible Sourcing](#)). GF's 2020 SAQ scores, risk ratings and VAP scores are listed in [Table 1](#).

Table 1: GlobalFoundries' 2020 SAQ Scores, SAQ Risk Rating and VAP Scores

	2021 SAQ		VAP Audit	
	Score (100 Points Possible)	Risk Rating >85% = Low Risk	Score (200 Points Possible)	Date of Most Recent Audit
Corporate	94.9	Low	N/A	N/A
Fab 1 Dresden, Germany	90.9	Low	—	None performed to date
Fabs 2, 3, 5, & 7 Singapore	89.8	Low	200 (RBA VAP Platinum Level Recognition)	November 2020
Fab 8 Malta, New York	90.3	Low	200 (RBA VAP Remote Recognition) <sup>2</sup>	October 2020,
Fab 9 Burlington, Vermont	88.7	Low	200 (RBA VAP Remote Recognition) <sup>2</sup>	February 2021
Fab 10 East Fishkill, New York	90.3	Low	—	None performed to date

<sup>2</sup> Due to COVID-19, Fab 8 VAP audit was a hybrid audit and Fab 9 VAP audit was fully virtual. RBA currently provides "Remote Recognition" for such audits. For reference, Fab 9's previous 200 point audit score in 2018 received "Platinum Recognition".



# 04



## Governance

### Risk Management and Business Continuity

GF manages risk at the enterprise, business function, and manufacturing site levels in order to meet our commitments to customers, the community, and employees.

Our structured approach of credible risk assessment, disciplined mitigation, comprehensive threat awareness and practiced crisis management enables us to identify critical risks and target mitigation programs at the appropriate level to avoid loss, disruption, or interruption of mission-critical activities and systems. Management and maintenance of risk mitigation and business continuity plans is an on-going task, and our manufacturing sites and critical business functions engage in an annual review and assessment of operational and natural disaster risks. This is followed by an annual executive review of prioritized risks and our related mitigation strategies, projects, and goals.

The following are key elements of GF approach to business continuity:

- Global scale and operational resiliency with manufacturing operations in low risk geographies;
- Executive stewardship and broad organizational engagement;
- Business continuity and recovery planning;
- Crisis communication and command protocols for prompt and appropriate attention to threats;
- World-class Environmental, Health and Safety programs support loss prevention and mitigation;
- Proactive management of supply chain risks.

### Crisis Management

GF is managing through the COVID-19 crisis with an unwavering focus on two guiding principles: first and foremost, the safety and wellbeing of our employees and their families; and second, protecting our ability to deliver on our commitments to our customers. With these priorities in mind, the company has taken extraordinary steps to safeguard both its workforce and its manufacturing operations, applying and expanding on Regional and Global Epidemic and Pandemic Response Plans that have been continuously developed during the last 12 years.

Our fabs have operated successfully throughout the crisis. GF's crisis management teams provide real-time guidance for employees in accordance with public health guidance and GF employees demonstrate their dedication to the company and our customers. GF manufacturing continuity is also fortified by its strategic sourcing program. For example, the company maintains specified levels of "days of supply" of critical inputs to mitigate against potential or unforeseen supply disruptions. We amplified these efforts as the COVID-19 crisis worsened during 2020. GF has reviewed key suppliers' contingency plans and continues to monitor for potential supply chain disruptions.



# 04



## Governance

### Secure Manufacturing

GF SHIELD is GF's comprehensive, company-wide platform to safeguard and protect our customers' intellectual property and products. With GF SHIELD, we have embraced our role as the world's most secure and trusted foundry.

Protection of information, data and assets is the foundation of GF's partnerships with our customers and suppliers. GF SHIELD integrates information security, product security, operational security, and cyber security into a comprehensive program that covers every aspect of the customer experience. From the initial meeting, through development, design, fabrication, delivery, and even disposal of product-related scrap—and every step between—GF SHIELD is in place to ensure a customer's products and sensitive information remain secure. Annually, we conduct comprehensive security training for all employees, covering Information Security, Cyber Security, Operational Security, and Product Security. Each training module is updated annually, and employees are assigned one of the four modules each

quarter. We average a 98% completion rate on each module. We augment this training with corporate wide and management communications regarding specific threats and reminders. Lastly, role-specific training is provided on an annual or as-needed basis for certain employees whose job roles require an enhanced level of security awareness and control.

The GF SHIELD Core Team (made up of the GF SHIELD Regional Task Force leaders) coordinates strategy and tactical deployment of GF SHIELD protective elements across the four disciplines of Information, Cyber, Product and Operational Security. GF SHIELD Regional Task Forces then work within their geographic region to implement and measure compliance to GF security policies at an operational level.

The GF SHIELD platform leverages and embraces GF's experience as a Trusted Foundry and supplier of advanced semiconductor to the U.S. government and the aerospace and defense industry, as well as GF's experience as a certified

international Common Criteria standard (ISO 15408, CC Version 3.1) manufacturer, and extends those stringent security capabilities to all GF locations and customers. The ISO 15408 (Information Technology -- Security Techniques) certification allows GF fabs to produce chips for financial transactions, smart cards, digital IDs as well as other products and applications for the public sector or industries that require an extra level of security and integrity in the production process. In addition, we maintain ISO 27001 (Information Security Management) certifications for Fab 1 in Dresden, Fab 7 in Singapore, and Fab 8 in Malta.





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# Employee Health, Safety and Well-Being

## Occupational Health & Safety Management

Protecting the occupational health, safety, and the general well-being of our employees, on-site contractors, visitors, and communities is our greatest responsibility, one that we embrace proactively and systematically. We strive to continuously reduce occupational injuries and illnesses in all of our operations, with an ultimate goal of zero incidents.

The GF [Journey to Zero](#) emphasizes that all injuries are preventable, and together we can create a culture where the expectation of zero injuries and incidents is the norm. This fundamental principle underlies our Global EHS Policy, which commits us to providing safe and healthy working conditions that prevent injuries and illnesses, and to the elimination of hazards and the reduction of safety risks, utilizing the principles of behavior-based safety and a hierarchy of risk-mitigation controls.

Our Global EHS Policy and Standards are the foundation of health and safety programs at each manufacturing location. The Global EHS Standards provide a consistent caliber of care and set performance requirements that apply globally throughout the company. They cover a wide range of health and safety aspects, including injury and illness prevention, emergency preparedness, electrical safety, chemical safety, and industrial hygiene monitoring program requirements.

Our enterprise-wide health and safety management system is based on our EHS Policy and Standards and covers all activities performed at GF manufacturing sites. It is now certified to the ISO 45001:2018 Health and Safety Management Systems standard, after a successful transition from our OHSAS 18001 health and safety management system certification in April 2021 (certificate available [here](#)).

“Consultation and Participation” is a key tenet of ISO 45001, with the intent to ensure employees are fully engaged in the health and safety management system. While GF has actively addressed this for many years through our Safety Committees, training program and awareness initiatives, we have expanded our efforts as we continually improve our management system. Communication, engagement, and training are key components to encourage safe behaviors. This includes encouraging employees and contractors to raise safety concerns and report near misses and unsafe behaviors. We provide and facilitate a wide range of general and job-specific health and safety training to our employees and contractors as defined by regulatory requirements and our own determinations in accordance with the Global EHS Standards.

At each fab site, GF’s health and safety professionals, management, and employees share responsibility for implementing the Global EHS Standards through local programs and operating procedures. Applying the behavior-based safety approach, our programs recognize and facilitate individual safety awareness



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# Employee Health, Safety and Well-Being

and behaviors. As part of our risk assessment process, health and safety professionals engage with operational personnel to analyze potential process hazards and mitigate them according to the following hierarchy of controls:

- Elimination (such as eliminating the use of a material)
- Substitution (such as replacing a hazardous process or material with a less hazardous one)
- Engineering controls (including ventilation, equipment interlocks, enclosure, segregation, etc.)
- Administrative procedures (developing procedures, implementing training, etc.)
- Personal protective equipment (to manage any residual risks, after all other controls have been implemented).

The EHS Centers of Excellence (COEs) program provides a platform for staff from our sites around the globe to share, identify and implement best practices. In the areas related to occupational health and safety, the COEs have focused on sharing and refining leading metrics for early identification of potential safety risks, monitoring and confirming the effectiveness of workplace engineering and administrative controls that limit potential exposures, and sharing best practices related to emergency response and pre-purchase evaluation of semiconductor manufacturing equipment. The EHS Management Systems COE played a key role in steering our certification to ISO 45001, including preparations for our successful audits in the U.S., Singapore, and Germany.

## Safety Performance in the Workplace

We measure progress on the Journey to Zero with a range of metrics—both leading and lagging indicators. We evaluate all occupational injuries and illness cases to identify their root causes and determine appropriate preventive measures and corrective actions. Case reports for occupational injuries and illnesses, along with evaluations that identify root causes and determine appropriate preventive and corrective actions, are shared across our global sites.



***In November 2020 GF received the America's Safest Companies award from EHS Today.***

*GF demonstrated excellence in a number of categories, including support from leadership and management for EHS efforts; employee involvement in the EHS process; innovative solutions to safety challenges; injury and illness rates lower than the average for its industry; and comprehensive training programs.*



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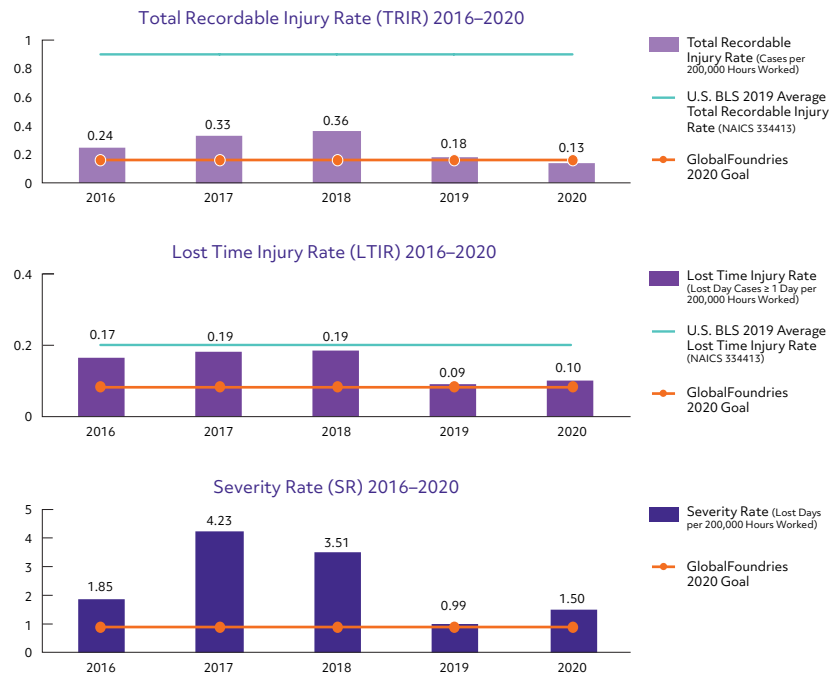
# Employee Health, Safety and Well-Being

At the highest level, we measure our safety performance with the following lagging indicators:

- Total Recordable Injury Rate (TRIR: measuring the number of recordable injuries or illnesses);
- Lost Time Injury Rate (LTIR: measuring the number of injuries that result in employees missing one or more workdays after the day of injury or illness);
- Severity Rate (SR: measuring the average number of days employees were unable to work following an occupational injury or illness that resulted in one or more days away from work).

Figure 2 shows GF's corporate rates from 2016 through 2020 in comparison to our 2020 goals and the 2019 U.S. Bureau of Labor injury rates for the semiconductor industry (2019 is the most recent year for which these governmental statistics are available).

Figure 2: GlobalFoundries Corporate Total Recordable Injury Rate, Lost Time Injury Rate, and Severity Rate (2016-2020).\*



\* The graphs include GF employee injuries only.



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# Employee Health, Safety and Well-Being

Continuing on our Journey to Zero path, and applying the same approach as for 2019, GF established aspirational best-in-class 2020 goals to further reduce the injury rates (LTIR, TRIR) and the Severity Rate (SR) by 10% below the 2019 values. Our global safety incident rates were significantly lower than (better than) the 2019 U.S. Bureau of Labor Statistics (BLS) rates for the Semiconductor Industry, which is the most recent BLS dataset. Over a longer time frame, our TRIR has decreased from 0.36 in 2018 to 0.13 in 2020 and was below (better than) the GF 2020 goal. This was also our lowest TRIR rate since GF was founded in 2009. The comparable 2019 U.S. TRIR for the semiconductor industry was 0.9. We were slightly above 2020 GF goals for LTIR and SR, with an LTIR of 0.1 and an SR of 1.51 in 2020 and will continue to target avoidance of injuries resulting in time away from work. For comparison, the 2019 U.S. Lost Time Injury Rate was 0.2 for the semiconductor industry (there is no BLS benchmark rate available for the Severity Rate).

During 2020 there were no high-consequence work-related injuries<sup>3</sup> or fatalities affecting GF employees or contractor employees performing work at GF fab sites. For both GF employees and contractors, the main types of recordable injuries were slip /trip/ fall cases, struck by /against cases, and laceration cases.

We continue to pursue our Journey to Zero striving for zero occupational injuries and incidents. While GF occupational injury and illness rates remained well below benchmarks through 2020, they did not meet all aspirational GF Journey to Zero goals. For 2021 we continue to challenge ourselves with best-in-class goals and are maintaining the 2020 goal values.

## Managing Chemicals Safely

Semiconductor manufacturing takes place in a highly controlled cleanroom environment. Equipment and chemical/gas distribution systems are completely enclosed, providing an ultra-clean manufacturing space and safe working conditions. Stringent material handling procedures include automated chemical delivery systems and sophisticated manufacturing equipment that incorporates multiple engineering controls to minimize the risk of chemical exposure for employees working in the cleanroom and chemical distribution areas. GF thoroughly reviews all new chemicals before their introduction to our sites and ensures that proper safeguards and material handling procedures are in place. Our chemical management systems at each site provide employees with ready access to Safety Data Sheets (SDS) and identification of appropriate personal protective equipment when necessary.

<sup>3</sup> "High-consequence work-related injury": Per GRI 403 (Occupational Health and Safety 2018), this is a work-related injury that results in a fatality or in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within 6 months.



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# Employee Health, Safety and Well-Being

## COVID-19 Employee Protection Measures

GF prioritizes health and safety in times of “business as usual”, and especially during today’s global COVID-19 crisis. Around the globe, with extensive engagement from our CEO and Senior Leadership Team, our Epidemic Management Team and Site Crisis Management Teams implemented a comprehensive series of measures to protect our employees, contractors, and all visitors to GF facilities.

Beginning in January 2020 we progressively implemented our Epidemic and Pandemic Preparedness Plans as the spread of the SARS-CoV-2 virus resulted in increasing rates of COVID-19 illness across multiple regions and countries. GF initiated a strict split shifts model for operational employees and a work-from-home policy for all non-fab and non-operational employees, which includes colleagues across a wide spectrum of functions. To protect employees whose work is directly related to essential production of semiconductors, and who continued to work on-site at the fabs, GF implemented stringent site controls. These include minimizing visitors and strictly screening anyone entering a GF manufacturing facility, as

well as daily temperature checks and symptom screening protocols. GF also requires everyone working on-site to wear face masks - all in a continuing effort to limit the spread of the virus.

Inside our fab facilities, GF has enacted mandatory social distancing. Among these measures are capping the number of attendees at in-person meetings, reducing the seating capacity and using shift-patterns in cafeterias, mapping out the distancing intervals on the floor in certain areas, and alternating gowning rooms used by employees entering the fab cleanrooms. Some sites have moved meetings of the operational staff inside to the fab’s cleanrooms, which are among the cleanest places on Earth from a contamination perspective.

By taking these measures, GF significantly reduced the number of employees who were on-site at any given time until there was sufficient improvement in regional conditions. Social distancing and other policies are helping to ensure employees who are on-site are as safe as possible so we can also keep their families and our communities safe.

Throughout our response we consulted our employees, seeking their active participation in protecting themselves and others. This was accomplished through a robust set of Frequently Asked Questions, regular communications from our CEO and his leadership team, and targeted questions in our global ONEGF Surveys regarding our COVID-19 response.

GF has implemented a measured Return-to-Workplace process, including a comprehensive “Playbook” for GF employees. We continuously monitor key indicators such as case rates normalized to regional populations, virus variant occurrence, testing volumes and test positivity rates, and vaccination rates, along with regional healthcare capacity. These indicators form the basis of decision-making regarding whether to increase employee populations at our manufacturing sites or reopening smaller regional offices that we closed entirely as the pandemic escalated in early 2020. We continue to take a careful approach to reopening, taking into account the cyclical nature of the pandemic and the ongoing risk of resurgence.



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# Employee Health, Safety and Well-Being

## Promoting Health and Well-Being

We place great value on our employees' overall health and wellness. Each of our manufacturing facilities has an on-site clinic and medical professionals who administer health and wellness programs in collaboration with Human Resources and following applicable data privacy rules. Our health professionals engage globally within the Center of Excellence for Occupational Health and Employee Well-Being to share knowledge and drive continuous improvement. We encourage employees to live healthy, active lives, and provide support through services such as vaccinations, health screenings and surveillance, dietary consulting, on-site fitness facilities, first aid training, and safety tips for travelers. Annually, our facilities across the globe hold a themed "Health Day" for all employees with information campaigns and activities to further promote a healthy lifestyle. In 2020, our mostly virtual health days included informative sessions on how to deal with change, mindfulness, and how to positively impact physical and mental health as we navigate through challenging times. GF

sites also offered onsite seasonal flu vaccination opportunities, all following GF's strict site access and social distancing guidelines.

As of today, well over a year since the beginning of the global COVID-19 pandemic, our health teams, in close cooperation with our HR teams, continue to provide employees with assistance and information on how to stay healthy and well, both physically and mentally. This includes up to date tips to avoid exposure and stop the spread of COVID-19, ergonomic guidance for our employees working from home during the crisis, ideas and best practices for managing stress and enabling social connectivity while working remotely, along with fun ideas on how to keep active and work out at home.

GF has a robust Employee Assistance Program (EAP) available to all employees and their families providing confidential access to counseling on a variety of topics including personal, family, workplace, legal and finance related to mental health and well-being.



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# Technology Solutions for Humanity

Now more than ever before, our future health and prosperity as individuals and society is tied to advances in technology enabled by semiconductor chips. From cities that never sleep to remote rural villages, these tiny devices feed a \$2.3 trillion electronics industry that powers a \$91 trillion-dollar world economy.

The COVID-19 pandemic served as a wake-up call, accelerating the adoption of information technology at an unprecedented rate, causing a massive structural shift, and creating a “new normal” that allowed us to persevere through a global pandemic. Semiconductor chips are everywhere, from smartphones and automobiles to technology in schools and hospitals, and our modern society can no longer survive without them. Changing how we live and work, semiconductor chips are one of humankind’s most vital resources.

GF is focused on creating innovations in the largest, most pervasive segments of the semiconductor industry where technology can have the broadest impact. As power efficiency has become a critical success

factor for our industry, GF is redefining the leading-edge of innovation through solutions that can “flatten the curve” and lower the power consumption of digital technology. Our differentiated process technology platforms (e.g., RF SOI (Silicon on Insulator), FD-SOI, silicon photonics) coupled with application-specific features (e.g., analog/RF, embedded memory, and advanced packaging) and design enablement create feature-rich solutions customized to our customers’ needs and the markets they serve, including communications, (digital) infrastructure, automotive electrification, safety and efficiency, and healthcare.

## Automotive Connectivity, Electrification, Safety and Automation

GF solutions are integral to today’s advanced automotive designs. GF is delivering semiconductor solutions for the future car through its leadership in technologies for new vehicle architectures, including electrification, safety & automation, and connectivity. These range from high-performance RF/analog for ADAS (advanced driver-assistance systems) Radar, silicon photonics for ADAS Lidar and

high-speed in-vehicle data transmission, and next-gen power semiconductors for battery management and drive-control sitting at the heart of EVs (Electric Vehicles) and HEVs (Hybrid Electric Vehicles.)

## Boosting Performance, Safety and Efficiency for Hybrid and Electric Vehicles

Efficiency of electric motors, power converters, and battery chargers are key factors for hybrid and electric vehicle control systems. GF enabled the industry’s first automotive Field Programmable Controller Unit (FPCU) solution. Using GF’s 55nm Low Power Extended (55LPx) platform, the FPCU integrates multiple functions onto a single chip, boosting performance, safety and efficiency for hybrid and electric vehicles. The device ensures the quality of energy conversion controls to increase safety and achieve Automotive Safety Integrity Level (ASIL) D (the highest tier) for ultra-fast safety applications. Moreover, it enables automotive manufacturers to enhance the energy efficiency of DC/DC and AC/DC controls as well as increase battery range, durability, and charging speed for electric motors.





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# Technology Solutions for Humanity

GF is partnering with Bosch to develop a next-generation mmWave automotive radar system-on-chip (SoC) for Advanced Driver Assistance Systems (ADAS) applications, manufactured using GF's 22FDX RF solution, which offers the highest mmWave radar performance and quality, compared to equivalent nodes that use planar CMOS (Complementary Metal Oxide Semiconductor) process technology. ADAS applications help drivers stay safe by keeping a vehicle in the correct lane, warning of collisions, initiating emergency braking, assisting with parking, and more.

The GF AutoPro™ service package, built on 15+ years of automotive production experience, provides automotive customers with a broad set of solutions and manufacturing services that minimize automotive certification efforts and speed time-to-market. AutoPro is built upon three core pillars: quality systems readiness, technology platform readiness and operational readiness.

GF is also investing in future technologies, such as GaN (Gallium Nitride) on Silicon to further improve power delivery and battery efficiency. GaN technology is particularly attractive for manufacturing devices that enable more efficient power supplies and support vehicle electrification. These devices make it possible to further integrate multiple systems, reducing overall vehicle weight to extend an EV's range from a single charge. They also support rapid battery charging, another important step towards broader adoption of electric vehicles.

## Technology Solutions for Resource Conservation and Efficiency Reducing Energy Consumption in the Data Center

Continually escalating demand for computational capabilities makes it increasingly important to bring innovative energy-efficient solutions to market. GF solutions for optical communications and wired infrastructure provide reduced power consumption and higher bandwidth between data center servers and faster, more efficient connections throughout

the telecommunication infrastructure. GF photonics solutions are replacing copper-based equivalents in the datacenter, including co-packaged optics and pluggable modules that enable short and long-range data center interconnects respectively. GF is the only foundry with high-volume 300 mm manufacturing for silicon photonics, increasing the ROI gained from the transition to silicon photonics in the data center.

## Enabling Efficient Resource Use through Artificial Intelligence (AI)

Explosive growth in the AI silicon market is being fueled by ballooning data sets, 4G/5G connectivity and the need for more powerful semiconductor chips to handle associated real-time analytics requirements.

GF's high-performance and ultra-low power AI accelerator solutions based on FinFET and FDX platforms are optimized for training (creating computer models) and inferencing (deploying the models) both in the cloud and at the edge. Built on proven silicon platforms complemented by robust ecosystems, they are designed to help chip designers reduce



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# Technology Solutions for Humanity

development time and solution providers to get to market faster. By using AI-optimized architectures and features, these solutions can help solve the power/memory bottleneck in audio, video and image processing, smart edge devices and even autonomous vehicle applications.

GF Dresden partnered with a number of German companies and R&D organizations (SmartSystems Hub, Sensry GmbH, Telekom, Infineon Dresden, Coderitter and the Fraunhofer Institute (ENAS) as innovation partners on a project to develop failure prevention and predictive maintenance on critical parts (valves) in GF's UPW systems based on an "edge AI" application. The aim was to predict the failure of a control valve within the UPW supply using robust data and thereby detecting and preventing supply interruptions at an early stage. The solution (an industrial IoT device) that was successfully demonstrated uses 22FDX technology from Fab 1. It combines edge-based AI/machine learning capabilities and cloud-based monitoring.

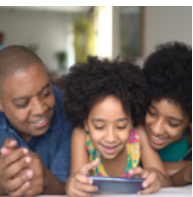
## GF RF Solutions Enable Intelligent Connectivity Staying Connected in Daily Life

Since the start of the COVID-19 pandemic in 2020, daily life has been upended for millions of individuals and families who now find themselves working from home and engaged in online learning. More than ever before, wireless devices are playing a central role in people's lives, and GF technology is helping to make telework and remote learning possible. With more than 85 percent of today's smartphones featuring GF Radio Frequency (RF) technology, nearly every wireless call, text, email, social media post, streaming movie, TV show and live stream broadcast passes through chips manufactured by GF. GF's leading silicon-on-insulator channel switch technologies are the keys that unlock an outstanding 4G and 5G experience, and other wireless applications from laptop computers and smart speakers to wi-fi routers and cell towers.

## Ensuring the Reliability of Critical Communications

GF's SiGe 7WL technology along with our RF test and packaging services enable the critical communication radios used by first responders around the world today. SiGe 7WL's low noise, high voltage, dynamic range and unsurpassed reliability make it an excellent fit to meet the difficult RF specifications required in this essential services market segment. From firefighters entering a burning building, natural disaster communications, and public safety, GF technology is relied upon to operate flawlessly when time matters.

RF semiconductor solutions are key to the next generation of cellular network technology, 5G. 5G represents a fundamental shift in mobile technology. It promises exponentially faster network speeds, greater network capacity and greatly expanded connectivity, revolutionizing how people live and work. This pervasive connectivity relies on RF integrated circuits. They enable a variety of applications: autonomous vehicles for safer transportation; greater use of augmented



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# Technology Solutions for Humanity

and virtual reality (AR/VR) for immersive entertainment, training and more; artificial intelligence (AI) at the network edge for fast, efficient and secure local processing; vast expansion of the Internet of Things (IoT) and machine-to-machine (M2M) communications; and other services and experiences few could have imagined in earlier generations of mobile communications.

As the world's leading foundry for RF solutions, GF is uniquely positioned for this mobile transformation. We are working with industry leaders and visionaries to bring 5G communications and the applications it makes possible to life by delivering a portfolio of made-for-mobile semiconductor solutions, including FDX™ fully-depleted silicon-on-insulator (FD-SOI), RF SOI, silicon germanium (SiGe) and RF CMOS (both established planar and advanced FinFET platforms), all optimized to deliver the balance of performance, power and area benefits that meets the demands of hardware for the next leap forward in intelligent connectivity.

## Semiconductor Solutions Delivering Advancements in Healthcare Combating the Global Pandemic Crisis

Today, semiconductors are a critical enabling technology for electronic components used in many medical devices – including those that are essential to combating the COVID-19 global pandemic crisis. GF technology enabled our customers to deliver M2M (Machine to machine) solutions to address medical and healthcare needs. In the face of the COVID-19 pandemic, our chips enabled critical care equipment such as respiratory machines, ventilators and remote patient assistance.

## Maintaining the Global “Cold Chain” to Deliver Life-Saving Vaccines

Semiconductor chips designed with GF process technology solutions help maintain the critical “Cold Chain” for safely delivering shipments of the Moderna and Pfizer-BioNTech vaccine shipment. Each and every vaccine shipment, containing several trays of doses, is equipped with real-time monitoring GPS trackers and temperature monitoring. Advanced satellite communications enable IOT-based continuous tracking to assure the

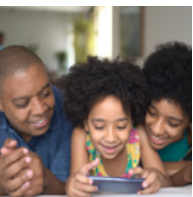
vaccines are protected during shipping and arrive ready to deliver.

## Tools to Ease Self-Monitoring of Glucose Levels

Utilizing GF's differentiated 22FDX RF solution, GF and Movano are collaborating to develop a wearable non-invasive continuous glucose monitoring (CGM) solution to help individuals manage chronic diabetes conditions with an enhanced quality of life. The technology embedded in the wearable CGM device leverages best-in-class performance, low power and small form-factor RF sensors, and the broad feature integration capability of the 22FDX platform.

## Differentiated Solutions Enable Energy Efficiency

GF provides feature-rich solutions based on a wide range of node-based technology platforms, unique and/or best-in-class application feature sets, and thousands of titles in its intellectual property (IP) ecosystem, the combination of which enables GF to offer thousands of different application solutions. The differentiated



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# Technology Solutions for Humanity

solutions approach also enables integration of low power consumption features with other application features, such as 5G-ready RF and mmWave capabilities, embedded non-volatile memory, high-voltage capabilities, silicon photonics, advanced packaging, and others.

Below we highlight a few key technology platforms and features driving energy-efficiency in modern electronic components and systems.

## FD-SOI Solutions – 22FDX™ and 12FDX™ Technologies

GF's FDX™ platforms are designed to span a wide range of applications where power and energy efficiency matters most.

FD-SOI technologies employ an ultra-thin oxide insulator placed on top of the base silicon. On top of this oxide insulator, a very thin silicon layer creates the transistor channel. Due to the thinness of this layer, no channel doping is required, making the transistor “fully depleted.” The FD-SOI structure results in better transistor characteristics compared to traditional bulk CMOS technology, reducing

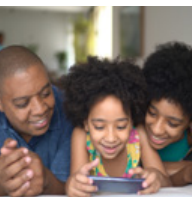
leakage current and parasitic capacitance, thus making the transistor more energy-efficient.

Making intelligent use of the generic FD-SOI features, GF's 22FDX and 12FDX platforms feature significant low power integration and power efficiency advantages for designing differentiated solutions for mobile application processors, wireless networking, IoT and automotive markets. 22FDX is the most advanced planar technology in production and has been designed as a low-capacitance technology that allows a designer to take advantage of ultra-low operating voltages and dynamic power consumption control. A unique FDX feature called adaptive body bias enables the chip to dynamically switch back and forth between high-performance and low-power operation, i.e., to boost performance in the moment it is needed while reducing the static leakage to a minimum when the performance is not needed. 22FDX is the only 5G mmWave solution that enables full integration at the desired performance, time-to-market advantage, and system bill-of-materials (BoM) savings for 5G handsets and automotive radar applications.

## Silicon Photonics

Silicon photonics (SiPh) is a semiconductor solution that leverages light particles, photons, rather than electrical signals to move more data faster, farther, and more efficiently. SiPh has 6500 times further reach and more than ten times higher data rate than copper wiring<sup>4</sup>. Therefore, SiPh is a key enabler for efficient data movement and higher energy-efficiency in applications that transport massive volumes of data, such as in data centers. SiPh optical communications chips are poised to enable new levels of performance in hyperscale data centers, cloud computing and 5G/6G-driven network transformation. GF's differentiated SiPh portfolio with our 90WG and 90WG+ SiPh semiconductor solutions is designed to help customers harness the power of light and deliver more data faster, farther and more efficiently than traditional CMOS technologies.

<sup>4</sup> Silicon photonics-based solutions compared to copper at a given channel loss (30 dB link).



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# Technology Solutions for Humanity

## FinFET

The GF 14/12nm FinFET platform enables energy efficiency for performance-hungry applications (CPUs, GPUs, and others), driving system performance within a given power envelope (i.e., increasing system performance within given power requirements). FinFETs are three-dimensional (3D) Field-Effect Transistors that have the intrinsic capability to operate at a lower voltage, which translates to improved energy efficiency and longer battery life. This is a highly desired technology for performance-hungry mobile computing applications. GF 12LP technology, for example, provides higher device performance and lower total power compared to 28nm technologies.

## Embedded Memory: Embedded Magnetoresistive Random-Access Memory (eMRAM)

Embedded MRAM designates an embedded memory technology that uses magnetic storage elements. Consequently, it does not involve electric charges or current flows, making eMRAM a very power efficient memory solution with fast access time. With

its low power consumption, eMRAM is ideal for IoT, industrial and automotive applications, and its fast access speed and high memory capacity makes it suitable for computing and storage applications.

GF's eMRAM is a highly versatile and robust embedded non-volatile memory, currently deployed on GF's FDX platform which enables a unique combination of full SoC integration (eMRAM, high performance RF, low-power logic, and integrated power management). eMRAM's versatility (both code storage and working memory), fast write speed (more than 100x faster than eFlash), small cell size, and excellent reliability (high endurance and data retention as well as automotive grade capability), enables our customers to deliver a new generation of ultra-low power MCUs, connected IoT and automotive applications.

## Advanced Packaging

Along with energy-efficient silicon technologies, advanced packaging helps reduce power consumption, improve energy efficiency, and shrink the environmental footprint of the final product.

GF advances integrated chipsets where multiple chips of different functions and technology nodes are closely integrated into one package, either horizontally (2.5D) or vertically (3D). This approach allows for optimizing performance, energy efficiency and manufacturing cost both at the system level and for each functional unit. Our 2.5D interposer<sup>5</sup> technology offers excellent flatness and fine lines with high reliability reducing the replacement need. A higher integration density with energy-efficient benefits can be achieved in 3D die stacking offered by our direct wafer-to-wafer bonding technology. To further improve energy efficient power delivery in the system, GF developed discrete and integrated power inductors of small form factor for fast switching as well as deep-trench capacitors of dense capacitance and thin profile which play a vital role for in-proximity voltage regulating of the computing unit.

<sup>5</sup> A silicon interposer is an interface between the package substrate and the chips and provides high-data rate interconnects between the chips and between the chips and the package.



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# Technology Solutions for Humanity

## High-volume Energy-efficient Technology Platforms

Our focus on technologies that enable energy efficiency extends beyond advanced technology nodes and deliver the high performance, power optimization and high reliability required for a variety of IoT and automotive applications. Many GF mainstream technology platforms feature a low power version that is optimized for power and performance, including 28 nm, 40 nm, and 55 nm process technology.

For example, 55LPx, 40LP, 28SLP platforms enable the microcontroller units (MCUs) that are making “Industry 4.0”—the ongoing automation of traditional manufacturing using smart technology—a reality for a wide range of industrial applications, including motor control, process control, robotics, smart grid metering and monitoring. To do so, these MCUs must deliver new levels of endpoint artificial intelligence (AI), processing efficiency, ultra-low power, security, and reliability.

We also offer semiconductor solutions for power-management integrated circuits (PMICs) and power converters. Our growing portfolio is continuously expanding for higher voltages. GF's Analog and Power processes include highly competitive Power FETs that enable maximum power conversion efficiency to aid in extending battery operating time. For example, GF BCDlite® and BCD technologies are developed for efficient power conversion and battery management in applications like electric vehicles and portable devices. The ability to control, monitor and optimize battery performance for long life and safety enables widespread adoption of non-polluting transportation and lifestyle products.



# Human Capital–Diversity & Inclusion and Talent Development

## Diversity & Inclusion

At GlobalFoundries, our people embody and exemplify our company’s vision and mission.

GF knows the best ideas come from a diverse team being inclusive, and that our success rests on empowering employees to bring their whole person — 15,000 employees with unique talents and distinctive qualities — to our company. Building a culture of inclusion drives better business outcomes. As a global company, GF recognizes and values the wide variety of cultural values, traditions, experiences, education and perspectives of our team and communities. GF’s culture of inclusion leads to higher levels of belonging, engagement, and ultimately higher-performing teams. Our values of Create and Deliver speak to “what we do” as a company while Partner and Embrace speak to “how we work together” to enable a culture that encourages each individual to do their best work and be the best version of themselves.

We are committed to leveraging, embracing, and expanding upon the diversity of our team as a competitive advantage in our global markets. We achieve greater things by effectively leveraging the power of our diversity. GF is proud to employ a highly diverse, multicultural workforce around the world representing more than 92 nationalities across 14 countries. We harness the unique backgrounds and experiences of our employees and unite together to develop, design, and manufacture technology solutions that fuel the world.

GF provides a safe and respectful work environment that nurtures personal fulfillment at work. We have a zero-tolerance policy against harassment, including sexual harassment, and discrimination based on age, ancestry, color, marital status, medical condition, mental or physical disability, national origin, race, religion, political and/or third-party affiliation, sex, sexual orientation, gender identity, or veteran status. We also respect the rights of employees to associate freely.

By embracing diversity and inclusion as a company and as individuals, we collectively share ownership in how diversity, equity, and inclusion are embedded in all we do. The core foundational elements of GF’s D&I (Diversity & Inclusion) strategy include:

- Increasing representation of women and underrepresented minorities across the company
- Advancing equal opportunities for success in professional development, rewards, hiring, and advancement
- Building inclusive leadership and creating a culture of inclusion to enable better business outcomes.

Our executive sponsorship committee, The Diversity Inclusion Advocates (DIA@GF), are a cross-section of senior leaders who provide feedback on the effectiveness of our programs. Additionally, leaders are appointed within the business who act as D&I Champions, working to advance diversity, equity, and inclusion as business-led initiatives aligned with GF’s corporate goals.





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# Human Capital–Diversity & Inclusion and Talent Development

GF focuses on increasing representation through measuring all aspects of the employee lifecycle including, retention, recruitment, development, and advancement of diverse talent, including women globally, and under-represented minorities in the U.S. As part of the approach, we have clear talent acquisition strategies including outreach to universities and partners like Fairygodboss, the National Society of Black Engineers, the Society of Hispanic Engineers, and the Society of Women Engineers, among others. Retention is monitored closely to understand the talent losses and reasons why individuals depart from the company. Programs are developed to understand and address specific areas of concern.

After hire, our focus turns to developing diverse talent to prepare individuals for future roles within the company. GF provides differentiated leadership development programs regionally which includes on-the-job training, sponsorship, and other professional development to further increase skill development, visibility, and mentorship. A

group of outstanding GF leaders participated in the McKinsey Black Leadership Academy which specifically acknowledges the unique skills of Black leaders and the challenges they face. GF women enjoy growing their careers here with focused benefits and developmental opportunities. In 2020, over 200 GF women participated in executive education with Smith College. Similarly, GF entered into a partnership with the Jackie Robinson Foundation (JRF). This partnership focuses on advancing higher education opportunities for underrepresented minorities, by providing multi-year scholarship awards to highly motivated college students with an interest in STEM.

GF is speaking out on societal issues that affect racial justice and equity in the US. We launched a Social Justice & Equity campaign, donating over \$200k to nonprofits which fight systemic racism and help advance the cause of racial justice, equality, and an inclusive society. In addition, our CEO and the senior leadership team meet with employees across the globe

to address and discuss the impact of racism in the world and to promote dialogue within our team regarding the external and internal impacts of these issues. We also facilitate listening circles and roundtables to inform our strategy going forward. We are passionate about our future and the company we are becoming, including taking action to embrace a more socially conscious culture.

Increasing inclusive leadership and creating a culture of inclusion is a key objective of our diversity and inclusion strategy. GF's cornerstone executive education program, LEADING@GF, includes custom Inclusive Leader training on unconscious bias, cultural competencies, inclusion, allyship, social tolerance and equity. This required training ensures all leaders know how to foster an equitable and inclusive culture and lead with humility. It reinforces that inclusion at GF means everyone's contributions are welcome, all perspectives are heard and valued, and every person has a sense of belonging.



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# Human Capital–Diversity & Inclusion and Talent Development

Our annual engagement survey process takes the pulse of employee sentiment three times per year. Each survey has repeated questions that focus on engagement, employee satisfaction, belonging, and action taking. Additionally, other emerging themes are covered to ensure employee feedback is heard and resolved. We measure employee sentiment on belonging and inclusion through the pulse surveys multiple times a year. These pulse surveys provide quantitative and qualitative data on the sense of belonging and culture of inclusion within GF. In 2020, more than 80% GF employees participated in the surveys, with considerable improvement in year over year inclusion, authenticity, belonging, and equal opportunity scores. Results are shared with all employees at company all-hands CEO meetings and managers are required to build out action plans to address specific areas of improvements.

Employee Resource Groups (ERGs) are another important element for creating a culture of inclusion and to help support the needs of under-represented populations. ERG's are voluntary, employee-led groups that foster a diverse, inclusive workplace aligned with GF's organizational mission, values, goals, business practices and objectives. At GF, the benefits of ERGs include the development of future leaders, increased employee engagement, and expanded marketplace reach:

- [Black Resource Affinity Group \(BRAG\)](#) whose mission is to foster an environment that embraces diverse experiences of black employees, provides a safe place to express individualism while continuing to build an inclusive culture within GF that promotes recruitment, retention, and professional advancement of black employees.
- [GlobalFamilies](#) provides a community for employees and their families and shares helpful resources to promote work-life balance. It focuses on growing the GF community, connecting families through outreach, providing helpful resources such as expecting parents bootcamp, and hosting special events for GF families to come together.
- [United States Veteran's Resource Group \(VRG\)](#) builds our veteran talent pool, fosters a professional network, and supports veterans throughout the community. Their motto is SERVE: Support, Empower and Recognize Veteran Expertise.
- [GlobalWomen \(GW\)](#), GF's largest employee resource group is an alliance of 1500+ women and men working in partnership to drive initiatives that support the professional development of women at GF. Each of the company's locations has a local chapter, offering events such as networking and mentoring, executive and guest panel discussions, professional development opportunities, external conference participation, and STEM community education programs for women.



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# Human Capital–Diversity & Inclusion and Talent Development

- **Early Career and Tenure Resource Group** cultivates a community that welcomes employees within the first years of their career by focusing on camaraderie, career growth, and community.
- **Hispanic/Latinx Resource Group, Unidos**, empowers and encourages Hispanic/Latinx employees through collaboration and sharing across GF, serves as a resource for professional development and networking, fosters a community of support, respect and advancement and builds Hispanic/Latinx representation at GF.
- **LGBTQ+ Resource Group Pride@GF**, is dedicated to providing an inclusive environment for members of the LGBTQ+ community and their allies, empowering employees to bring their full selves to work, and informing and guiding GF to

create a culture of inclusion. It offers a safe space where members can voice concerns and take actions to foster a more supportive environment for LGBTQ+ employees. Pride@GF aims to educate, raise awareness, and share information about issues that affect members of the LGBTQ+ community at GF, while providing opportunity for mentoring, networking, and cultural appreciation.

- **AAPI Resource Group, ASIA (Asian Society for Inclusion and Awareness)** together with their allies, is dedicated to creating an inclusive and socially just environment for Asian American and Pacific Islanders by supporting and promoting interests of the community through networking, mentoring, awareness, and action to affect meaningful change in our community.

GF has designed solutions to address the needs of the whole person to better support our diverse workforce and offer a more inclusive culture that allows employees to better integrate their life into work at GF and improve wellbeing. In June 2020, we introduced a significant enhancement for paid parental leave, making GF an even better place for employees to build and grow their families and careers. We have increased our paid maternity leave to a minimum of 20 weeks across all locations, ensuring highly competitive benefits providing an important life opportunity for families across the globe at GF. In April 2021, we announced GF Flex which encompasses flexible working solutions by offering remote work options, part-time, flexible hours, and options for holiday use. GF Flex is the next step in driving a more inclusive culture. Our goal is to identify and implement flexible solutions to better support employee work-life integration and wellbeing.



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# Human Capital–Diversity & Inclusion and Talent Development

## Workforce Composition

GF is committed to expanding upon the diversity of our team, which leads to greater success in our global markets. The composition of our global workforce by region, gender, employment type (regular / temporary) and nature of contract (full time / part time contracts) is presented in [Table 2](#), while [Table 3](#) provides an overview of the composition of our global workforce by employee category, gender, and age. [Table 4](#) shows our US workforce composition by ethnicity.

Table 2: GlobalFoundries Workforce Composition by Region, Gender, Employment Type and Contract (as of December 31, 2020)

Region	All Employees		All Employees	Regular	Temporary**	Full Time	Part Time
U.S.*	44%	Male	78.7%	99.6%	0.4%	99.3%	0.7%
		Female	20.8%	99.0%	1.0%	98.1%	1.9%
		All	99.5%	99.0%	0.6%	98.6%	1.4%
Asia Pac	34%	Male	65.8%	98.5%	1.5%	100.0%	0.0%
		Female	34.2%	98.6%	1.4%	100.0%	0.0%
		All	100.0%	98.5%	1.5%	100.0%	0.0%
EMEA*	22%	Male	82.6%	95.2%	4.8%	75.0%	25.0%
		Female	17.3%	93.9%	6.1%	66.3%	33.7%
		All	99.9%	94.9%	5.0%	73.4%	26.6%
All GF*	100%	Male	75.2%	98.2%	1.8%	93.5%	6.5%
		Female	24.6%	94.9%	2.0%	94.0%	6.0%
		All	99.8%	97.9%	1.9%	93.4%	6.6%

\*0.5 percent of U.S. employees and 0.1 percent of EMEA employees (equals 0.2 percent of total) have not self-identified their gender

\*\* Temporary employee category includes contingent workers (equals 0.1 percent of total) as well as other employees, such as apprentices, students, and interns (equals 1.6 percent of total).



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# Human Capital–Diversity & Inclusion and Talent Development

Table 3: GlobalFoundries Workforce Composition by Gender (as of December 31, 2020) \*\*\*

Employee Category	Male (Totals)	Female (Totals)
Entry Level*	69.8%	30.2%
Engineering Roles	78.1%	21.9%
Non-Technical Roles	74.9%	25.1%
All Managers**	80.0%	20.0%
Directors and above	82.2%	17.8%
Vice Presidents and above	85.7%	14.3%
Senior Vice Presidents and above	92.9%	7.1%
Board of Directors***	91.0%	9.0%

\*\*\* Numbers in Table 3 includes contingent workers; does not include other employees, such as apprentices, students, and interns.

\* Entry level are exempt (non-hourly) professional.

\*\* All Manager includes Manager career ladder job level 9 and below.

\*\*\* Board of Directors composition as of June 30, 2021

Table 4: GlobalFoundries United States Workforce Composition by Ethnicity (as of December 31, 2020) \*\*\*\*

Ethnicity	Totals
White	72.0%
Asian	18.5%
Black / African American	3.3%
Hispanic / Latinx	3.2%
Native American or Alaska Native	0.3%
Native Hawaiian or Pacific Islander	0.1%
Two or More Races	1.2%
Not Self-Identified	1.4%

\*\*\*\* Numbers in Table 4 includes contingent workers; does not include other employees, such as apprentices, students, and interns.



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# Human Capital–Diversity & Inclusion and Talent Development

## Talent Development Strategy

People are at the heart of everything we do. We strive to build internal talent pipelines by providing our people with the right tools and support to proactively grow their careers within GF. We focus our efforts on talent enrichment platforms designed to create the next generation of innovators, promote a culture of curiosity, and cultivate skills for powerful tomorrows. Our progressive, people-related development opportunities elevate, accelerate, and transform our employees, their skills, and their futures. Our talent philosophy is evident with enterprise-wide offerings designed not just to enhance skills at work but to focus on the whole person inside and outside of the workplace.

Our talent strategy is powered by numerous engagement and professional developmental opportunities featuring topics on leadership development, team engagement and collaboration, communication and cross-cultural intelligence, and technical skill building and refinement. Our talent management portfolio consists of talent reviews, high-potential development, and progressive succession

planning. Our offerings are focused on unlocking employee potential, creating leaders of the future, and innovating solutions that are changing the world.

## Leadership, Employee, and Technical Development Programs

GF's talent development programs are offered in every location around the world and create an optimal infrastructure to enable internal skill building and career mobility sustaining an internal talent pipeline. We focus on leadership development, professional skill refinement, and technical innovation. We have a multi-tiered strategy for leadership, starting with new manager development programs and progressing to executive leadership development programs, driving identification and development of our top talent through enhanced end-to-end talent processes and tools. Our professional skills development offerings provide employees a way to build professional skills as they grow technical expertise. Finally, we have a history steeped in technical excellence and innovation. Some of our featured programs and learning resources include:

- Leading@GF is the cornerstone of leadership development at GF and is a series of workshops with dynamic offerings for our executive staff. This series provides the foundation of expectations of GF leaders with a special focus on storytelling, inclusive, and transformational leadership. Completion rates for the first series were above 80% and the second series launched in 2020 will reach similar participation through 2021.
- GF offers custom curated Diversity & Inclusion content to enhance belonging, inclusion, connectivity, and cross-cultural awareness while providing mandatory global manager education on unconscious bias.
- GF partners with several universities and external affiliates on talent management strategies which includes continuing education for employees, leadership training, executive assessments and coaching, and specific programming that focuses on women globally and underrepresented minorities in the US.



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# Human Capital–Diversity & Inclusion and Talent Development

- Engagement and Collaboration offerings provide development options designed to improve emotional intelligence, communicating with clarity and impact, and proliferation of respect in the workplace.
- Our deep technical expertise and technical skill building / refinement offerings include extensive on-the-job training and custom learning plans by career ladder and job level. These programs provide deep subject matter expertise for excellence in role and attainment of deep levels of technical mastery. The top technical training programs offered to technicians globally include Maintenance Safety and Control of Hazardous Energy, Factory Systems Training, which provide specific software system training, and Module and Semiconductor Manufacturing Process Overviews. Key curriculum for engineers includes Statistical Process Control (SPC), Semiconductor Process and Specialized Technology Node Training, and the Process Control Review Board and Material Review Board overviews.
- Worldwide Standards of Business Conduct and other global compliance modules are assigned to employees and require annual refreshers. This training explains the Company's commitment to high ethical standards and compliance with laws, regulations, and Company policies and also reinforces the Company's Vision, Mission, and Values. Content in these courses help employees know what to do in challenging situations, provides guidance in how to think through situations which they have not faced before, and provides detailed information about who to contact with questions or raise concerns (anonymously, if preferred).
- The GF Global Mentoring Program utilizes an online matching software to connect employees with ideal counterparts and supports the cultivation of meaningful mentoring relationships. We have built a mentorship campaign in our succession and talent planning which ensures mentees are connected to mentors and sponsors.
- GF employees have access to thousands of online, self-paced courses in skill development topics ranging from communication to computer programming. New courses are added weekly, and employees are regularly challenged to expand their knowledge through a variety of recommended content and custom curated playlists. Over half of our workforce actively engages in LinkedIn Learning with over 14k hours of viewed content and more than 290k videos viewed annually.

All these courses are powered by our global learning management system that allows us to track global training data including professional development courses and technical on the job training courses.

In 2020, the total number of global instructor-led and web-based training hours was 412,353 hours, with the average number of training hours per employee more than 26 hours. In addition, employees receive significant amounts of OJT (on-the-job-training). It is estimated that 2020 OJT total training hours exceeded a total of 1 million hours, increasing



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# Human Capital–Diversity & Inclusion and Talent Development

training hours to nearly 90 hours per employee. Beyond virtual and classroom training, we also support our employees' development through mentoring, coaching, professional certifications, and partnerships with outside organizations.

## Performance Management at GF

Our performance management process is designed to help GF employees and managers align and engage in goal setting and professional development planning to ultimately deliver results for our company, and for our employees' future. With COMPASS, our performance management process, managers and employees partner to establish goals and development plans in January of every calendar year or within 90 days of hire. Managers also use their one-on-one engagements with employees to monitor and review contributions and engage in feedback throughout the year.

Feedback is required to be exchanged in the middle of the year and at the end of the year through formal written documentation in the COMPASS goal form housed in our human capital management system. The key components include goal setting, development

planning, feedback discussions, mid-year feedback exchange, and an annual assessment. Performance management also includes clarifying role expectations and deliverables; providing constructive feedback on performance; highlighting employee strengths, identifying areas for improvement, and creating development plans to enable personal and professional growth. It is through these important discussions that the manager/employee relationship grows, skills are developed, and refined, and high performance and results delivery is unlocked.

## Compensation & Benefits

Our compensation philosophy is fundamental to the goals of our talent strategy in attracting, retaining and motivating a talented and diverse workforce that results in differentiated business performance. We provide robust compensation and benefit programs, which consist of base salary and variable pay programs, such as annual bonus (based on corporate performance), performance-based manufacturing bonuses and sales incentives. For eligible employees, we also offer stock-based compensation consisting of non-qualified stock options.

We are committed to fair and equitable pay practices that meet or exceed the comparable market. Our goal is to gain a balance between global standardization and local customization, while offering our employees protection and flexibility with their benefit offerings. We recognize that benefit environments vary by country, and therefore the type of benefit plans we offer reflect the prevailing local market practices and employee needs. Benefits under this strategy include healthcare, parental leave, risk benefits such as personal insurance, retirement savings, time off, educational assistance, and other location-specific benefits.

To support our employees during the global COVID-19 pandemic crisis, GF has also introduced new and enhanced benefits for all employees, to help team members remain healthy, care for family members, and face other challenges arising from the pandemic. These include emergency paid leave for employees who are unable to work on-site or remotely, and quarantine paid leave for employees who are directed to quarantine by their physician or health authority.





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# Community Support and Engagement

GF is as committed as ever to our mission, vision, and values. This includes our commitment to community involvement and support for the well-established programs and teams dedicated to enriching the lives of people around the globe. Last year, the global community faced significant natural disasters, an unprecedented worldwide pandemic, and extreme examples of social injustice. As ONEGF, we not only deliver technology for humanity, but also pride ourselves in giving to and supporting the communities we call home.

It is easy to live our mission, vision, and values when it is convenient to do so, but it is during the most difficult times that GF really rises to the challenge. Our response to the needs of those in our communities validates who we are as a company, especially in times of crisis. Embracing our community is integral to our company identity, connecting our teams to global initiatives that are bigger than GF.

The following is a look back on our collective 2020 company-wide giving, a tribute to the original employee-led efforts that

have evolved into what we know today as GlobalGives. Since 2016, our GlobalGives program has become a multifaceted world-wide effort, encompassing both employee and company-driven initiatives around STEM (Science, Technology, Engineering and Mathematics), philanthropy, and crisis support.

## GlobalGives STEM Initiative

From its inception, GlobalGives has held a special place for K–12 STEM education, providing funding across all GF locations to help foster a love of Science, Technology, Engineering and Mathematics in underserved communities across the globe. Through our GlobalGives STEM initiative, we provide experiential learning opportunities for students and teachers, facilitate curriculum development and mentoring support for early college high school programs, drive programming to encourage students and especially girls to pursue education and career paths in STEM, and offer internships, job shadowing, and employment opportunities in advanced manufacturing, among others.

Some of the specific programs we have created or supported include:

- STEM@GF was created to connect GlobalFoundries with the education community, while inspiring today's students to learn more about the field of semiconductors. Schools, teachers, parents, and students can explore hands-on activities and videos, and can learn about different career pathways into GF.
- GLOBALGirls, an annual summer STEM camp for middle school girls launched to inspire our next generation of female science and technology leaders and address the gender gap in manufacturing (Malta, NY; East Fishkill, NY; Burlington, VT);
- FIRST® (For Inspiration and Recognition of Science and Technology) Robotics programs, designed to motivate young people to pursue education and career opportunities in STEM, while building self-confidence, knowledge, and life skills (Malta, NY; East Fishkill, NY; Burlington, VT);



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## Community Support and Engagement

- “Jugend Forscht” (Youth in Science) including the junior segment “Schüler Experimentieren” (“Students Experiment”) Saxony, a regional competition that encourages young people with scientific and creative talents to put their ideas into practice (Dresden, Germany);
- STEM Science Fest events and programs serving local schools, orphanages, and institutions for underprivileged children (Bangalore, India).

### GlobalGives Philanthropy

When it comes to philanthropy, employees in every major GF site make a difference by generously volunteering their time and donating goods and money to support a wide range of causes, helping to improve the quality of life in the communities we call home.

Throughout the years, GlobalGives has facilitated numerous localized campaigns, including food drives, school supplies and holiday gifts for children, and annual Earth Day volunteerism. Through our GlobalGives

donation platform, GF has helped communities around the world respond to and rebuild from floods, hurricanes, wildfires, and other disasters. In January 2020, GF launched its employee matching program, leveraging the GlobalGives online platform to match every qualifying employee donation one-to-one, supported by \$500K USD in funding.

As the novel coronavirus COVID-19 grew into a global pandemic crisis, impacting the lives of people in every corner of the world, GF was swift to leverage GlobalGives to respond to the needs of the people and families in our communities. In March 2020, GF allocated over \$100K in seed funding in support of numerous campaigns, including supporting the UN (United Nations) Foundation COVID-19 Solidarity Response Fund for the World Health Organization, the Center for Disaster Philanthropy COVID-19 Response Fund, and the Singapore National Council of Social Service Community Chest Fund. Eleven of our GF sites launched COVID-19 relief campaigns, supporting 27 different charities ranging from food banks to humanitarian services to

front line workers. In parallel, GF initiated an employee-directed mask donation campaign, fulfilling over 1,700 individual requests for N95, surgical and cleanroom masks for frontline workers and at-risk friends and family members. The campaign accounted for over 85,000 of the total 130,000 masks that GF donated globally in the first half of 2020. In May 2021, GF initiated a giving campaign for COVID-19 struck India to donate \$50K in relief funds across a number of charities to help provide oxygen supplies, screening, treatment, and other urgent necessities. This campaign includes a special 2:1 match for our employee donations.

In early April 2020, GF took a bold step, investing an additional \$1M in funding to our employee matching program, enabling a 2:1 employee match. Every Euro, Rupee or Dollar an employee donated resulted in triple that amount going to the charity of their choice. Employees helped victims of wildfires in Australia and typhoon relief efforts in the Philippines. GF is also speaking out on societal issues that affect racial justice and equity in



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## Community Support and Engagement

the US. We launched a Social Justice & Equity campaign, donating over \$200k to nonprofits which fight to break down systemic racism and help advance the cause of racial justice, equality, and an inclusive society.

GF also took measures to support our employees and communities when impacted by natural disasters like the Northern California wildfires of August 2020 and the Texas power outages in February 2021. But by far, the majority of financial support went to helping local communities across the globe in their battle against the pandemic.

In December 2020, when GF expanded upon “#GivingTuesday” to launch GF Giving Week, employees supported toy drives, local food banks and families in need, showing their spirit of giving during the holidays.

As employees rose to the challenges of 2020, GlobalGives membership increased 34% year over year, reflecting growth across all regions. In total, employees made over 7,800 individual donations in 2020, totaling over \$500k in charitable giving – four times the amount donated in 2019. Collectively, between corporate funding and our employee generosity, GF proudly donated more than \$2.2M USD to support our communities around the world in 2020.





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# Sustainable Manufacturing and Operations

Semiconductor manufacturing is among the most complex and sophisticated manufacturing processes in the world, taking place in a strictly controlled and safe production environment (the cleanroom). The manufacturing flow includes a sequence of up to a thousand or more processing steps during which electronic circuits are gradually created on a substrate made of silicon (semiconductor material). These electrical circuits are made one layer at a time by the combination of depositing a layer on the surface of the wafer and using a patterning process to then remove designated parts of the layer to leave behind a specific shape. To illustrate the required precision, the resulting features (including the individual layers) on a semiconductor device (microchip) are measured in nanometers.

Our Journey to Zero is the leading theme of GF's Global EHS Policy. Semiconductor manufacturing is generally resource (water, energy, material) intensive. Therefore, the Journey to Zero represents GF's commitment to sustainable and environmentally efficient manufacturing operations, that is to minimize

environmental and climate-related impacts from our operations through pollution prevention and resource conservation. We extend EHS related provisions, including the requirement that suppliers conform with the RBA Code, through our standard supplier instruments ([see 10 Responsible Sourcing](#)). GF engages with its major suppliers in our annual RBA supplier review to better understand and drive environmental sustainability throughout our supply chain, including resource (water and energy) use and emissions (e.g., waste, greenhouse gases).

GF's Global EHS Policy and Standards are the foundation of our integrated ISO 14001 certified EHS Management System. The GF Global EHS Standards establish a continual improvement process and performance requirements that apply globally throughout the company. They cover a wide range of environmental topics, including Air Quality, Climate Protection and Ozone Depleting Substances, Chemical Management, Water Quality, Stormwater, Resource Conservation and Pollution Prevention, and Waste

Management. In addition, all of our fabs have either been certified under the Sony Green Partner program or maintain equivalent controls to ensure product compliance. Our certificates are available [here](#).



# Sustainable Manufacturing and Operations

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## GlobalFoundries Environmental, Health and Safety (EHS) Policy

GlobalFoundries and its subsidiaries are committed to achieving excellence in our Environmental, Health and Safety (EHS) management systems. To do so, our leadership and employees embrace and adhere to the following principles:

### Journey to Zero

We have embarked on a journey to achieve zero occupational injuries or illnesses, and minimize environmental and climate related impacts from our operations through pollution prevention and resource conservation. Through our Journey to Zero we are committed to providing safe and healthy work conditions which prevent work-related injuries and illnesses. We are committed to the elimination of hazards and reduction of environmental and safety risks, utilizing the principles of behavior-based safety and a hierarchy of risk-mitigation controls.

### Continual Improvement

We are committed to continual improvement of our EHS management systems to enhance environmental and safety performance. We collaborate with our clients, suppliers, partners, academic and governmental bodies, and industry consortia to drive EHS improvement in semiconductor manufacturing technology.

### Beyond Compliance

We implement consistent and rigorous EHS policies, standards and management systems supported by performance metrics, external reporting and compliance assurance. These are designed to protect the environment; to protect the safety, health and well-being of our employees, contractors and communities; and to ensure that we meet or exceed regulatory compliance obligations, customer requirements and other voluntary practices to which we subscribe.

### Customer Focus

As a provider of manufacturing services, we strive to enable our clients to verify their expectations for supply chain EHS performance are met. We will measure and report relevant EHS data to our clients, allowing them to assess and reduce product life-cycle impacts.

### Consultation and Participation

We strive to build and maintain an open and productive dialogue with our stakeholders. We ensure these principles by providing appropriate EHS training, communication and engagement with our employees and contractors, enabling them to own their roles and responsibilities and participate in our EHS management systems.



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# Sustainable Manufacturing and Operations

## Environmental Efficiency: GF 2018–2021 Resource Conservation Goals

Our 2018–2021 goal setting approach identified potential resource conservation opportunities across our manufacturing sites. We focus on projects that will drive savings and improve our normalized performance rates, using our manufacturing index to compare across technologies. For the 2018–2021 period the resulting resource conservation goals are:

### Electricity:

- Achieve savings in annual electricity use of 86 gigawatt hours (GWh);
- 15 percent reduction of normalized electricity consumption<sup>6</sup>;

### Water:

- Achieve savings in annual water use of 340,000 cubic meters (m<sup>3</sup>);
- 10 percent reduction of normalized water consumption<sup>6</sup>;

### Greenhouse Gas Emissions:

- Achieve savings in annual GHG emissions of 11,900 metric tons carbon equivalent (MTCE);
- 18 percent reduction of normalized greenhouse gas emissions<sup>6</sup>;

### Chemical Use and Waste Recycling:

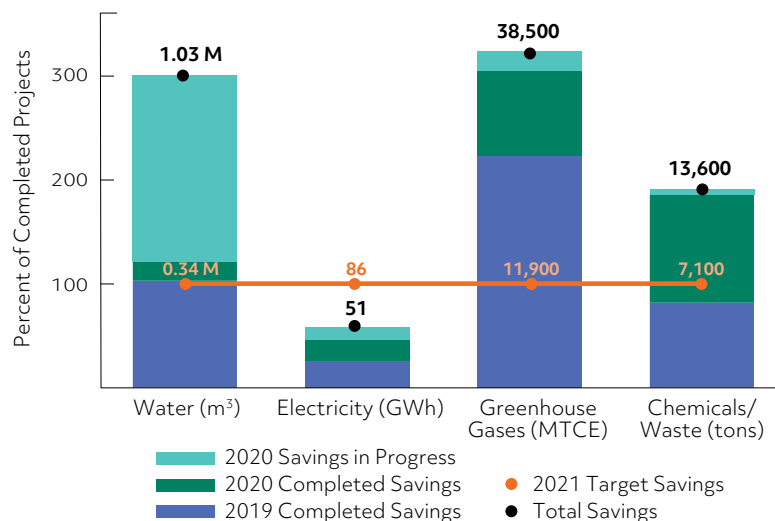
- Achieve savings in annual chemical use and waste generation of a combined 7,100 tons;
- Recycle and reuse at least 60 percent of hazardous waste generated across the company for our 2020 operations;
- Recycle and reuse at least 75 percent of non-hazardous waste generated across the company for our 2020 operations.

<sup>6</sup> Following the divestiture of our Fab 3E at the end of 2019, the 2018 baseline normalized rate has been recalculated by removing the Fab 3E contribution to correctly reflect the change in operational boundary.

## Performance against GF 2018–2021 Resource Conservation Goals

We measure our 2020 performance against our 2018–2021 goals in terms of the annualized savings delivered by our resource conservation projects, through the end of calendar year 2020. As shown in [Figure 3](#), by the end of 2020, we had already exceeded our three-year targets for water and greenhouse gases (GHG), as well as chemical use and waste generation.

Figure 3. 2020 Performance against our 2018–2021 Resource Conservation Goals





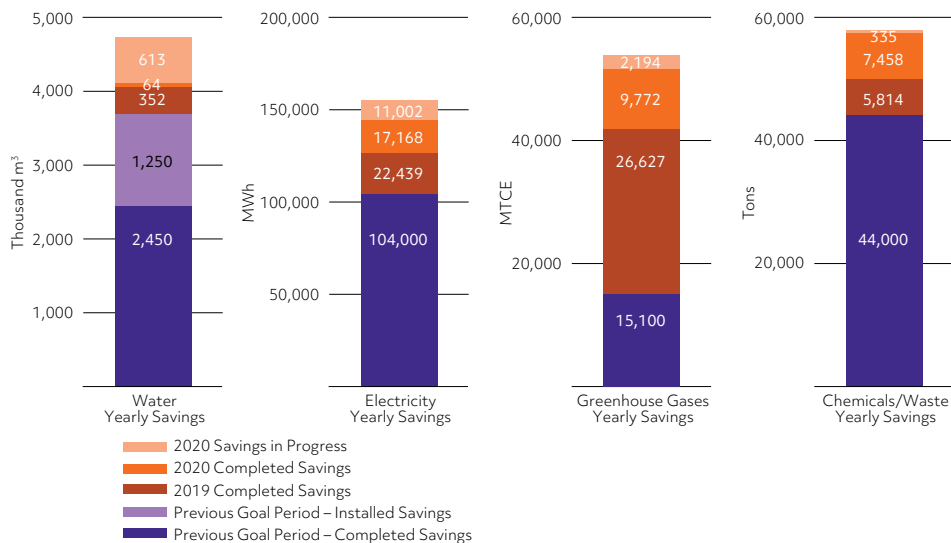
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# Sustainable Manufacturing and Operations

As shown in [Figure 4](#), our current goal period's savings build on the savings achieved through conservation projects completed in our previous goal period (2H2015/1H2016 - 2018) of 4,400K m<sup>3</sup> water, 104 GWh electricity, 15,100 MTCE of GHG emissions and 44,00 tons chemicals / waste. Our cumulative savings to date have enabled GF to significantly increase environmental efficiency in manufacturing over the past five years.

Figure 4. Annual Savings through Completed Resource Conservation Projects  
(Previous Goal Period through Current Goal Period)







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# Sustainable Manufacturing and Operations

## 2020 Goal Progress:

### Flagship Resource Conservation Projects

**Electricity:** At YE 2020, GF had executed projects that annually save more than 39.6 GWh. Additional projects are underway or planned which are projected to save another 11 GWh annually. Key projects include:

- At our GF Singapore site, a major chilled water plant optimization project began in 2020. Once completed, it will lead to annual savings of more than 8.6 GWh, which will also save a corresponding annual amount of Scope 2 GHG emissions (approximately 960 MTCE);
- At our Fab 9 in Burlington, VT, in 2020 process engineers completed transfers of certain wafer etch processes to a more energy-efficient tool platform. These process transfers are estimated to save 4.8 GWh of electricity use annually. Fab 9 also improved a previously implemented free cooling solution, helping to save more than 0.5 GWh electrical energy required per year for cooling incoming air to meet clean room requirements;

- At our Fab 10 in East Fishkill, NY, engineers completed a number of projects in 2020, such as replacing an older chiller with a more energy efficient chiller and enabling annual savings of more than 600 MWh, and performing a site wide upgrade to LED lighting, a change that will annually save more than 100 MWh.

- More than 4 GWh of electricity consumed in 2020 was from on-site generation of renewable electricity (photovoltaics) at our Singapore site, avoiding more than 470 MTCE of Scope 2 GHG emissions.

**Water:** At YE 2020, GF had executed projects that annually save more than 415K m<sup>3</sup> of water, exceeding our original savings goal by 20 percent, one year ahead of the original target date. At the same time, additional projects are underway in various stages of implementation that are expected to save another 613K m<sup>3</sup> annually. Key projects include:

- Our Dresden, Germany site completed a project in 2020 to reduce the use of hot UPW (ultrapure water) in a dedicated

set of process tools, leading to an annual saving of 50K m<sup>3</sup> of hot UPW, with corollary energy savings as well;

- The Fab 8 site implemented a project in 2019 to increase the site's water reuse rate by reclaiming the cleaner water (the permeate) generated by a reverse osmosis system within the site's wastewater treatment plant. This permeate is now routed to the water reclaim system that feeds into facilities systems such as cooling towers or point-of-use abatement devices, conserving more than 175K m<sup>3</sup> of water annually.
- A major water conservation project was started at GF Singapore in 2020 to further increase its water reclaim (recycle and reuse) capabilities. The project introduces additional collection and treatment steps to reclaim a portion of makeup air unit condensate and low-contamination production wastewater and reintroduce it to the UPW system rather than using NEWater. This project is estimated to lead to an annual saving of more than 520K m<sup>3</sup> once fully implemented.





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# Sustainable Manufacturing and Operations

**GHG Emissions:** At YE 2020, GF had executed projects that annually save more than 36,000 MTCE -exceeding our goal by almost three times the amount of our targeted savings. Additional projects are underway or planned that are estimated to save another 2,000 MTCE annually. Key projects include:

- At our Fab 8 site in Malta, NY, an annual emissions saving of more than 3,000 MTCE was achieved by completing a project in 2020 that replaced fluorinated heat transfer fluids with a high global warming potential with alternative heat transfer fluids with a lower global warming potential.
- To continue to address GHG emissions from PFC (perfluorocompound) use in manufacturing processes, GF Singapore has implemented a project in 2020 that reduces the flow of C2F6 in a CVD chamber cleaning recipe, achieving an annual saving of more than 1,000 MTCE.
- Also at our Singapore site, facilities engineers started a project in 2020 to install heat pumps to replace previously used diesel-powered boilers, in order to achieve annual savings of more than 13 GWh diesel. This amount would

translate into a saving of nearly 1,000 MTCE GHG emissions that previously resulted from diesel combustion.

**Chemicals / Waste:** At YE 2020, GF had executed projects that annually save more than 13,700 tons, exceeding our goal by almost twice the amount of our targeted savings. Key projects include:

- Engineers at our Singapore site have optimized chemical use for in-house recycling of test wafers. As part of the test wafer recycling process, the wafers were cleaned using a mixture of hydrochloric acid and hydrogen peroxide. The recipe was improved to only use hydrochloric acid, saving nearly 4,300 tons of process chemicals and reducing the cleaning time.
- During 2020, GF Fab 8 has completed several process optimization projects reducing the amount of chemicals required to achieve the desired process results by nearly 2,000 tons. One project reduced the amount of photoresists and antireflective coating used in a photolithography process by more than 270 tons annually.

## Beyond 2021 – GF Journey to Zero

Our resource conservation achievements to date have enabled GF to significantly increase environmental efficiency in manufacturing over the past five years. GF is extrapolating our Journey to Zero theme to a longer-term time-frame, developing a new generation of resource conservation goals.

We recognize the critical global environmental challenges, specifically climate change, impacting the environment, human society, and the worldwide economy. Climate-related risks to GF business, including supply or operational disruptions due to severe weather events, are evaluated as part of our risk management process. We track the development of proposed climate legislation around the world and have implemented proactive measures that go well beyond regulatory requirements.

As an important step to align with climate science and minimize longer term exposure to climate change, we announced our [Journey to Zero Carbon Initiative](#), building on GHG emission reduction strategies to conserve energy, implement additional emission controls and develop renewable and lower-carbon energy sources.



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# Sustainable Manufacturing and Operations

We are setting a goal to reduce absolute Scope 1 and Scope 2 GHG emissions by 25% from 2020 to 2030 by enhancing manufacturing controls, further improving energy efficiency, and sourcing renewable and lower-carbon energy - even as we significantly expand our global manufacturing capacity.

Our Journey to Zero Carbon Initiative supports the aims of the Paris Agreement, which calls for significant absolute reductions by 2030 on a path to global "Net Zero" GHG emissions by 2050. At the same time, and all within the scope of this goal, GF is investing in significant capacity expansions at our existing facilities in the U.S. and Germany as well as our newly announced 300mm fab in Singapore.

GF monitors our energy consumption and greenhouse gas (GHG) emissions to understand our climate impacts. We manage our climate-related business risks by conserving energy, and water, by implementing emission controls, and engaging with stakeholders, such as participating in initiatives to drive industry-wide reductions in GHG emissions. GF Fabs 1, 9, and 10 already participated in the first industry-wide climate goal established by the World Semiconductor Council (WSC) to reduce PFC emissions 10 percent by 2010 compared to 1995. In 2011, the WSC had far surpassed its goal,

having achieved a 32 percent reduction. GF also contributed to the development and implementation of the WSC's second voluntary PFC agreement for 2020, that was rooted in the implementation of best practices for all new semiconductor fabs. Fab 8 in Malta, NY, which started operations in 2012, was designed according to the WSC best practices.

GF is also working to better understand the long-term business risks and opportunities associated with climate change. These are complex, ranging from regulatory initiatives affecting energy sourcing and semiconductor process materials, severe weather events such as droughts, flooding, and extreme temperatures, chronic climate-related physical changes as well as supply chain transformation. GF discloses our approach to governance, climate-related risks and opportunities, and their impact on business strategies, metrics, and targets on an annual basis through CDP (Carbon Disclosure Project). Notably, reporting to CDP also serves to fulfill the climate disclosure aims of the Task Force on Climate-related Financial Disclosures (TCFD).

We plan to conclude the goal setting process for water, energy, chemical use and waste by YE 2021 as we conclude our performance assessment

relative to our current targets. Our new generation of goals will be intended to aggressively drive environmental efficiency over a longer-term goal horizon.

## Environmental Efficiency: Key Environmental Performance Indicators

We measure our environmental efficiency using key environmental performance indicators (KEPIs), reflecting resource consumption, emissions, waste generation, and regulatory compliance. Our KEPI data collection is a quarterly process governed by a GF internal specification within the EHS Management System that provides KEPI definitions, data collection instructions as well as data roll up calculation templates. We normalize data from operations using an industry standard Manufacturing Index (MI) derived from the number of wafers manufactured, the number of masking steps in our fabrication processes (reflecting process complexity), and the total area of wafers produced. The normalized rate of a KEPI thus reflects our environmental efficiency. Quarterly KEPI data are reported to the Stewardship Committee.



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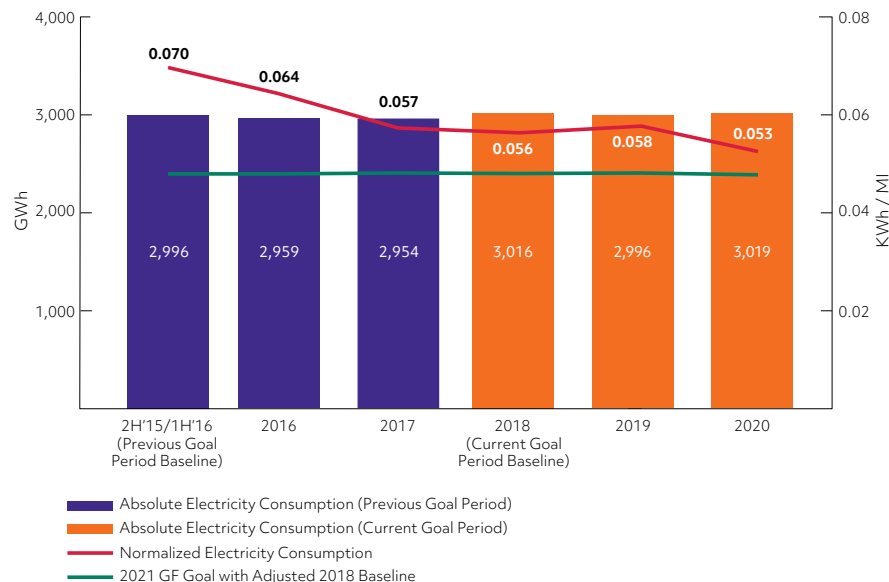
# Sustainable Manufacturing and Operations

## Energy

Semiconductor manufacturing requires electricity to create and maintain the critical cleanroom conditions in our manufacturing fabs, as well as for powering manufacturing tools, pumps, and other equipment needed for the complex manufacturing process.

Figure 5 shows absolute and normalized electricity consumption at our manufacturing facilities from the baseline of our previous three-year goal period to 2020. Absolute consumption of electricity remained nearly unchanged from 2018 to 2020. At the same time, normalized electricity usage decreased more than six percent in 2020 compared to our baseline year of 2018 and nearly 25 percent compared to our previous baseline. This reflects GF's work over many years towards achieving a significantly higher productivity by keeping the absolute electricity demand nearly flat while increasing the manufacturing output by 35 percent (as expressed in MI).

Figure 5. Absolute and Normalized Electricity Use – through 2020





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# Sustainable Manufacturing and Operations

## Water

Semiconductor manufacturing requires water as an important resource. Water, specifically, Ultrapure water (UPW) is necessary for semiconductor manufacturing and must be treated to very high purity levels, removing particles, ions, and dissolved gases before it can be used. UPW is specifically used in wafer cleaning processes which become ever more water intensive as the features on the manufactured wafer become ever smaller. GF's water conservation strategy is to reduce water use in manufacturing processes while increasing water recycling and reuse.

GF sources (withdraws) water from third parties, but also has extensive water reclaim programs in place at our manufacturing facilities. "Reclaimed water" includes both recycled and reused water. Water recycling is the process that feeds previously used UPW back into the UPW purification plant, whereas water reuse refers to the reuse in operations that do not require the same purity requirements as UPW, such as cooling towers and scrubbers, which can accommodate lower-quality water sources.

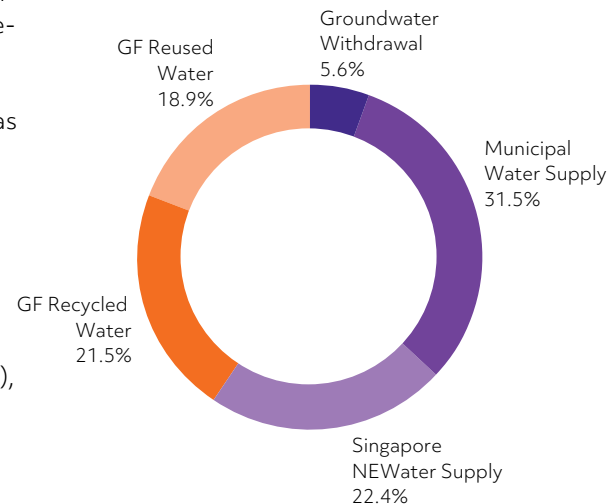
## Water Sources

[Figure 6](#) shows 2020 total water use by source, comprising water that was supplied (with-drawn) from third parties or from groundwater sources, as well as water that is used and subsequently recycled or reused internally at GF.

In 2020, 40 percent of GF's total water use was covered by recycled and reused water from water reclaim programs. Developing options to further increase our recycle and reuse rates is a key part of GF's water conservation strategy.

GF sources water mainly from third party water utility providers (more than 53 percent), with more than 22 percent sourced from Singapore's NEWater program. NEWater is an alternative water source, comprised of reclaimed and treated wastewater supplied by the Singapore Public Utilities Board (PUB). Using NEWater supports Singapore's water conservation strategy to reserve high-quality potable water for domestic consumption. A smaller share (5.6 percent of company-wide use in 2020) of freshwater is sourced from groundwater at GF Fab 10.

Figure 6. GF 2020 Total Water Use by Water Source





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# Sustainable Manufacturing and Operations

## Water Stress and Water Risk

GF manufacturing sites are not located in, and do not withdraw water from, areas that are assessed as high water stress areas. GF's determination of whether our manufacturing sites are located in, or withdraw water from, high water stress areas, is based on the World Resources Institute's (WRI) "Aqueduct Water Risk Atlas." Reflecting its assessment of baseline water stress<sup>7</sup>, no GF manufacturing sites are located in areas assessed with a baseline water stress of "High" or "Extremely High", defined respectively as a range from 40% to 80% and a ratio above 80%. Evaluating future water stress scenarios for our GF manufacturing sites locations using the Water Risk Atlas shows a potential for greater than "High" water stress for our Singapore site. GF is well aware of this scenario, addressing it by sourcing the Singapore PUB-supplied NEWater and by continuing to drive water conservation and recycling projects.



<sup>7</sup> Baseline water stress is expressed as the ratio of total water withdrawals to available renewable surface and groundwater supplies. Higher values indicate more competition among users.



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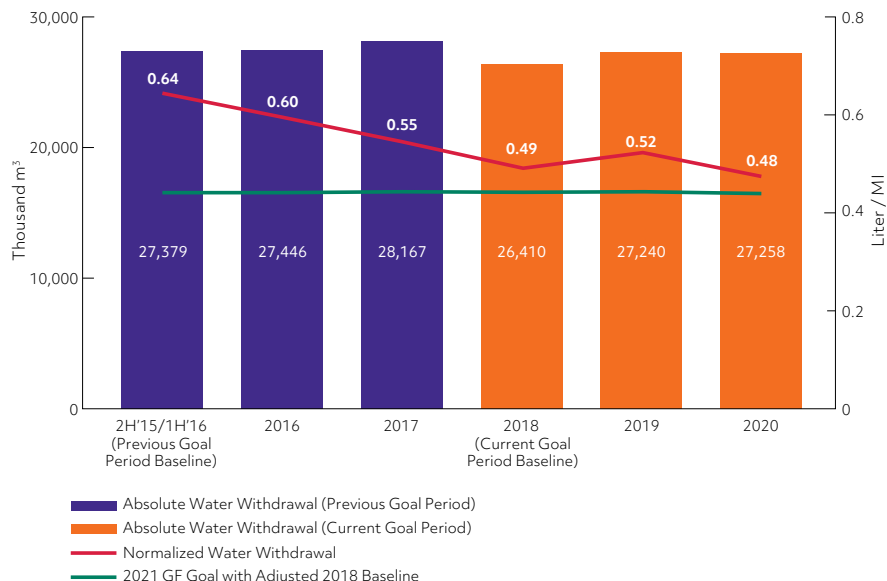


# Sustainable Manufacturing and Operations

## Water Withdrawal

Figure 7 shows absolute and normalized water withdrawal<sup>8</sup> for our manufacturing facilities from the baseline of our previous three-year goal period through 2020. Compared to our previous baseline, GF water use efficiency in 2020 has significantly increased. While absolute water withdrawal decreased slightly, our water intensity (as represented by our normalized rate of water withdrawal) decreased by more than 26 percent in 2020 as compared to our previous goal period's baseline and by more than three percent as compared to the 2018 rate. With a production growth of 35 percent (as expressed in MI) since our previous baseline, this represents a significant positive trend in water efficiency.

Figure 7. GF Water Withdrawal Absolute and Normalized – through 2020



<sup>8</sup> Water Withdrawal as defined by GRI 303-3 (GRI 303: Water and Effluents 2018).



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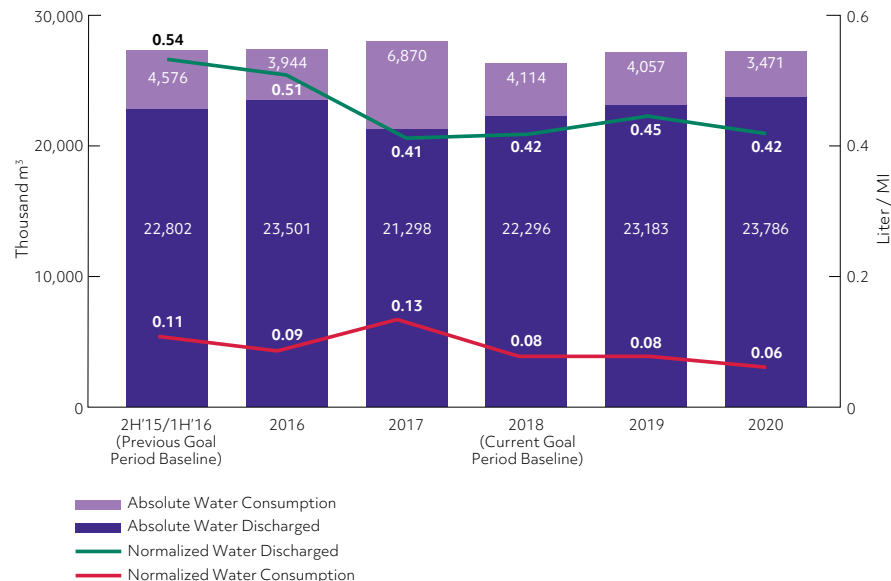
# Sustainable Manufacturing and Operations

## Water Discharge and Water Consumption

At each of our manufacturing sites, we operate permitted wastewater treatment systems to manage effluent from production areas. These facilities treat the wastewater to meet regulatory requirements prior to discharge. GF Singapore, Fab 1 and Fab 8 discharge wastewater to municipal treatment facilities following on-site pretreatment. Fabs 9 and 10 discharge directly to surface waters following a rigorous combination of industrial and biological treatment processes. In total, in 2020, we discharged 23.8 million cubic meters of treated wastewater from all manufacturing operations combined, of which 33.5% (8 million cubic meters) were discharged directly to surface water.

[Figure 8](#) shows the volume of GF wastewater discharge as well as the volume of GF “water consumption”<sup>9</sup> through 2020. “Water consumption” is calculated as the delta between water withdrawal and wastewater discharge. More than 85 percent of water withdrawn is discharged back as water to public treatment facilities or to surface water, resulting in total water consumption of less than 13 percent of total water withdrawal in 2020. The main contributor to GF water consumption is evaporation through cooling towers and exhaust.

Figure 8. Absolute and Normalized GF Water Discharge and Water Consumption<sup>9</sup> – through 2020



<sup>9</sup> Water Consumption as defined by GRI 303-3 (GRI 303: Water and Effluents 2018).



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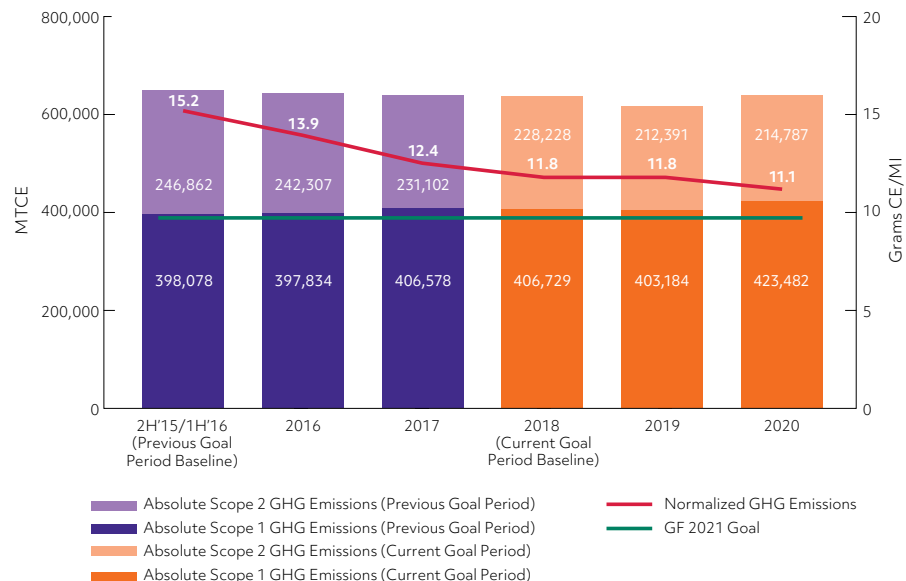
# Sustainable Manufacturing and Operations

## Greenhouse Gas Emissions

Semiconductor manufacturing emits both direct (Scope 1) and indirect (Scope 2) GHG emissions. Scope 1 GHG emissions are those released from our facilities, including PFCs, N<sub>2</sub>O and fluorinated heat transfer fluids (FHTF), as well as emissions from on-site combustion of fossil fuels such as natural gas, diesel, and fuel oils. Scope 2 GHG emissions are those that result from externally generated electricity used at GF sites.

Figure 9 shows absolute and normalized direct (Scope 1) and indirect (Scope 2) GHG emissions from the baseline of our previous goal period through 2020<sup>10</sup>. Combined Scope 1 and Scope 2 GHG emissions were relatively flat in 2020 as compared to the 2018 baseline, with a four percent increase in Scope 1 GHG emissions and a reduction of Scope 2 GHG emissions of nearly six percent. Increasing manufacturing output drove an increase in absolute Scope 1 GHG emissions from 2019 to 2020. Normalized Scope 1 and Scope 2 combined GHG emissions decreased six percent in 2020 compared to 2018 and more than 26 percent when compared to our

Figure 9. Absolute and Normalized Direct (Scope 1) and Indirect (Scope 2) GHG Emissions – through 2020



<sup>10</sup> GlobalFoundries quantifies GHG emissions using the following methods: "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"; For semiconductor process related PFC emissions specifically GlobalFoundries uses Tier 2 methods of IPCC Guideline for GHG Inventories V3\_Chapt6 Electronics Industries (Adjustments were made in 2021 through our previous baseline to selected factors applied in GF PFC emissions calculations, reflecting more conservative assumptions on gas use apportioned to installed abatement) and U.S. EPA reporting methods under Subpart I of the GHG Mandatory Reporting Rule (MRR); GWPs used are from IPCC Fourth Assessment Report (AR4 - 100 year). GlobalFoundries is using the market-based method to quantify Scope 2 GHG emissions from the "GHG Protocol Scope 2 Guidance". The market-based method reflects emissions from the electricity that a company purchases, which in some cases may be different from the electricity that is generated locally and distributed via the local grid.





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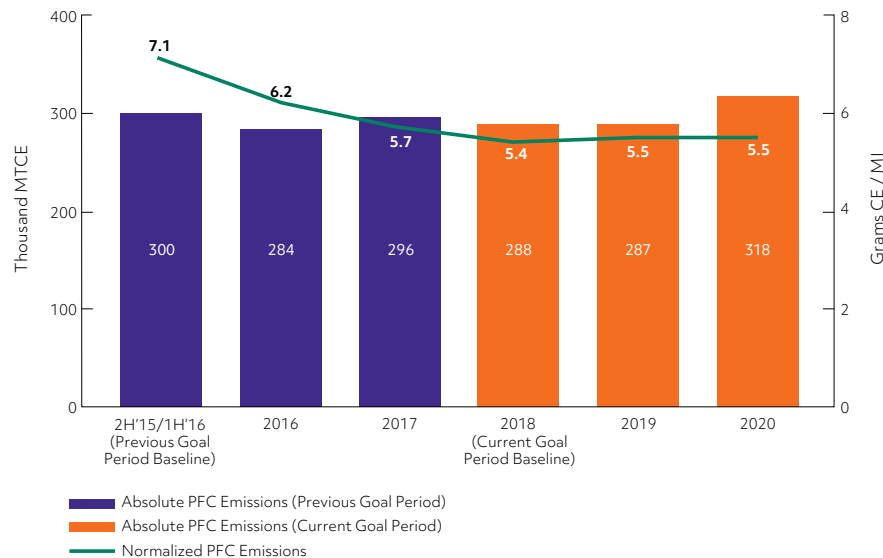


## Sustainable Manufacturing and Operations

previous goal period baseline). Considering GF's production growth of 35 percent (as expressed in MI) since our previous baseline, this is a significant increase in GHG efficiency.

Figure 10 shows absolute and normalized total PFC (perfluorinated compound) emissions from the baseline of our previous three-year goal period through 2020. PFC gases are used in semiconductor wafer etching and Chemical Vapor Deposition (CVD) chamber cleaning. Absolute PFC emissions increased by ten percent in 2020 compared to 2018, while normalized 2020 PFC emissions were three percent higher than 2018 levels, but more than 21 percent lower than our previous goal period baseline. PFC emissions will continue to be a key focus in our GHG reduction strategy, specifically in our legacy 200mm fabs in Singapore and Burlington, VT that are inherently less PFC emission efficient than our newer 300mm fabs. Our 300mm fabs in Dresden (Fab 1) and New York (Fabs 8 and 10) were designed to produce extremely low emissions of PFCs by using low-emission gases in CVD chamber cleaning, coupled with near-universal use of point-of-use abatement equipment for PFC-using processes.

Figure 10. Absolute and Normalized PFC Emissions – through 2020





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# Sustainable Manufacturing and Operations

## Waste

Semiconductor manufacturing generates a number of different waste streams, ranging from spent process fluids, spent solvents, wastewater treatment plants' sludge cake to waste from construction projects, and general office waste. Waste streams fall into both hazardous and non-hazardous waste categories.

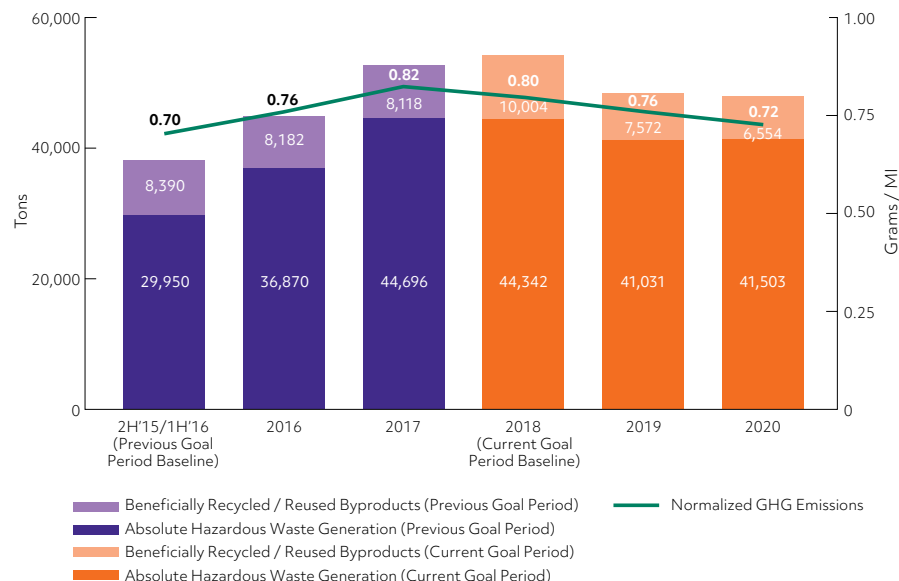
GF Global EHS Standards have precise requirements for waste management, including proper tracking, employee training, handling, as well as requirements for waste disposal, and auditing of waste disposal facilities.

## Hazardous Waste

[Figure 11](#) shows absolute and normalized hazardous waste<sup>11</sup> generation, as well as absolute generation of byproducts beneficially recycled and reused, from the baseline of our previous goal period through 2020.

Absolute hazardous waste generation peaked in 2017 and since then has continuously decreased. Similarly, after peaking in 2017, the normalized rate of hazardous waste generation decreased by more than nine percent since 2018 and was relatively

Figure 11. Absolute Hazardous Waste Generation and Byproducts Beneficially Recycled and Reused<sup>12</sup> Generation and Normalized Hazardous Waste Generation – through 2020



<sup>11</sup> The classification of waste as "hazardous" is determined by the respective regulations that apply to our manufacturing sites.

<sup>12</sup> We also include the category "byproducts beneficially recycled and reused", which is applicable only to our U.S. sites because reclaimed material is excluded from the U.S. EPA definition of hazardous waste.



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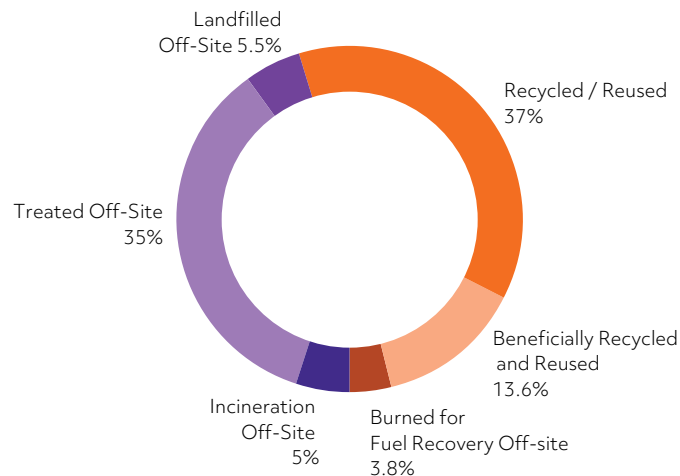
## Sustainable Manufacturing and Operations

flat when compared to our previous baseline. The reduction reflects significant progress in resource conservation, which was achieved while GF increased manufacturing output by 35 percent (as expressed in MI). We continue to actively investigate ways to reduce water and chemical use to ultimately reduce generation of hazardous waste.

[Figure 12](#) shows a breakdown of the disposal methods for hazardous waste (including byproducts beneficially recycled and reused) generated in 2020. We achieved an overall recycling and reuse rate (that combines the categories “recycled /reused” with “byproducts beneficially recycled and reused”) of almost 51 percent, short of our 2020 stretch goal to recycle and reuse 60 percent of hazardous waste (including beneficial recycled and reused byproducts). Examples include the reuse of spent sulfuric acid as a raw material in the manufacture of fertilizers or production of aluminum sulphate, or the reuse of spent solvents in other industries after external purification through distillation.

GF continues to challenge itself with a 60 percent hazardous waste recycling and reuse rate goal for 2021 operations. This supports additional landfill reduction initiatives within our Journey to Zero, to continue reduction of the 5.5 percent of total hazardous waste (including byproducts beneficially recycled and reused) landfilled in 2020.

Figure 12. 2020 Disposal Methods for Hazardous Waste and Beneficially Recycled and Reused Byproducts





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# Sustainable Manufacturing and Operations

## Non-Hazardous Waste Generation

[Figure 13](#) shows absolute and normalized non-hazardous waste generation from the baseline of our previous goal period through 2020. Absolute non-hazardous waste generation increased by nine percent from 2018 to 2020, with a peak in 2019 due to construction projects at our Fab 10 site in East Fishkill, NY which commenced in late 2018 and continued into 2020. Normalized non-hazardous waste generation similarly was slightly higher in 2020 (~ 2 percent) than in 2018 while more than 25 percent lower than at our previous goal period's baseline.

[Figure 14](#) shows the breakdown of the disposal methods for non-hazardous waste generated in 2020. 65.1 percent of non-hazardous waste generated by GF in 2020 was recycled or reused, which is almost ten percent below our 2020 goal, but an eleven percent increase from 2019. To maintain our 2020 achievements, we have now set a 2021 goal to recycle and reuse at least 65 percent of non-hazardous waste.

Figure 13. Absolute and Normalized Non-Hazardous Waste Generation – through 2020

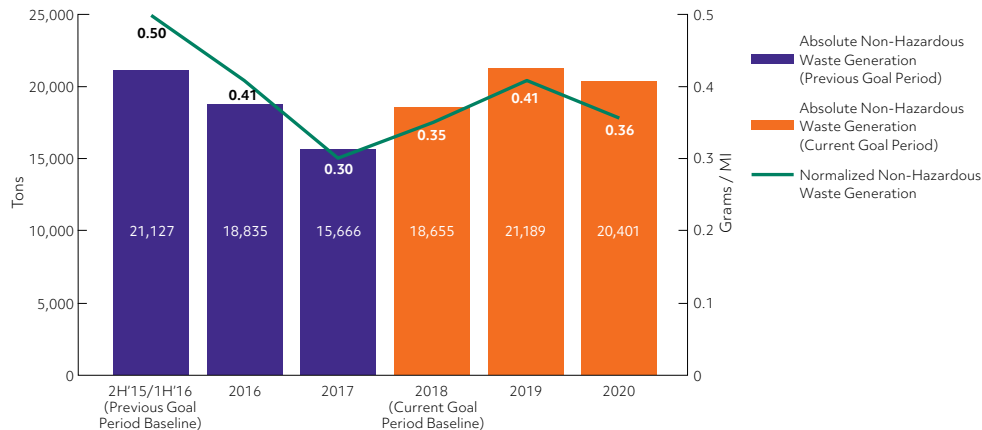
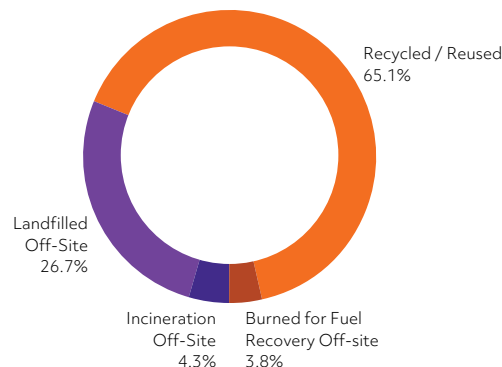


Figure 14. 2020 Disposal Methods for Non-Hazardous Waste





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# Sustainable Manufacturing and Operations

## Air Emissions

All our manufacturing facilities operate within air quality conditions permitted by local regulatory agencies. The primary air emissions from our facilities include corrosives (acids and bases) and volatile organic compounds (VOCs).

We employ wet scrubbers to neutralize corrosive emissions and treat the scrubber water in on-site wastewater treatment systems prior to discharge. For VOC emissions reduction, most sites use thermal oxidation or carbon bed adsorbers. Fab 1 in Dresden, Fab 7 in Singapore, Fab 8 in Malta, NY, and Fab 10 in East Fishkill, NY, have control technology in place that utilizes rotary concentrators followed by thermal oxidation. This technology uses highly adsorbent zeolite materials to capture VOCs, which are subsequently desorbed, producing a low-volume exhaust stream with a higher concentration of VOCs. This more concentrated exhaust stream is then treated with greater efficiency through a combustion process that destroys as much as 98 percent of the VOCs.

## Materials Management and Product Compliance

GF has chemical review and approval systems in place to ensure that only approved materials are used in wafer fabrication and development of foundry modules. Our material qualification process assesses materials relative to our specification for Banned, Restricted, and Declarable Materials Management, which includes both regulatory and customer-driven requirements.

We extend these requirements to our manufacturing partners that provide semiconductor foundry, assembly, and test services. Applicable regulatory requirements include the EU Directive on restricted use of certain hazardous substances in electrical and electronic equipment (RoHS Directive), its sister directives in other jurisdictions, such as China RoHS, and other legislation that regulates substances contained in products (also called “articles”).

This includes the EU Regulation on Registration, Evaluation, and Authorization of Chemicals (REACH) provisions on the presence of designated Substances of Very High Concern (SVHCs).

Our specifications also require packing material suppliers to meet applicable substance restrictions. GF has programs in place to obtain analytical evidence of product compliance (such as RoHS and halogen-free requirements). We make these reports and other product compliance documentation available to our customers on our GlobalFoundryView data portal.

## EHS Compliance

We are committed to a “Beyond Compliance” approach, seeking to exceed the requirements of applicable regulations. We implement consistent and rigorous EHS standards, management systems, metrics, external reporting, and compliance assurance programs. Our manufacturing sites perform internal reviews as part of their EHS Management Systems and are routinely inspected by regulatory authorities. For 2020, zero notices of violation (NOVs) were received and therefore no financial penalties as resulting from government agency inspections and regular compliance reporting across our global locations.



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# Responsible Sourcing

## Responsible Supply Chain

As a member of the Responsible Business Alliance (RBA), GlobalFoundries is committed to responsible sourcing practices. We progressively apply the RBA Code of Conduct to our major suppliers and monitor its application to the best of our ability using RBA practices and tools. GF encourages and supports our suppliers to do the same in our continuous pursuit of excellence in corporate responsibility and extension of responsible practices throughout the supply chain.

Our manufacturing supply chain consists primarily of suppliers of highly specialized semiconductor manufacturing equipment and materials. We also work with suppliers of specialized business services ranging from fab design and construction to IT (Information Technology) consulting. The majority of our manufacturing suppliers operate in the United States, Japan, Singapore, Germany and other EU countries, and Taiwan. There is also a small number of suppliers from the People's Republic of China. Due to the nature of the semiconductor business (highly specialized materials, tools, and services with relatively

long qualification times), GF has developed long-term working relationships with most of its suppliers, and specifically with its most relevant suppliers.

Our requirement that suppliers conform with the RBA Code is included in our standard contract templates, Purchase Order Terms and Conditions, Global Supplier and Subcontractor Management Policy, and Material Qualification Procedure. While the requirement to conform to the RBA Code is extended to all suppliers, we have implemented a supplier RBA Code conformity assessment and verification process that is directed at GF major suppliers. The composition of the major supplier list is reviewed annually and is based on documented criteria that are related to supplier spend, supplier facility location, and nature of supplier business.

The GF major supplier list includes manufacturing tool suppliers, silicon wafer and specialty chemical suppliers, outsourced manufacturing - mostly outsourced test and assembly (OSAT) suppliers, labor recruitment

agencies, and on-site service suppliers, such as janitorial, security and canteen services, and in 2020 comprised approximately 85 suppliers.

Annually, we ask our designated major suppliers to provide a signed certification acknowledging their understanding of the RBA Code and our requirement to be in conformity. The certification highlights specific GF provisions on anti-corruption. The annual engagement includes a supplier self-assessment and a request for environmental information (such as climate and water-related metrics and targets). Both utilize RBA questionnaires and tools (such as RBA-Online, RBA's supply chain risk assessment platform) or equivalent methods. GF applies a risk-based approach for selected major suppliers to provide evidence of RBA Code conformity, through VAP (Validated Assessment Program) audit reports or targeted document reviews performed by GF staff. Where corrective actions are identified, either in VAP audits or from GF review, we work closely with our suppliers to implement them in order to improve their business practices. Where applicable, the annual results of RBA Code



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# Responsible Sourcing

conformity assessment and verification process are included in our Global Supplier Ratings process, which scores supplier performance with regard to Quality, Cost, Operations, Service, Technology and Business Continuity / Compliance. To ensure that our supplier requirements are well understood within GF's Global Supply Management department, lead buyers for our identified major suppliers receive training regarding the RBA Code, focused specifically on its escalation into the supply chain and our major supplier RBA Code assessment and verification process.

As shown in [Table 5](#), within the 2020 program cycle, more than 150 self-assessment responses were obtained from major suppliers (some suppliers provide products and services to GF from multiple locations). The majority (nearly 90 percent) of the 2020 self-assessment responses indicated a low risk for non-conformance to the RBA code. GF staff reviewed all

TABLE 5: GF Supplier RBA Code Conformity Assessment and Verification Program Overview by Supplier Category

		Outsourced Manufacturing	Manufacturing Tools	Materials (Wafers, Materials, Masks)	On-Site Services	Recruitment Agencies	All Major Suppliers
Self-Assessments	RBA 2019 Site SAQs	21	27	59	1	0	108
	RBA 2020 Site SAQ	17	29	85	1	0	132
	2019 RBA SAQ Equivalent Information	0	0	0	14	5	19
	2020 RBA SAQ Equivalent Information	0	0	0	19	5	24
Audits and Targeted Document Reviews	RBA VAP Audits (2019)	12	0	2	1	0	15
	RBA VAP Audits (2020)	3	1	5	0	0	9
	GF RBA Targeted Document Review 2019	0	0	0	11	2	13
	GF RBA Targeted Document Review 2020	0	0	0	15	5	20



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# Responsible Sourcing

self-assessment information and followed up with targeted document reviews where self-assessments indicated a higher potential risk for non-conformity to the RBA Code. GF staff conducted targeted document review for fifteen on-site service suppliers and for five labor recruitment agencies during 2020. Nine suppliers (all were on-site service suppliers) were requested to complete corrective actions. As of Q1 2021, eight suppliers have closed their corrective actions. Of the nine major supplier sites that conducted a VAP Audit in 2020, six of these sites had corrective actions identified for closure within the RBA VAP process.<sup>13</sup> As of Q1 2021 closure of corrective actions is complete for three, and in progress for the other three of these sites. During 2020, due to the COVID-10 pandemic, fewer VAP Audits were scheduled than in previous years. Therefore, confirmation of closure through a VAP Closure Audit has also occurred at a slower pace than in previous years. In total, by Q1 2021, 10 major supplier sites / major suppliers have completed corrective actions identified in the 2020 review, while six major supplier sites were at various stages of working towards closure.

As shown in [Table 6](#), of the RBA Code non-conformities identified, 4% were classified as priority non-conformities (all of which were closed by end of Q1 2021), 66% were classified as major, and 30% as minor. These findings pertained to the primary sections of the RBA Code as also shown in [Table 6](#).

Table 6: Supply Chain RBA Non-Conformities by RBA Code Section

RBA Finding Severity Level	Percentage of Findings	Percentage of Findings by RBA Code Section <sup>14</sup>
Priority Non-conformity	4%	33% Health and Safety 66% Labor
Major Non-conformity	66%	56% Labor 28% Management Systems 12% Health and Safety 2% Environment 2% Ethics
Minor Non-conformity	30%	39% Health and Safety 26% Labor 22% Ethics 9% Management Systems 4% Environment

<sup>13</sup> GF considers VAP audits with scores of less than 180 points (below RBA “Gold” Level) as needing corrective actions, confirmed through a VAP Closure Audit.

<sup>14</sup> GF’s supplier targeted document review for on-site service suppliers has a strong focus on RBA Labor requirements, which influences the share of RBA Code Labor non-conformities in Table 6.





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# Responsible Sourcing

The most frequently identified findings were for the following subtopics of the primary RBA Code section:

- **Labor – Working Hours and Consecutive Days Worked** (24% of findings): These included actual working hour exceedances as well as missing policies and procedures to effectively manage RBA working hour requirements.
- **Labor – Freely Chosen Employment** (17% of findings): These included occurrence of fees and penalties, missing policies prohibiting practices such as penalties for short notice termination, mandatory overtime, or binding clauses for accepting educational assistance offered, as well as other policy elements that address the prohibition of any form of involuntary labor.

- **Health & Safety – Emergency Preparedness** (~10% of findings): These findings related to adequate and effective emergency response planning, fire detection and suppression systems, emergency exits, emergency drills, and emergency response personnel.
- **Management Systems – Supplier Responsibility** (8% of findings) - These findings are related to missing procedures to escalate the RBA Code into the supply chain, including lacking a program to assess major supplier conformance to the RBA Code
- **Health & Safety – Occupational Health & Safety** (7 % of findings) - These findings related to health and safety related permits and licenses, risk assessment processes and related risk prevention measures, hazardous substance classification and labeling, required inspection records, adequate PPE use, and reasonable accommodation for nursing women.

## Responsible Minerals Sourcing

GF requires all materials to be sourced responsibly—this applies specifically to materials potentially sourced from conflict-affected and high-risk areas. GF’s Conflict Minerals Policy establishes due diligence expectations for sourcing of minerals and metals, such as tantalum, tin, tungsten, and gold (“3TG”) as well as cobalt. The policy specifically prohibits sourcing of 3TG metals that contributes to financing armed conflict and human rights abuses in the conflict regions of the Democratic Republic of Congo (DRC) and adjoining countries. Our corresponding responsible minerals sourcing program and its progress are reviewed periodically by the Stewardship Committee.

In the complex, multi-step silicon wafer manufacturing process, tantalum, tungsten—and in some cases, cobalt, or gold—are added to achieve the desired functionalities of integrated circuits. The commodities we purchase that contain tantalum, tungsten, gold, or cobalt include high-purity targets used in physical vapor deposition (PVD) and process gases and chemicals, all of which are used to deposit ultra-thin metal films onto the wafer



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## Responsible Sourcing

surface. Tin and gold are used in post-wafer fab process steps, such as in interconnect materials in wafer bump or wafer packaging, and in components used for semiconductor module assembly.

GF is a member of the Responsible Minerals Initiative (RMI) and applies RMI's due diligence tools, such as the Responsible Minerals Assurance Process (RMAP) and Risk Readiness Assessment (RRA) for conflict-affected and high-risk areas. GF's goal is to maintain our 3TG DRC conflict-free supply chain – a status that we initially achieved in 2016. As of Q1 2021, GF's supply chain includes 40 tungsten, 39 tantalum, 103 gold and 67 tin smelters, all of which are validated as DRC conflict-free smelters<sup>15</sup>. DRC conflict-free sourcing is defined by sourcing 3TG metals only from smelters listed as compliant by the Responsible Minerals Initiative's (RMI) Responsible Minerals Assurance Process (RMAP). We routinely provide due diligence information to support our customers' reporting needs. To maintain our DRC conflict-free supply chain status, we

<sup>15</sup> At the time of publication, 1 Tin smelter is in RMAP active status.

manage our supply base to control all direct materials (those that become part of GF products) containing 3TG metals. We partner with our suppliers to identify all smelters in our extended supply chain and ensure they maintain RMAP conformance. Any new commodities including 3TG metals must be sourced only from RMAP compliant smelters.

For cobalt, we have implemented due diligence processes aligned with the RMI's Cobalt Initiative. As of Q1, 2021, 73 percent of our cobalt smelters are engaged in the cobalt RMAP compliance program. Because the cobalt program is one of the more recently implemented RMAP programs, globally, only a very small percentage of cobalt smelters have completed a compliance audit. In line with RMI's cobalt program, we are working with our cobalt suppliers who utilize smelters that are not yet RMAP compliant to exert pressure on the smelters to achieve compliance as expeditiously as possible.

Starting in 2019 GF expanded our supplier assurance processes to our extended minerals supply chain, using RMI's Risk Readiness

Assessment (RRA). The RRA is a voluntary self-assessment and reporting tool that extends further upstream than the RMAP program, which focuses on smelters. It enables an understanding of the environmental, social, and governance risks in the minerals supply chain beyond DRC conflict-free minerals sourcing, broadening the scope to include more environmental, social and governance risk areas, that are associated with sourcing minerals and metals. For each of the risk areas, the RRA specifies good management practices ("industry norms") to successfully address potential risk. These management practices are derived from requirements of voluntary sustainability standards that are commonly used in the minerals and metals supply chains. GF works with our direct suppliers and smelters in our supply chain to initiate RRA surveys. To date GF has initiated RRA surveys for 165 upstream supply chain entities. Of these, 57 supply chain entities have connected with GF in the RRA tool and 50 have completed RRA surveys. Communications have been sent out to GF suppliers to take appropriate corrective actions with their suppliers based on their RRA results.



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## About this Report

The GlobalFoundries 2021 Corporate Responsibility Report is our seventh comprehensive corporate social responsibility and sustainability report. The last report was published in 2020 and covered 2019 data.

We use the Global Reporting Initiative (GRI) G4 Sustainability Reporting Standards and self-declare that this report has been prepared in accordance with the GRI Standards: Core option.

Data presented in this report reflect calendar year 2020 where not indicated otherwise. The data were compiled from facilities owned or operated by GlobalFoundries during the reporting period and validated using our internal processes.

The divestiture of GF Fab 3E (Tampines, Singapore) at the end of 2019 marked a change in our operational boundary relevant to the data in this report. Where this report includes data from years prior to 2020, it has been recalculated by removing the Fab 3E contribution to correctly reflect this change in our operational boundary.

We value and encourage your feedback on this report. Please send comments or questions to [CSR@globalfoundries.com](mailto:CSR@globalfoundries.com).



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# Site Profile: FAB 1 – Dresden, Germany

Groundbreaking for Fab 1 in Dresden took place in October 1996. The grand opening of the first production clean room followed in 1999, and the Dresden site has continued to expand ever since. In 2009, the Dresden site became the first GlobalFoundries fab when the company was divested from Advanced Micro Devices, Inc. (AMD). With more than 52,000 square meters of cleanroom, Fab 1 is the largest semiconductor manufacturing site in Europe. To date, more than €10B Euros have been invested in the Dresden operations. GF Dresden contributes significantly to the advancement of a leading-edge semiconductor industry in Europe, Germany, and specifically the high-tech cluster in Saxony. The region currently counts approximately 2,400 high-tech companies with more than 64,000 employees.

## Community Relations

Located literally fence-to-fence with its neighbors in the 800-year-old villages of Wilschdorf and Boxdorf, the Dresden site participated in its first local town hall meetings back in 1996 and continues to do so today. GF Dresden supports various neighborhood associations and activities such as local heritage societies, volunteer fire brigades and choirs.

The Dresden site's Community Affairs Program has a strong focus on educational youth projects. As a leading tech company, the Dresden site is driving a considerable number of educational projects focused on STEM activities with K-12

students. Jointly with other long-term partners, GF Dresden is a sponsor of the renowned youth tech competition "Jugend forscht" ("Young Scientists").

Focus in 2021 is on virtual events for K-12 students, such as "Girls' Day", "Summer University" (jointly with TU Dresden) and virtual "microelectronics lessons" for school classes.

## COVID-19 Relief Campaign 2020

Within the worldwide GF COVID-19 relief campaign, GF Dresden and its employees have donated more than €140K to organizations and associations in Saxony. Nearly €50K went to the Red Cross Saxony to set up a mobile COVID-19 test station for additional testing capacity, including in homes and nursing homes. In addition, the recipients included Bürgerstiftung Dresden, Dresdner Tafel e.V., Diakonie - Stadtmission Dresden, THW Dresden, Sonnenstrahl e.V. and arche noVa e.V.

## Sustainability Feature: Low Greenhouse Gas Emissions

Fab 1 was designed for extremely low emissions of PFCs, which is accomplished by utilizing low-emission gases in CVD chamber cleaning, coupled with near-universal use of point-of-use abatement equipment for PFC-using processes. Highly efficient natural gas powered trigeneration plants power Fab 1, along with a fraction of electricity from the Dresden public grid.

## Awards:

- 2020 Dresden's Best Employers: awarded by the business magazine Capital. The evaluation took into account GF Dresden's specific commitment to the region, its dedication to social responsibility, and the respondents' rating of GF Dresden as an attractive employer.
- 2020 Germany's Best Companies for Vocational Training: awarded by the business magazine Capital and Ausbildung.de. GF Dresden scored well for our support and involvement of trainees, innovative teaching methods and excellent overall quality of learning in the company.
- 2020 German Innovation Leaders: GF Dresden was honored to be named a German Innovation leader by Frankfurter Allgemeine Zeitung for our own inventiveness and for the influence of our patents on other inventions.
- 2020 Best Employers in Germany: Newspaper WELT has assessed GF Dresden's "very high attractiveness" as an employer in the industrial sector.

Wafer Size: 300mm

Technology: 55nm, 45nm, 28nm, 22nm

Management System Certifications: ISO 9001, IATF 16949, ISO 14001, ISO 45001, ISO 27001, ISO 50001, Sony Green Partner.



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# Site Profile: GIGA+ FAB and FAB 7/7G – Singapore

GF Singapore Woodlands campus is home to one 200mm “GIGA+ Fab” (Fabs 2, 3 and 5) and one 300mm Fab (Fab 7/7G). The history of our GIGA+ fab goes back to 1995 when Fab 2 first started production. Our 300mm Fab 7 commenced operation in 2005 and has evolved ever since. The last significant extension was during 2016, when our former 200mm Fab 6 was converted to 300mm (Fab 7G) and merged into Fab 7. The GF Singapore fabs were previously owned by Chartered Semiconductor Manufacturing and were acquired by GlobalFoundries in 2010.

## Community Relations

Since 2006, the GF Singapore site has held an annual Hair for Hope fundraising event benefiting the Singapore Children’s Cancer Foundation (CCF). GF donated a total of S\$20k (~US\$15k) to the beneficiary in 2020 and altogether has raised more than S\$1M over the last 16 years. This signature event serves to raise funds and promote awareness of childhood cancer. GF Singapore also supports regional STEM activities, providing insights into advanced technology for students from several tertiary institutions.

## COVID-19 Relief Campaign 2020

Since February 2020, GF Singapore and its employees have generously contributed and accumulated over S\$260k (~US\$195k) in both employee donations and company matching. Donations went towards supporting and providing relief to vulnerable individuals and families, including healthcare workers, frontline workers, and volunteers, affected by COVID-19. Our Singapore team also prepared and shipped a donation of 30,000 surgical masks to Singapore’s National Council of Social Services and shared with those in need.

## Sustainability Feature: Resource Efficiency

Resource efficiency is a priority for the Singapore team—energy and water conservation programs are continually pursued. For example, our Singapore fabs have extensive state-of-the-art water recycling capabilities in place. The site achieved a 54 percent recycling rate in 2020<sup>16</sup> with projects in implementation to further increase water recycling. Moreover, 95 percent of the water supply to GF Singapore is NEWater, which is reclaimed and treated wastewater supplied by the Singapore Public Utilities Board. Using NEWater supports Singapore’s water conservation strategy to reserve high-quality potable water for domestic consumption.

<sup>16</sup> As compared to incoming water supply.

## Awards

- 2020 Responsible Business Alliance (RBA) VAP Audit Platinum Recognition for achieving the maximum score of 200 in the November 2020 VAP Audit;
- 2020 Singapore Community Spirit Gold in recognition of the collective contribution from the company and its employees to The Courage Fund. This giving effort has helped social service agencies and the service users they support tide through challenges arising from the COVID-19 pandemic.
- 2020 Singapore Children’s Cancer Foundation Appreciation Award (Silver) for the collective effort and giving of the company and our employees.

Wafer Size: 300mm / 200mm

Technology: 180nm–40nm

Management System Certifications: ISO 9001, IATF 16949, ISO 14001, ISO 45001, Sony Green Partner; Fab 2/7/7G: ISO 15408 (Common Criteria), ISO 27001 (Information Security Management)



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# Site Profile: FAB 8 – Malta, New York, USA

In 2009, GlobalFoundries broke ground for construction of the Fab 8 300mm wafer manufacturing facility in Malta, New York. Total capital investment for the Fab 8 campus now exceeds \$15 billion. The majority of this investment has been directed towards advanced 14/12nm process technologies. With 450,000 square feet of cleanroom space and continued expansion, GF’s Fab 8 is one of the leaders in advanced manufacturing in the U.S. Fab 8 is a cornerstone of Upstate New York’s “Tech Valley” region and is the largest public-private sector industrial investment in New York state’s history.

## Community Relations

Along with charitable donations in the local community, the site’s community relations program supports numerous educational initiatives. These include the FIRST® (For Inspiration and Recognition of Science and Technology) robotics program, a GlobalGirls STEM camp for middle school girls in partnership with the Girl Scouts of Northeastern New York and mentoring and workshops for P-TECH (Pathways in Technology Early College High School) students. Additionally, the Fab 8 team partners with local school districts on educational programming for students about the semiconductor industry, GF and STEM careers.

Together with its consortium of business partners, GF has invested over \$5M in the Saratoga County

communities of Malta & Stillwater including the development and construction of a \$1.1M three-season community athletic complex in the Luther Forest Technology Campus. The GF Malta and GF Stillwater Foundations have collectively pledged in excess of \$1.8M to over 450 community, civic, athletic, non-profit and STEM programming organizations through 2020.

## Covid-19 Relief Campaign 2020

Fab 8 has provided economic support to many community-based health and social service organizations along with donating thousands of pieces of critically needed personal protective equipment (PPE) to hospitals, health care and emergency services organizations. Fab 8 employees generously supported the GF GlobalGives COVID-19 Campaign, contributing a total of \$120K to local organizations. Fab 8 also donated \$73K to support the New York State First Responders COVID-19 Fund. The GF-Town of Malta and GF-Town of Stillwater Foundations provided a total of \$59K to organizations supporting food needs for local residents and students.

## Sustainability Features: Green Building Design

The Fab 8 campus has integrated green building principles and energy and water efficiency features from the beginning. This includes an innovative system that uses heat recovery chillers to meet the fab’s year-round base cooling load and recovers

the heat for site needs instead of removing it with cooling towers. The fab was also equipped from the start with high-efficiency motors, chillers, boilers, fan filters for the cleanroom, and vacuum pumps. Using the “LEED (Leadership in Energy & Environmental Design)® green building program” design criteria from the US Green Building Council, the Fab 8 campus achieved LEED Gold® for the Admin1 and Admin2 office buildings and LEED Silver® for the fabrication facility.

## Awards:

- 2020 Responsible Business Alliance (RBA) VAP Remote Recognition for achieving the maximum score of 200 in Fab 8’s first ever VAP Audit in October 2020.
- 2020 New York Capital Region’s Healthiest Employers Award: Fab 8 was honored by Albany Business Review for its wellness programming and benefits.
- Green Building: Admin 1 and Admin 2 office buildings are LEED Gold®. Fab 8.1 fabrication facility is LEED Silver®.

Wafer Size: 300mm

Technology: 14/ 12nm

Management System Certifications: ISO 9001, ISO 14001, ISO 45001, ISO 27001



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## Site Profile: FAB 9 – Burlington, Vermont, USA

GF Fab 9 is the largest private employer in the state of Vermont. IBM broke ground on this Vermont facility located on the banks of the Winooski River near Burlington in 1957. Since then, the campus has grown and evolved into a major semiconductor manufacturing site. GF acquired the site as part of the IBM Microelectronics business in 2015.

### Community Relations

The Burlington site has an extensive history of community involvement, whether through charitable contributions or volunteering during its “Days of Caring.” As part of the GF GlobalGives program, many Burlington employees volunteer with a variety of local non-profit agencies, which focuses on food stability, health services and family-oriented causes. Burlington employees participate in on-site blood drives, work with the Special Olympics, and are highly involved with local cancer support agencies. Additionally, GF employees at Fab 9 support many K-12 STEM initiatives. Fab 9 hosts a GlobalGirls STEM camp for middle school students, along with volunteering and sponsorships for Odyssey of the Mind, STARBASE, and FIRST® (For Inspiration and Recognition of Science and Technology) Lego and Robotics.

### COVID-19 Relief Campaign 2020

As an extension of GF’s corporate COVID-19 relief campaigns, Fab 9 provided support to key Vermont needs such as local food banks, and donated qualified PPE to health care sites, first responders, medical facilities, and the state’s emergency operations center in Vermont for those on the front lines of the pandemic. The GF Burlington site’s donations included more than \$70K to the Vermont Foodbank, United Way of Northwest VT COVID-19 United Response Fund, and the University of Vermont (UVM) Medical Center Covid-19 Response Fund for first responders. Fab 9 also donated 10 Apple iPad Pros to the UVM Medical Center to support ultrasound systems.

### Sustainability Feature:

#### Legacy of environmental excellence

Noted for its long-term environmental excellence, GF Fab 9 Burlington has received extensive recognition including numerous national, regional, and state awards for its pollution prevention programs. The Burlington site also has a history of supporting photovoltaic development research, and in 2016, transferred unused land to Green Mountain Power to develop a 4.7 MW solar power generation facility, the state’s largest at that time, providing benefits to local communities, GF, and the environment.

### Awards:

- 2020 Responsible Business Alliance (RBA) VAP Audit Recognition - GF Fab 9 achieved the maximum score of 200 in its February 2021 VAP Audit. Due to COVID-19, this audit, while intensive, was fully virtual. RBA currently provides “Remote Recognition” for such audits while the previous 200-point audit score in 2018 received “Platinum Recognition”.
- 2020 Vermont Governor’s Excellence Award in Worksite Wellness - Gold level.
- 2020 LCC (Lake Champlain Chamber) Community Impact Award: Fab 9 was recognized for enhancing the quality of life of the Lake Champlain region of Vermont.

Wafer Size: 200mm

Technology: 350nm-90nm

Cleanroom Area: 470,000 ft<sup>2</sup> (43,600 m<sup>2</sup>)

Management System Certifications: ISO 9001, TS 16949, ISO 14001, ISO 45001, Sony Green Partner



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## Site Profile: FAB 10 – East Fishkill, New York, USA

Originally developed by IBM in 1962, the East Fishkill, New York, site grew and evolved into a major R&D and manufacturing center. The site joined GF as part of the acquisition of IBM Microelectronics in 2015 and is now known as GF Fab 10. In April 2019, GF announced the launch of its strategic partnership with ON Semiconductor, through which GF will transfer ownership of the Fab 10 facility to ON at the end of 2022.

### Community Relations

East Fishkill employees have always prided themselves on being good neighbors, giving generously to the local community through charitable donations and volunteering in the local community. In the past, Fab 10 employees assembled bikes to donate to local children's not-for-profit organizations, collected hats, gloves, and non-perishable food for the community, provided gifts for Toys-for-Tots, and supported the "Treat the Troops" program to send homemade care packages to deployed U.S. military service members. Most recently in 2021, employees volunteered and completed a roadside cleanup in East Fishkill to honor Earth Day.

The East Fishkill site has also participated in STEM activities, including DiscoverE school visits and National Manufacturing Day on-site where students experience STEM problem solving skills and careers. The Fab 10 team continued to partner with local school districts in a virtual environment on educating students about the semiconductor industry, GF and STEM careers.

### COVID-19 Relief Campaign 2020

As an extension of GF's corporate COVID-19 relief campaign, the Fab 10 team donated \$50K to Dutchess Responds, a local effort to provide critical needs such as food, medication and household essentials to individuals experiencing hardships or quarantine restrictions. In addition, East Fishkill employees donated close to \$5K through a GF charitable contribution campaign and \$10K to the Hudson Valley Food Bank which reaches six counties in the surrounding region. GF also provided masks to healthcare facilities in the early days of the pandemic.

### Sustainability Features

Fab 10 produces two commercial chemical products for reutilization from the wastewaters generated by its 300mm manufacturing operations. A sulfuric acid wastewater is segregated to produce a spent sulfuric acid product and an ammonia wastewater is distilled to produce an ammonium hydroxide solution for reuse in off-site catalytic air emission abatement systems.

Groundwater treated through IBM groundwater remediation activities (approximately 25 percent of site water usage) is also reused in the production of ultra-pure water.

Wafer Size: 300mm

Technology: 90nm–22nm

Cleanroom Area: 269,780 ft<sup>2</sup> (24,530 m<sup>2</sup>)

Management System Certifications: ISO 9001, AS 9100C, ISO 14001, ISO 45001





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## Site Profile: Bangalore, Karnataka, India

The GF India office in Bangalore is our largest non-manufacturing site and serves as a center of excellence for design and technology enablement, information management and information technology (IMIT). GF India is also home to fab engineering, product tape out, Human Resources, Finance, Global Sales and Business Development teams. GF India joined the company in July 2015 as a strategic component of our acquisition of the IBM Microelectronics Division.

The GF India Board of Directors established a CSR Policy in 2017 and has a dedicated CSR Committee that oversees actions taken in support of the policy. GF India executes a wide range of CSR projects every year with a dedicated budget and tremendous support from our employee volunteers. Our activities are focused primarily on these key focus areas:

- Education - improving the quality of education for children,
- Vocational Training and Skill Building
- Healthcare - COVID-19 and philanthropy (providing better healthcare facilities and social welfare), and
- Environment - spreading awareness and facilitating environmental sustainability.

Our CSR projects serve not only communities in Bangalore, but also extend to the rural and tribal sectors in the State of Karnataka. GF India donates to non-governmental organizations (NGOs) and contributes teaching aids for skill development, smart class and computer lab setups, healthcare equipment, and environmental solutions. GF India also organizes field trips, 'Show & Tell' workshops, celebrates National Science Day, and engages children from various underprivileged schools to spread awareness about the importance of, and growth opportunities in, Science and Technology.

In 2020 and early 2021 our CSR projects included:

### Education

- Providing teaching, learning aids and sports equipment to more than 50 tribal / afterschool learning centers, touching the lives of ~1,700 children in Haliyal, Karnataka
- Setting up a computer lab for the Mathru Educational Trust, which operates schools for vision-impaired, hearing-impaired and other differently-abled children. Over 150 children from primary to class 10 benefited from basic computer education.
- Giving smart-class and infrastructure support to 6 underprivileged schools in the outskirts of Bangalore and rural areas supporting the education of 2,000+ primary and higher secondary class students.

- Supplying desktops and learning aids to girls and boys shelter homes in Bangalore supporting 200 children.
- Donating to the Tribal Society of India to successfully run 40 one-teacher schools (Ekal Vidyalaya) in tribal areas for the year 2021.

### Healthcare

- Donating PPE kits, masks, sanitizers, a patient monitoring system and nasal cannula device to local hospitals and healthcare workers and NGOs;
- Infrastructure support for NGOs focused on vocational training, skill building, development and empowerment of differently abled women and health care centers in rural areas.

### Environment

- Donating solar power enablement for rural health care resource centers which support 125 villages, facilitating basic health care, medical and rehabilitation for children with severe and profound conditions, as well as a residential school for vision-impaired students. The solar projects also enabled street lighting for 5 villages.

### Vocational Training and Skill Building

- Donating sewing machines to underprivileged communities under the women empowerment sustainable development program.
- Donating desktops to a school providing vocational skill building for vision-impaired people and sustainable development.



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# 2021 Global Reporting Initiative (GRI) Index

GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 102: General Disclosures 2016</b>	102-1	Name of the organization	Company Profile		Full
	102-2	Activities, brands, products, and services	Company Profile		Full
	102-3	Location of headquarters	Company Profile		Full
	102-4	Location of operations	Company Profile		Full
	102-5	Ownership and legal form	Governance		Full
	102-6	Markets served	Company Profile		Full
	102-7	Scale of the organization	Company Profile		Full
	102-8	Information on employees and other workers	Human Capital—Diversity & Inclusion and Talent Development		Full
	102-9	Supply chain	Responsible Sourcing		Full
	102-10	Significant changes to the organization and its supply chain	Company Profile	The divestiture of GF Fab 3E at the end of 2019 marked a change in our operational boundary relevant to the data in this report. Where this report shows data from years prior to 2020, it has been recalculated by removing the Fab 3E contribution to correctly reflect the change in operational boundary.	Full
	102-11	Precautionary Principle or approach	Sustainable Manufacturing and Operations		Full
	102-12	External initiatives	GF Stakeholders and CSR Priorities		Full
	102-13	Membership of associations	GF Stakeholders and CSR Priorities		Full
	102-14	Statement from senior decision-maker	CEO Statement		Full
	102-16	Values, principles, standards, and norms of behavior	Governance		Full

# 2021 Global Reporting Initiative (GRI) Index



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GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 102: General Disclosures 2016</b>	102-17	Mechanisms for advice and concerns about ethics	Governance		Full
	102-18	Governance structure	Governance		Full
	102-19	Delegating authority	Governance		Full
	102-20	Executive-level responsibility for economic, environmental, and social topics	Governance		Full
	102-22	Composition of the highest governance body and its committees	–	The membership of the GF Board of Directors Members is disclosed at <a href="https://gf.com/about-us/leadership-team/board-directors">https://gf.com/about-us/leadership-team/board-directors</a>	Partial
	102-23	Chair of the highest governance body	–	Information on the members of the GF Board of Directors, including the Chair, is disclosed at <a href="https://gf.com/about-us/leadership-team/board-directors">https://gf.com/about-us/leadership-team/board-directors</a>	Full
	102-40	List of stakeholder groups	GF Stakeholders and CSR Priorities		Full
	102-41	Collective bargaining agreements	–	None	Full
	102-42	Identifying and selecting stakeholders	GF Stakeholders and CSR Priorities		Full
	102-43	Approach to stakeholder engagement	GF Stakeholders and CSR Priorities		Full
	102-44	Key topics and concerns raised	GF Stakeholders and CSR Priorities		Full
	102-45	Entities included in the consolidated financial statements	–	GlobalFoundries is a privately held company and does not publish financial statements.	Not Disclosed
	102-46	Defining report content and topic Boundaries	GF Stakeholders and CSR Priorities		Full
	102-47	List of material topics	GF Stakeholders and CSR Priorities		Full



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# 2021 Global Reporting Initiative (GRI) Index

GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 102: General Disclosures 2016</b>	102-48	Restatements of information	–	None	Full
	102-49	Changes in reporting	GF Stakeholders and CSR Priorities		Full
	102-50	Reporting period	About this Report		Full
	102-51	Date of most recent report	About this Report		Full
	102-52	Reporting cycle	About this Report		Full
	102-53	Contact point for questions regarding the report	About this Report		Full
	102-54	Claims of reporting in accordance with the GRI Standards	About this Report		Full
	102-55	GRI content index	GRI Content Index		Full
	102-56	External assurance	–	At this time, GlobalFoundries is not seeking external assurance for this report	Full
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	GF Stakeholders and CSR Priorities		Full
	103-2	The management approach and its components	–	Covered in topic related report sections.	Full
	103-3	Evaluation of the management approach	–	Covered in topic related report sections.	Full
<b>GRI 201: Economic Performance 2016</b>	201-1	Direct economic value generated and distributed	–	While this is a material topic, as a privately held company GlobalFoundries does not disclose financial details	Not disclosed
<b>GRI 203: Indirect Economic Impacts 2016</b>	203-2	Significant indirect economic impacts	Site Profiles		Full



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# 2021 Global Reporting Initiative (GRI) Index

GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 205: Anti-corruption 2016</b>	205-1	Operations assessed for risks related to corruption	–	In 2020, the company's Ethics & Compliance team conducted an enterprise risk assessment including focus on potential corruption. The company also monitors its reporting mechanisms available to internal and external parties for corruption related matters. No significant risks related to corruption were identified.	Full
	205-2	Communication and training about anti-corruption policies and procedures	Governance		Full
<b>GRI 206: Anti-competitive Behavior 2016</b>	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	–	None	Full
<b>GRI 302: Energy 2016</b>	302-1	Energy consumption within the organization	Sustainable Manufacturing and Operations		Full
	302-3	Energy intensity	Sustainable Manufacturing and Operations		Full
	302-4	Reduction of energy consumption	Sustainable Manufacturing and Operations		Full
	302-5	Reductions in energy requirements of products and services	Technology Solutions for Humanity		Full
<b>GRI 303: Water and Effluents 2018</b>	303-1	Interactions with water as a shared resource	Sustainable Manufacturing and Operations		Full
	303-2	Management of water discharge-related impacts	Sustainable Manufacturing and Operations		Full
	303-3	Water withdrawal	Sustainable Manufacturing and Operations		Full
	303-4	Water discharge	Sustainable Manufacturing and Operations		Full
	303-5	Water Consumption	Sustainable Manufacturing and Operations		Full

# 2021 Global Reporting Initiative (GRI) Index



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GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 305: Emissions 2016</b>	305-1	Direct (Scope 1) GHG emissions	Sustainable Manufacturing and Operations		Full
	305-2	Energy indirect (Scope 2) GHG emissions	Sustainable Manufacturing and Operations		Full
	305-3	Other indirect (Scope 3) GHG emissions	–	Scope 3 indirect GHG emissions occur in our value chain, including both upstream and downstream emissions. GF has performed internal annual carbon footprint assessments which estimate that the most relevant upstream Scope 3 GHG emissions are from materials purchased for use in GF semiconductor manufacturing processes and represent approximately 10 percent of GF's 2020 combined Scope 1 and Scope 2 GHG emissions value.	Partial
	305-4	GHG emissions intensity	Sustainable Manufacturing and Operations		Full
	305-5	Reduction of GHG emissions	Sustainable Manufacturing and Operations		Full
	305-6	Emissions of ozone-depleting substances (ODS)	–	GF does not use ODS in and does not release ODS from its manufacturing processes. Some GF fabs use a Montreal Protocol Annex C substance as a refrigerant in closed chillers within applicable laws and regulations.	Full
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Sustainable Manufacturing and Operations	Our 2020 fabs' combined corrosive emissions were approximately 86,670 kg (this value is based on air emission measurements conducted annually at each fab).	Partly
<b>GRI 306: Effluents and Waste 2016</b>	306-2	Waste by type and disposal method	Sustainable Manufacturing and Operations		Full
	306-3	Significant spills	–	None	Full
<b>GRI: 307: Environmental Compliance 2016</b>	307-1	Non-compliance with environmental laws and regulations	Sustainable Manufacturing and Operations		Full
<b>GRI 308: Supplier Environmental Assessment 2016</b>	308-1	New suppliers that were screened using environmental criteria	Responsible Sourcing; Sustainable Manufacturing and Operations		Full
	308-2	Negative environmental impacts in the supply chain and actions taken	Responsible Sourcing		Full



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# 2021 Global Reporting Initiative (GRI) Index

GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 401: Employment 2016</b>	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Capital - Talent Development, Diversity and Inclusion		Full
<b>GRI 403: Occupational Health and Safety 2018</b>	403-1	Occupational health and safety management system	Employee Health & Safety and Well-Being		Full
	403-2	Hazard identification, risk assessment, and incident investigation	Employee Health & Safety and Well-Being		Full
	403-3	Occupational health services	Employee Health & Safety and Well-Being		Full
	403-4	Worker participation, consultation, and communication on occupational health and safety	Employee Health & Safety and Well-Being		Full
	403-5	Worker training on occupational health and safety	Employee Health & Safety and Well-Being		Full
	403-6	Promotion of worker health	Employee Health & Safety and Well-Being		Full
	403-8	Workers covered by an occupational health and safety management system	Employee Health & Safety and Well-Being		Full
	403-9	Work-related injuries	Employee Health & Safety and Well-Being	GF does not report data for b.iii. and b.v. because we do not have full access to data on hours worked by employees of supplier companies who perform work at GF premises.	Partly
	403-10	Work-related ill health	–	During 2020 there were no cases and no fatalities of work-related ill health or fatalities affecting GF employees or contractor employees performing work at GF fab sites.  Please also note: GF does not have full access to data on hours worked by employees of supplier companies who perform work at GF premises.	Partly



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# 2021 Global Reporting Initiative (GRI) Index

GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 404: Training and Education 2016</b>	404-1	Average hours of training per year per employee	Human Capital - Talent Development, Diversity and Inclusion	We do not break out employee training hours by gender or employee category.	Partly
	404-2	Programs for upgrading employee skills and transition assistance programs	Human Capital - Talent Development, Diversity and Inclusion		Full
	404-3	Percentage of employees receiving regular performance and career development reviews	Human Capital - Talent Development, Diversity and Inclusion	All GF employees below Vice President Level are subject to GF's employee performance management process COMPASS.	Full
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1	Diversity of governance bodies and employees	Human Capital - Talent Development, Diversity and Inclusion	Age group information is not disclosed. GF considers age data for employees attorney-client privileged information.	Partly
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Governance; Responsible Sourcing		Full
<b>GRI 408: Child Labor 2016</b>	408-1	Operations and suppliers at significant risk for incidents of child labor	Governance; Responsible Sourcing		Full
<b>GRI 409: Forced or Compulsory Labor 2016</b>	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Governance; Responsible Sourcing		Full
<b>GRI 412: Human Rights Assessment 2016</b>	412-1	Operations that have been subject to human rights reviews or impact assessments	Governance		Full
	412-2	Employee training on human rights policies or procedures	Governance		Full
<b>GRI 413: Local Communities 2016</b>	413-1	Operations with local community engagement, impact assessments, and development programs	Community Engagement; Site Profiles		Full





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# 2021 Global Reporting Initiative (GRI) Index

GRI Standard	GRI Standard Disclosure Number	GRI Disclosure Title	2021 CSR Report Section	Explanatory Comment / Direct Information	Coverage
<b>GRI 414: Supplier Social Assessment 2016</b>	414-1	New suppliers that were screened using social criteria	Responsible Sourcing		Full
	414-2	Negative social impacts in the supply chain and actions taken	Responsible Sourcing		Full
<b>GRI 419: Socioeconomic Compliance 2016</b>	419-1	Non-compliance with laws and regulations in the social and economic area	–	In 2020, GlobalFoundries was not assessed any significant fines or non-monetary sanctions.	Full



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# 2021 Sustainability Accounting Standards Board (SASB) Index

Topic	Accounting Metric	Category	Unit Of Measure	Code	GF Disclosure
Greenhouse Gas Emissions	(1) Gross global Scope 1 emissions and (2) amount of total emissions from perfluorinated compounds	Quantitative	Metric tons (t) CO -e	TC-SC-110a.1	(1) 2020 Scope 1 GHG emissions: 1,552,766 MTCO2-e (equals: 423,482 MTCE, see <a href="#">Figure 9</a> in section 09 Sustainable Manufacturing and Operations) (2) 2020 Scope 1 perfluorinated compounds GHG emissions: 1,164,332 MTCO2-e (equals: 317,545 MTCE, see <a href="#">Figure 10</a> in section 09 Sustainable Manufacturing and Operations)
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	n/a	TC-SC-110a.2	We disclose our GHG emissions over time as well as short and long term strategy in section 09 Sustainable Manufacturing and Operations, of this report. Short term targets (2018 - 2021) for combined Scope 1 and Scope 2 GHG emissions are – Achieve savings in annual GHG emissions of 11,900 metric tons carbon equivalent (MTCE); – 18 percent reduction of normalized greenhouse gas emissions At YE 2020, GF had exceeded our target to save annual GHG emissions of 11,900 MTCE by implementing projects that save more than 36,000 MTCE annually, with more than 34,000 MTCE being Scope 1 GHG emissions. Normalized Scope 1 & Scope 2 emissions decreased nearly seven percent since 2018 – with a decrease of normalized Scope 1 emissions by nearly four percent. Considering GF’s production growth of 35 percent (as expressed in MI) since our previous baseline of 2H2015/1H2016, normalized Scope 1 GHG emissions decreased by more than 24 percent. Long-term strategy: In August 2021 GF announced our "Journey to Zero Carbon" Initiative, which builds on our long history of proactive investment in Greenhouse Gas (GHG) emissions reduction. We are setting a goal to reduce absolute GHG emissions by 25% from 2020 to 2030 by enhancing manufacturing (emission) controls, further improving energy efficiency, and sourcing renewable and lower-carbon energy - even as we significantly expand our global manufacturing capacity.
Energy Management in Manufacturing	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	Quantitative	Gigajoules (GJ), Percentage (%)	TC-SC-130a.1	(1) 1,0866,880 GJ (2) 87% (3) 0.14% (self generated solar electricity)



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# 2021 Sustainability Accounting Standards Board (SASB) Index

Topic	Accounting Metric	Category	Unit Of Measure	Code	GF Disclosure
Water Management	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative	Thousand cubic meters (m³), Percentage (%)	TC-SC-140a.1	(1) 27,258 Thousand m³ (see <a href="#">Figure 7</a> in section <a href="#">09 Sustainable Manufacturing and Operations</a> ) (2) 3,471 Thousand m³ (see <a href="#">Figure 8</a> in section <a href="#">09 Sustainable Manufacturing and Operations</a> ) Zero percent of GF water withdrawal or consumption is in regions with high or extremely high baseline water stress per the World Resources Institute's (WRI) "Aqueduct Water Risk Atlas"
Waste Management	Amount of hazardous waste from manufacturing, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TC-SC-150a.1	(1) 48,057 Tons (see <a href="#">Figure 11</a> in section <a href="#">09 Sustainable Manufacturing and Operations</a> ) (In combination with hazardous waste per applicable legal definitions, we also include the category "byproducts beneficially recycled and reused" in this total. This category is only applicable to our U.S. sites because reclaimed material is excluded from the U.S. EPA definition of hazardous waste.); (2) 50.6 % (see <a href="#">Figure 12</a> in section <a href="#">09 Sustainable Manufacturing and Operations</a> ) (the rate combines the categories "recycled /reused" with "byproducts beneficially recycled and reused")
Employee Health & Safety	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	Discussion and Analysis	n/a	TC-SC-320a.1	We disclose our management approach to Employee Safety and Health in this report's section <a href="#">05 Employee Health, Safety and Well-Being</a> including our enterprise certification to ISO 45001.
	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	Quantitative	Reporting currency	TC-SC-320a.2	None (0 USD)
Recruiting & Managing a Global & Skilled Workforce	Percentage of employees that are (1) foreign nationals and (2) located offshore	Quantitative	Percentage (%)	TC-SC-330a.1	(1) GF is proud to employ a highly diverse, multicultural workforce across our global locations with more than 92 nationalities across 14 countries. GF does not disclose the number of employees that are foreign nationals.



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# 2021 Sustainability Accounting Standards Board (SASB) Index

Topic	Accounting Metric	Category	Unit Of Measure	Code	GF Disclosure
Product Lifecycle Management	Percentage of products by revenue that contain IEC 62474 declarable substances	Quantitative	Percentage (%)	TC-SC-410a.1	<p>We disclose our management approach to Product Stewardship, including product material content compliance, in section <a href="#">09 Sustainable Manufacturing and Operations</a>. We do not disclose percentage of products by revenue that contain IEC 62474 declarable substances.</p> <p>ALL GF manufactured finished die patterned wafers comply with applicable regulatory requirements, including the EU Directive on restricted use of certain hazardous substances in electrical and electronic equipment (RoHS Directive), its sister directives in other jurisdictions, such as China RoHS, and other legislation that regulates substances contained in products (also called “articles”), the EU Regulation on Registration, Evaluation, and Authorization of Chemicals (REACH) as well as Toxic Substances Control Act (TSCA) provisions on the presence of designated substances in articles.</p>
	Processor energy efficiency at a system-level for: (1) servers, (2) desktops, and (3) laptops	Quantitative	Various, by product category	TC-SC-410a.2	We disclose our general management approach to product energy efficiency in section <a href="#">06 Technology Solutions for Humanity</a> .
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	n/a	TC-SC-440a.1	<p>GF’s approach to responsible sourcing of certain conflict minerals is described in section <a href="#">10 Responsible Sourcing</a>, subsection <a href="#">Responsible Minerals Sourcing</a>. These include gold, tungsten, tantalum, tin and cobalt.</p> <p>Securing and protecting the ongoing supply of strategic and critical materials and minerals (including the subset of the “Rare Earth” elements that are important to our industry) ensures continuity in our manufacturing operations and most importantly, delivery to our clients. As such, GF’s Global Supply Management organization has implemented a rigorous Business Continuity Planning (BCP) process that considers multiple factors of risk with corresponding proactive mitigation plans and actions.</p> <p>Given GF’s global footprint, this BCP process is global in scope and is reviewed on a regular basis to maintain a constant state of readiness. Proactive measures are undertaken to ensure protection of our supply both in the short and long term.</p> <p>In summary, GF is confident in our existing supply chain to ensure continuous manufacturing operations and delivery.</p>
Intellectual Property Protection & Competitive Behavior	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Quantitative	Reporting currency	TC-SC-520a.1	None (0 USD)



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