

# 2021 Sustainability Report

Sustainability at core

# Building a World that Works for Tomorrow

## OUR COMMITMENT

We build the technology that enables a more sustainable tomorrow.

### Energy Transition

1/3

of the world's electricity generated with the help of GE technology

### Precision Health

4M+

healthcare installations

### Future of Flight

3 out of 4

commercial flights powered by GE or partner\* engines

We invest in R&D to build a world that works for tomorrow:

### Global R&D

\$3.7B

in 2021

Company-wide, GE, customer and partner funded

\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines; Engine Alliance is a 50-50 joint company between GE and Pratt & Whitney.



### United States

#### Path to decarbonizing gas turbines

Long Ridge Energy Terminal and GE Gas Power took a successful first step to transition the HA-powered facility to green hydrogen with multiple demonstration tests in 2022. Long Ridge is the first purpose-built hydrogen-burning power plant in the U.S. and the first worldwide to blend hydrogen in a GE H-class gas turbine.

[Learn more on page 28 ▶](#)



### Canada

#### Developing advanced nuclear solutions

GE Hitachi Nuclear Energy is working with Ontario Power Generation to deploy a BWX-300 small modular reactor (SMR) at OPG's Darlington site that could be complete as early as 2028. SMRs can play an essential role in deep decarbonization and in meeting the energy needs of a growing economy.



### Next Engineers

In 2021, the GE Foundation launched Next Engineers — a global college- and career-readiness program to increase the diversity of young people in engineering — in four cities: Cincinnati, Ohio, and Greenville, South Carolina, in the U.S., along with Johannesburg, South Africa, and Stafford, U.K.

[Learn more on page 116 ▶](#)



### Argentina, Brazil, Peru, South Africa

#### Grants to fight food insecurity

The COVID-19 pandemic has significantly impacted vulnerable communities, reducing access to basic food supplies. The GE Foundation provided several grants to food banks around the world, including Red Bancos De Alimentos in Argentina, Gerando Falcões and + Unidos in Brazil, Banco De Alimentos in Peru and Food Forward SA in South Africa. Thanks to our local partners, these grants are helping thousands of families experiencing food insecurity.

### United States

#### Mural Solution for labor and delivery

In 2021, GE Healthcare joined the White House in efforts to help providers improve maternal health outcomes. HCA Healthcare, a healthcare provider that delivered 215,000 babies in 2020, more than any other network of hospitals in the nation, adopted our Mural Solution for Labor and Delivery technology to help monitor maternal and fetal status on a continuous basis.

[Learn more ▶](#)

[Learn more ▶](#)



## United States & France

### **CFM International RISE program**

GE Aviation and Safran Aircraft Engines have extended their partnership, CFM International\*, to 2050 and launched the Revolutionary Innovation for Sustainable Engines (RISE) Program. The CFM RISE program will demonstrate and mature a range of new, disruptive technologies for future engines targeting more than 20% lower fuel consumption and CO<sub>2</sub> emissions compared to today's engines.

[Learn more ▶](#)



## United Kingdom

### **World-first smart substation**

GE Digital is partnering with its valued customer UK Power Networks on a world-first smart substation project. The project, known as Constellation, is designed to optimize utilization of the distribution network to facilitate the rise of renewable energy generation across the United Kingdom.

[Learn more ▶](#)



## Austria

### **Pumped hydro storage**

GE has been selected to supply and commission two 85 megawatt (MW) variable speed pumped storage turbines for the new Tauernmoos Pumped Hydro Storage Power Plant located in Austria. Tauernmoos will be the first new build Pumped Hydro Storage facility worldwide featuring fully fed variable speed technology, providing greater flexibility and shorter response times to load changes.

[Read more ▶](#)



## China

### **Breast cancer screening for underserved populations**

The number of breast cancer patients in China is growing, especially among underserved populations in rural areas. GE Healthcare partnered with a local start-up to increase accessibility. As a result, more than 5,600 were screened between May 2020 and March 2021.



## Ukraine

### **Supporting employees and communities**

GE and the GE Foundation made a \$4.5 million philanthropic commitment to provide immediate support to Ukraine and neighboring countries impacted by the violence there, including the donation of life-saving medical equipment from GE Healthcare, as well as contributions to relief agencies from the GE Foundation.

[Learn more on page 16 ▶](#)



## Democratic Republic of the Congo

### **Bringing essential equipment to 82 sites**

The diagnosis and management of COVID-19 is even more challenging where access to medical technology is extremely limited. In a bid to help efforts, GE Healthcare is partnering with the Ministry of Health to deliver mobile X-ray units and ECG machines to 82 sites around the Democratic Republic of the Congo.



## Middle East & Asia Pacific

### **GE's 360 Foam Wash**

Air India, Emirates, Etihad Airways, Japan Airlines, Qatar Airways, Royal Jordanian Airlines and Saudi Arabian Airlines are using GE's 360 Foam Wash, a patented jet engine cleaning system. This alternative to the water wash method helps restore engine performance, leading to reduced fuel consumption.

[Learn more on page 43 ▶](#)



## Egypt

### **"One-Stop Clinic" for rapid breast cancer diagnosis**

Breast cancer is the most common cancer among Egyptian women, accounting for 35% of cancers and around 22,000 cases in 2020. The President of Egypt launched an initiative to improve early detection of breast cancer, hypertension, diabetes, osteoporosis and heart disease. To accelerate this initiative, the Egyptian Ministry of Health signed a preliminary agreement with GE Healthcare and Europe's top cancer hospital Gustave Roussy to create rapid diagnosis clinics for breast cancer.

[Read more ▶](#)



## India

### **Nearing 45,000 wind turbine blades produced**

In 2021, LM Wind Power, a GE Renewable Energy business, announced it had produced its 44,444th wind turbine blade at its manufacturing sites in India. LM Wind Power's operations in India began in 1994 with the production of 13.4-meter blades. Today, driven by innovation and built with passion, the length of the blades produced exceeds 80 meters.

[Read more ▶](#)



## FORWARD-LOOKING STATEMENTS

This document contains “forward-looking statements”—that is, statements related to future events that by their nature address matters that are, to different degrees, uncertain. For details on the uncertainties that may cause our actual future results to be materially different than those expressed in our forward-looking statements, see <https://www.ge.com/investor-relations/important-forward-looking-statement-information>, as well as our annual reports on Form 10-K and quarterly reports on Form 10-Q. We do not undertake to update our forward-looking statements.

## NON-GAAP FINANCIAL MEASURES

In this document, we sometimes use information derived from consolidated financial data but not presented in our financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP). Certain of these data are considered “non-GAAP financial measures” under the U.S. Securities and Exchange Commission rules. These non-GAAP financial measures supplement our GAAP disclosures and should not be considered an alternative to the GAAP measure. The reasons we use these non-GAAP financial measures and the reconciliations to their most directly comparable GAAP financial measures are included in our annual reports on Form 10-K, our quarterly reports on Form 10-Q and our earnings releases.

## COVER

*Pictured: Aviation's Sheena Walker, Evendale, Ohio; Healthcare's Bryan Smith, Arkansas; Gas Power's Reggie Brewster, Greenville, South Carolina*





## *Dear Fellow Stakeholders,*

Throughout our 130-year history, GE has demonstrated a larger purpose of lifting up the quality of life for people around the globe. Our approximately 168,000<sup>1</sup> employees work with customers, partners, communities, and governments in over 175 countries to deploy and innovate technology to solve the world's most pressing sustainability challenges across energy, health, and flight. Every day, our people rise to the challenge of building a world that works, in service of a more connected, healthier, and more sustainable future.

---

In year three of the COVID-19 pandemic, it is clear that global recovery – both economic and societal – remains uneven. Supply chain constraints continue to challenge businesses, government budget shortfalls hinder efforts to provide essential services, and millions of people around the world have faced significant disruption to their education and employment. Throughout 2021, our GE teams continued to assist healthcare providers, partners, communities, and patients around the world to address the ongoing health crisis, and we worked with local organizations in some of the hardest-hit communities to respond to humanitarian challenges.

The devastating war in Ukraine is no different, and the GE team stands proudly with the people of Ukraine. Our number one priority has been the safety of our people in the region, and we have acted diligently both to relocate those in harm's way and support our Ukrainian employees working elsewhere in Europe. We have donated \$4 million in medical equipment to those affected along with \$500,000 for international aid groups to support refugees. I'm especially inspired by the GE employees who have opened their homes to Ukrainian refugees and volunteered their time to help with other refugee efforts. In addition, we have suspended all operations in Russia with the exception of providing essential medical equipment and supporting existing power services to people in the region.

<sup>1</sup> Based on full-time equivalent, active employees as of December 31, 2021.

## The shape of things to come

We are taking steps today to further strengthen GE's ability to lead on some of the defining trends of our time—driving decarbonization through the energy transition, enabling precision health, and creating a smarter and more efficient future of flight. In November 2021, we announced plans to form three independent, investment-grade companies that will be better positioned for long-term growth and improved service to customers, employees, and communities. We plan to spin off Healthcare first in early 2023, combine Renewable Energy, Power, and Digital into one business to launch as an independent public company a year later, thus creating our third company focused on Aviation.

As we look ahead to forming three industry leaders with sustainability at their core, these strong independent businesses will better leverage our innovation muscles, technology expertise, leadership, and global reach to build a world that works for everyone.

### ENERGY TRANSITION

As a company whose equipment helps generate one-third of the world's electricity, we have a responsibility to lead the industry's decarbonization efforts while solving the energy "trilemma" of affordable, reliable, and sustainable electricity, particularly for the more than 750 million people without access. Our energy businesses provide powerful, integrated solutions with some of the most innovative onshore and offshore wind turbines, most efficient gas turbines, as well as advanced technology to modernize and digitize electrical grids. For example, our powerful Haliade-X offshore wind turbine prototype in Rotterdam began operating at 14 MW. One Haliade-X 14 MW turbine can generate up to 74 GWh of gross annual energy production, saving up to 52,000 metric tons of CO<sub>2</sub>, which is the equivalent of the emissions generated by 11,000 vehicles\* in one year. We have over 7 GW of Haliade-X commitments worldwide.

We believe in the important role of building the breakthrough technologies the world will need in the future, including low- and zero-carbon fuels like hydrogen for new and existing gas plants, carbon capture, utilization, and sequestration (CCUS), offshore wind superconducting generators, and small modular nuclear reactors (SMRs). For example, we are working with customers to construct and update power plants in the U.S., Australia, and China to run on blends of hydrogen and natural gas, and to develop front-end engineering design studies for CCUS solutions in the U.S. and U.K., which can significantly reduce CO<sub>2</sub> emissions from power generation.

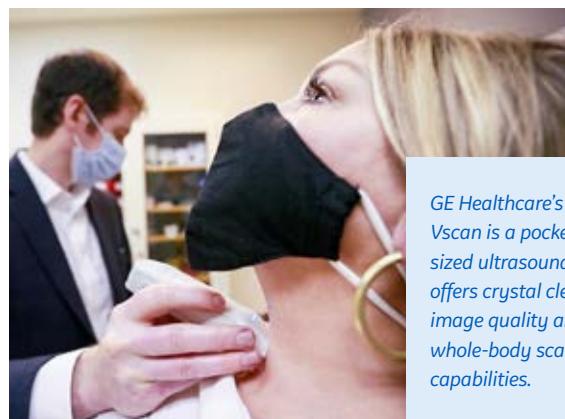


GE's Haliade-X, the only independently certified 12+ MW offshore wind turbine today.

### PRECISION HEALTH

Enabling precision health will require integrated, efficient, and highly personalized care while improving access, particularly to the half of the world's population that is underserved. In Healthcare, we are developing innovative new technology that will further personalize and streamline the entire healthcare experience, from diagnosis to

treatment and through recovery. For example, Healthcare launched the Vscan Air handheld wireless color ultrasound scanner that increases access to innovative care—including rural areas where such technology may not otherwise exist. With 30,000 units impacting the care of more than 50 million patients worldwide, our Vscan Family technologies help doctors deliver better care to more people. To strengthen the healthcare system's ability to manage the COVID-19 pandemic, we established a statewide system in Oregon powered by artificial intelligence that gives clinicians near real-time information about intensive care unit (ICU) capacity, acute hospital beds, and emergency department wait times. As a result, we are reducing administrative burdens on hospital resources and helping improve both patient care and prevent staff burnout. To date, 95% of the state's beds are live in the system.



GE Healthcare's Vscan is a pocket-sized ultrasound that offers crystal clear image quality and whole-body scanning capabilities.

### FUTURE OF FLIGHT

Innovations that improve fuel efficiency are defining the future of flight, and Aviation is helping the industry make meaningful progress toward its goal of net zero carbon emissions by 2050. GE Aviation is unique in the industry for the scale and ambition it is bringing to confront this problem, as we pursue solutions across Sustainable Aviation Fuel (SAF) as well as hybrid electric and hydrogen-powered flight. Today, all GE and partner engines are able to operate on approved SAF, which could lower lifecycle carbon emissions by up to 80 percent compared to petroleum-based fuels. GE Aviation, together with GE Research, is advancing commercial hybrid electric propulsion systems through key partnerships with ARPA-E and NASA. Additionally, Airbus and CFM International\* are collaborating on tests of a modified GE Passport engine fueled by hydrogen. We are also innovating the next generation of aircraft engines. CFM launched the Revolutionary Innovation for Sustainable Engines (RISE) program to demonstrate advanced technologies, with ground and flight tests expected in the middle of this decade. This program could ultimately lead to engines that would use 20 percent less fuel and reduce CO<sub>2</sub> emissions by 20 percent more than the most efficient jet engines built today.



CFM RISE Program goals include reducing fuel consumption and CO<sub>2</sub> emissions by more than 20% compared to today's most efficient engines.

\* According to wind conditions on a typical German North Sea site.

## GE'S GLOBAL REACH

We have equipped  
**90%**  
of the world's power  
transmission utilities  
with our technology

Our equipment serves  
**1B+**  
patients per year

Every  
**2 seconds**  
a GE or partner\*  
powered aircraft  
takes off



## Driving progress on climate

In 2020, we set a new goal to achieve carbon neutrality within our own operations (Scope 1 and 2 emissions) by 2030. As described in this report, to achieve this goal, our businesses are making operational investments in energy efficiency, reducing emissions from the grid through smart power sourcing, and using lean practices to eliminate energy waste. For example, our Gas Power team held a "Carbon and Energy Savings Kaizen Week" earlier this year across 21 sites focused on reducing energy consumption that identified an average savings of seven percent energy usage per site.

In 2021, we articulated GE's ambition to be a net zero company by 2050, including not just GE's own operations, but also the Scope 3 emissions associated with the use of our sold products. In this report, we provide more details about the path we see to achieving this ambition and connect the dots between our historic progress to reduce emissions, delivering state of the art technology this decade, and innovating the breakthrough technologies for tomorrow with our net zero ambition for energy and aviation. We know our employees, customers, suppliers, policymakers, and other stakeholders are counting on GE not only to reduce emissions, but to innovate the technology the world needs to achieve its goals. We are optimistic our efforts can drive both sustainability and business success.

Our Board of Directors oversees the execution of GE's sustainability priorities and initiatives as an integrated part of the Company's overall strategy and risk management. The Board discussed and helped shape the actions above and oversees the Company's decarbonization strategy highlighted throughout this report.

## Fostering a diverse & inclusive workplace

The only way we are going to achieve our goals at GE is to ensure that we are able to recruit, retain, and promote the best talent. Teams that include diverse backgrounds and perspectives are absolutely critical to driving the lean mindset and innovative approach that we will need to shape the energy transition, precision health, and future of flight. This is why we are proud of the progress we have made in the last year to improve GE's diversity, equity, and inclusion (DE&I), and we are excited about the opportunities ahead to launch three independent companies that will maintain our dedication.

We continued to focus our DE&I efforts on transparency. This means clearly reporting our employment diversity in new and more detailed ways so that all interested parties can easily understand where we are and hold us accountable as we progress toward where we want to be. This data has been informing the areas where we need to invest greater time and resources. Since 2020, we saw growth at the leadership level for both women globally (+1.2%) and for total U.S. race and ethnic minority (+1.7%). While men and women performing similar work are paid within one percent of each other across each GE business, we are committed to achieving 100 percent pay equity.

Finally, we were thrilled this year to appoint Brandi Thomas as our new Chief Diversity Officer (CDO), who is reporting directly to me and building on Mike Barber's work following his retirement. Brandi's leadership experience—inside and outside of GE—combined with her history of building diverse teams and deployment of lean make her the right CDO for GE. I look forward to partnering with her to accelerate our progress.

## Building a world that works

During a recent visit to our GE Renewable Energy facility in Pensacola, Florida, I had the chance to meet with employees, hear about their lean journey over the past few years, and witness how deeply we have embedded lean within our culture. Lean in its simplest terms is about focusing on the customer, eliminating waste and prioritizing relentlessly. Our lean mindset is giving us the tools and instincts to make the right decisions and necessary trade-offs.

In 2021, employees at the Pensacola facility held more than a dozen kaizen exercises seeking to find ways to make production more flexible and resilient. The work has been paying off. Just last year, lean helped the plant significantly reduce the amount of time it takes to build a turbine, decreasing the number of build hours by six percent and shortening the time spent on the production line by 12 percent. Importantly, in this example, lean is helping us deliver on our sustainability strategy while enabling customers to meet their decarbonization goals.

As we prepare for a new and defining chapter in GE's history, sustainability is deeply rooted in all of our plans and priorities. I'm incredibly proud of the ownership and initiative that our employees have displayed in this area, as well as the shared appreciation they have for doing things the right way. With this collective mindset in place, I know we can continue to expand on our 2021 accomplishments in the years ahead to build a world that works—for everyone.

**H. LAWRENCE CULP, JR.**

Chairman of the Board and Chief Executive Officer, GE  
CEO, GE Aviation



\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines.

# ESG at GE: Our focus on continuous improvement

In Part I of our 2021 Sustainability Report, GE's business leaders proudly share our efforts to succeed both for solving three of the world's most pressing sustainability challenges and for business: the energy transition to drive decarbonization, precision health that personalizes diagnoses and treatments, and a future of smarter, more efficient flight. As these pages show, this sense of purpose unites our approximately 168,000<sup>2</sup> employees every day.

Parts II and III focus on the other side of our sustainability mission: how we work to improve our impacts to our people, communities, and planet. These efforts—frequently referred to as Environment, Social and Governance (ESG)—are core both to our operations today and the businesses we plan to create.

Our approach to ESG mirrors how we run GE more broadly. We approach ESG with the same spirit of humility, transparency, and rigor as our businesses, with a focus on where we need to improve performance, address gaps, and enhance programs. The two words that most come to mind are "continuous improvement." This concept, core to lean management at the heart of GE's transformation, drives us to focus our attention on what we need to do better to succeed in our goals.

In 2021, this spirit of continuous improvement drove three ESG priorities.

First, we prioritized **progress toward the commitments and ambitions** we announced in recent years. Regarding climate change, our businesses detail their efforts to make operational improvements on our path to carbon neutrality for our Scope 1 and 2 emissions (pages 92-95). Our Aviation and Power businesses also share details regarding the Scope 3 emissions from their sold products. This includes, for the first time, a road map of innovation and technology toward the path to net zero for these critical and complex technologies in the years and decades to come (pages 35 and 53).

Second, we took a transparent look at where we could do better and **took action to close program gaps**. This includes a broad internal and external stakeholder survey for GE Company and our businesses (pages 61-63). With this feedback, we pursued efforts to articulate our policies more clearly on product safety and quality (pages 66-70), to develop a holistic strategy around product stewardship (pages 104-106), and to provide more details in this Report surrounding our governance and compliance programs (pages 73-74).

Third, following November's announcement that we plan to create three independent companies, we worked across GE to ensure that these impactful companies would **operate with sustainability at their core on day one**. We are fully seizing the opportunity in this ESG era to create new companies focused on critical global needs in energy, healthcare, and aviation, merging the legacy of GE's technology and culture and the best-in-class expertise of modern sustainability programs.

Along the way, we sought success not just as GE, but in partnership with our stakeholders. Our policy and lobbying report details our increasingly visible public engagement on furthering the goals of the Paris Agreement (page 98). With the growing focus on sustainable finance, we engaged most of our global banks to strengthen partnerships on deploying both technology and funding toward net zero goals. And we listened to stakeholders who reached out to us—our customers, investors, NGOs, regulators, and others—on their input for success in our mission, reflected in these pages.

Of these stakeholders, our employees are top of mind. A Sustainability Business Council, comprised of each GE business and Corporate function, operationalizes our ESG programs. GE's Green Team Network, our employee resource group focused on supporting and furthering GE's sustainability goals, is a constant inspiration for engagement that brings positive impact both globally and locally to over 175 countries.

On behalf of GE's employees, we are proud to share our performance and efforts. And in the spirit of continuous improvement, I invite you to reach out to me with your input as we pursue success for these ESG priorities.



**ROGER MARTELLA**

Chief Sustainability Officer

Roger Martella meets with Egypt Foreign Minister and President-designate of the 2022 UN Climate Conference (COP27) Sameh Shoukry in Cairo to discuss planning and support for COP27. With Roger are Rania Rostom and Mai Abdelhalim.



<sup>2</sup> Based on full-time equivalent, active employees as of December 31, 2021.

# Contents

- 1 CEO letter**
- 4 CSO letter**
- 6 Our Sustainability priorities**
- 7 United Nations Sustainable Development Goals**
- 11 About this report**
- 12 Key metrics: Our performance and priorities**
- 14 Responding to COVID-19 for our employees and communities**
- 16 Supporting employees and communities impacted by the war in Ukraine**

## PART I

- 17 Our innovation and technology: Sustainability at core**
- 20 Innovation timeline: Tackling the world's challenges for 130 years**
- 22 Leading the energy transition: Sustainability, reliability and affordability**
- 36 Advancing precision health: Integrated, efficient and highly personalized care**
- 42 Developing the future of flight: New technology for sustainability and efficiency**
- 54 GE Research: Innovating toward a more sustainable future**

## PART II

- 56 Our process: How GE operates to succeed in our mission**
- 57 Board oversight**
- 60 Integrated approach to strategy, risk and sustainability**
- 64 Lean principles applied to sustainability**
- 66 Product safety and quality**
- 71 Culture: Leading with integrity and *The Spirit & The Letter***
- 73 Always with unyielding integrity: GE's Ethics & Compliance program**
- 75 Privacy and cybersecurity**
- 77 Human capital: Investing in our people**
- 80 Advancing diversity and inclusion**

## PART III

- 85 Our commitments: GE respects our people, our planet and our communities**
- 86 Safety**
- 90 Environment**
- 91 Climate change**
- 112 Human rights**
- 115 Freedom of Association**
- 116 The GE Foundation**
- 124 Sustainability frameworks**

# Our Sustainability priorities

Throughout our 130-year history, GE has held a larger purpose of innovating technology to lift the quality of life for people around the globe—a core driver of sustainability. Sustainability priorities are woven into all that we do, including our business strategy, policies, leadership engagement, operating mechanisms, commitments and, ultimately, our products. From ensuring that more people have access to reliable, sustainable and affordable energy; to making precision health more accessible; to helping people thrive by staying connected to family, friends and economic opportunities, we are committed to making a substantial impact on people and the planet for the better.

As we continue to develop our plans to form three independent companies with sustainability at their core, our pursuit of the energy transition, precision health and future of flight is unwavering. Our mission to succeed in these goals is governed by core sustainability priorities built first and foremost on GE's unique culture of integrity in everything we do. As the world changes, we continuously adapt and improve our programs to best ensure we succeed in these priorities.

In the spirit of humility, we continuously engage with thought leaders and experts in various fields to learn from them and enhance our program. GE's strong foundation of integrity and lean-oriented

culture frame how we make continuous improvements for people, our communities and the planet. As our ~168,000<sup>3</sup> diverse employees share a common mission to build a world that works, we are focused together on these priorities.

The following pages highlight how our products and innovation work to build a more sustainable world and how our foundational culture of integrity, forward-looking strategy and robust sustainability programs make these priorities come to life.



<sup>3</sup> Based on full-time equivalent, active employees as of December 31, 2021.

# How our strategy and sustainability priorities align with the United Nations Sustainable Development Goals

The United Nations (UN) Sustainable Development Goals (SDGs) represent a global agenda to address the most pressing challenges facing our world, including climate action, access to healthcare and reducing inequities throughout the world. We recognize the importance and urgency of this global initiative and how GE plays a critical role in infrastructure, advancing quality of life and furthering global development sustainably. GE has been a signatory to the UN Global Compact since 2008 and we see close alignment between 11 of the 17 SDGs and our strategy and sustainability priorities:



Our product innovations work to advance precision health through integrated, efficient and highly personalized care, with a focus on increasing accessibility across the globe. We serve over 160 countries around the globe with our healthcare products and services and are leading innovation in conventional technology and digital tools, such as artificial intelligence, to make healthcare more accessible to more people globally. We recognize access to care and health data is an important social determinant of health. Products like our Vscan™ Family technologies help doctors deliver expanded care to more people, including in rural regions. And partnerships with startups like Afya Rekod help transform care delivery by giving patients in Kenya, Nigeria and South Africa an accessible record of their own health history.

The health and safety of our workforce and those doing work on our behalf across the globe is as important as any GE top priority, driving GE's system to safeguard workers and workplaces.

Through the GE Foundation, programs like Safe Surgery 2020 continue to provide access to safe, affordable surgical and anesthetic care in underserved communities like Africa and Southeast Asia.

Throughout the COVID-19 pandemic, we have maintained precautions to ensure the health and safety of our employees and prioritized the manufacturing of medical equipment needed to treat COVID-19 patients globally.

## BUSINESS AND PRIORITY ALIGNMENT

- Precision Health (GE Healthcare)
- Safety
- Lifting Our Communities

## LEARN MORE

- 14 COVID-19
- 36 Innovation—Precision Health
- 116 Our Commitments—GE Foundation

At GE, we take pride in providing a safe, diverse and respectful workplace that promotes gender equality. We are proud of our long-standing commitment to fair and competitive pay practices, and our goal remains 100% pay equity in each of our businesses. In addition, we continue to offer benefits that support a gender diverse workforce, including flexible work policies, maternity and other family benefits, and more. At the leadership level, which encompasses the top 1.5% of all active employees, we have seen growth for women globally (+1.2%) since 2020.

Similarly, a key focus of our philanthropic efforts focuses on fostering women in science, technology, engineering and math (STEM) fields and advanced engineering. For example, GE Girls—which celebrated its 10<sup>th</sup> anniversary in 2021—is designed to encourage girls to explore the world of STEM and STEM-based careers.

## BUSINESS AND PRIORITY ALIGNMENT

- Advancing Diversity and Inclusion
- Lifting Our Communities

## LEARN MORE

- 77 Human Capital—Investing in our People
  - 80 Advancing Diversity and Inclusion
  - 116 Our Commitments—GE Foundation
- GE 2021 Diversity Report

# 7

## AFFORDABLE AND CLEAN ENERGY



We are uniquely positioned to innovate the technology that will decarbonize the energy sector and promote affordable, reliable and accessible electricity around the globe. Our commitments, products, services and global reach are crucial to decarbonizing the world. We pursue this goal in three ways. First, we build diverse technology that works to keep the lights on, healthcare equipment operating and offices open around the world. Our offerings, from renewable power to gas power to the grid, enable our customers to provide energy reliably and affordably. Second, we are focused on our own use of energy by committing to be carbon neutral in our own Scope 1 and Scope 2 greenhouse gas (GHG) emissions by 2030. Third, we are pursuing our ambition to be a net zero company by 2050, which includes our own operations as well as Scope 3 emissions from the use of sold products.

### BUSINESS AND PRIORITY ALIGNMENT

- Energy Transition (GE Power, GE Renewable Energy, GE Digital)
- Environmental Stewardship

### LEARN MORE

- 22** Innovation—Energy Transition  
**91** Our Commitments—Climate Change  
**91** GE's Ambition to Be a Net Zero Company

# 8

## DECENT WORK AND ECONOMIC GROWTH



We believe that the energy, transportation and healthcare sectors can be leaders in the future of work in a changing world economy by providing for advancement, educational opportunities, mentoring and community assistance to workers. We are also part of a collaboration of companies that promotes positive change in how migrant workers are employed.

Our goal is to treat everyone affected by our businesses and value chain with fairness and dignity. We have strict prohibitions on child, prison and forced labor, as well as a long-standing program focused on our suppliers and ethical supply chain.

GE published its first Human Rights Report in 2021 to share how we run our human rights program globally and further enhance transparency to our stakeholders.

### BUSINESS AND PRIORITY ALIGNMENT

- Energy Transition (GE Power, GE Renewable Energy, GE Digital)
- Precision Health (GE Healthcare)
- Human Rights
- Future of Flight (GE Aviation)
- Safety

### LEARN MORE

- 22** Innovation—Energy Transition  
**71** The Spirit & The Letter  
**86** Safety  
**112** Our Commitments—Human Rights  
**114** Our Commitments—Ethical Supply Chain  
[GE 2021 Human Rights Report](#)

# 9

## INDUSTRY, INNOVATION AND INFRASTRUCTURE



GE, at the core, is an innovation company with significant investment in research and development that defines our history. This has led to us introducing technology that has raised the quality of life for people around the world. We innovate current and breakthrough technologies to solve the challenges of the energy transition, precision health and future of flight. GE Research recently launched the CAGE (Climate Action@GE) Lab and a new carbon capture breakout team to develop and deploy cutting-edge solutions to decarbonize the power sector and even pull carbon directly from the atmosphere itself.

Our programs for redeveloping brownfield, Superfund and other contaminated sites is helping to turn idle properties into new hubs of economic growth and job creation globally.

### BUSINESS AND PRIORITY ALIGNMENT

- Energy Transition (GE Power, GE Renewable Energy, GE Digital)
- Precision Health (GE Healthcare)
- Future of Flight (GE Aviation)
- Environmental Stewardship

### LEARN MORE

- 17** Innovation  
**54** GE Research: Innovating Toward a More Sustainable Future  
**90** Our Commitments—Environment

## 10 REDUCED INEQUALITIES



As a global company, GE works with local communities to train and employ the local labor force. We believe education is a significant driver of economic inclusion, and we have long supported multiple organizations focused on training and educating a diverse pipeline. In 2021, the GE Foundation launched Next Engineers, a new college- and career-readiness program to increase the diversity of young people in engineering globally. GE's respectful workplace policies strive for a more diverse workforce and inclusive workplace.

GE also supports an Employer Pay Principle to remove inequities and exploitation hitting the most vulnerable worker population through its membership with the Leadership Group for Responsible Recruitment.

Access to affordable and reliable healthcare is also a significant driver of reduced inequalities and economic inclusion. We strive to improve access through the work of GE Healthcare and the GE Foundation's Developing Health programs, focusing on underserved communities.

### BUSINESS AND PRIORITY ALIGNMENT

- Precision Health (GE Healthcare)
- Lifting Our Communities
- Human Rights

### LEARN MORE

**17** Innovation

**80** Diversity and Inclusion

**112** Our Commitments—Human Rights

**116** GE Foundation

## 11 SUSTAINABLE CITIES AND COMMUNITIES



As utilities, power producers, grid operators and policymakers around the world set their own decarbonization goals, our diverse offerings are part of the toolkit needed to achieve their targets. Our expansive business operations provide cities and communities with career and business opportunities that support them in achieving a more sustainable future.

Our environmental programs are designed to promote sustainability—from our robust Environment, Health and Safety (EHS) programs, to our initiatives to clean up and redevelop idle properties—we are investing for the public good in the communities where we operate.

### BUSINESS AND PRIORITY ALIGNMENT

- Energy Transition (GE Power, GE Renewable Energy, GE Digital)
- Environmental Stewardship

### LEARN MORE

**22** Innovation—Energy Transition

**56** Our Process: How GE Operates to Succeed in Our Mission

**104** Our Commitments—EHS, Environmental Stewardship

## 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



NEW

In response to increasing scarcity of resources, as well as expectations from customers, investors and regulators for producers to take heightened responsibility for the impacts of products across their full lifecycle, we have developed product stewardship and circularity goals to strengthen our efforts going forward.

Product stewardship is already a central part of GE's strategy and culture and ingrained across safety and quality processes, policies and initiatives globally. Our strategy for continuous improvement is enabled via the adoption of lean principles, which play a key role in identifying and eliminating waste. It also includes consistently reviewing and strengthening our policies and practices to improve performance and reduce product related risks across environment and safety. As today's technologies evolve, we are embracing circularity as a defining methodology for updating our product stewardship strategy, both for our own operations and that of our products, by building on the range of circular offerings and ambitions that already exist across the company.

### BUSINESS AND PRIORITY ALIGNMENT

- Product Stewardship

### LEARN MORE

**104** Our Commitments—Product Stewardship

# 13

## CLIMATE ACTION



Having met our 2020 emissions reduction targets ahead of schedule, we set a new goal to achieve carbon neutrality within our own operations (i.e., Scope 1 and 2 emissions) by 2030. Our businesses are making progress to achieve these goals, including making operational investments in energy efficiency, reducing emissions from the grid through smart power sourcing and using lean practices to eliminate energy waste. In 2021, we also set an ambition to be net zero by 2050, including in the Scope 3 emissions associated with the use of our sold products.

Our businesses function to provide energy, transportation and healthcare with lower emissions and less carbon intensity over time. We have an established history of both developing products with a reduced environmental impact and reducing our own emissions—commitments which we are accelerating for the future.

### BUSINESS AND PRIORITY ALIGNMENT

- Energy Transition (GE Power, GE Renewable Energy, GE Digital)
- Future of Flight (GE Aviation)
- Environmental Stewardship

### LEARN MORE

**22** Innovation—Energy Transition

**91** Our Commitments—Climate Change

**33, 50** Scope 3

# 16

## PEACE, JUSTICE AND STRONG INSTITUTIONS



As outlined in our Human Rights Statement of Principles, we promote respect for fundamental human rights and support the principles contained in the Universal Declaration of Human Rights. We endeavor to advance respect for fundamental human rights by leading by example in our business capacity, with our direct business partners and in the communities where we operate.

We also govern our actions internally and toward our people and communities through strong governance programs, starting with our Board, a culture of integrity, an unyielding commitment to compliance and an open reporting system.

We published our first Human Rights Report in 2022 to share how we run our human rights program globally and further enhance transparency to our stakeholders.

### BUSINESS AND PRIORITY ALIGNMENT

- Human Rights
- Culture of Integrity

### LEARN MORE

**71** Culture of Integrity

**112** Human Rights

[GE 2021 Human Rights Report](#)

# 17

## PARTNERSHIPS FOR THE GOALS



GE has longstanding partnerships with civil society groups and works directly with various governments around the world. Our operational footprint allows us to invest, expand, trade and knowledge share with our partners. Our relationships are critical to advancing our goals and priorities. Our founding membership in the Global Business Initiative on Human Rights enables us to further our human rights goals and commitments. Similarly, our membership in the Leadership Group for Responsible Recruitment, a collaboration between leading companies and expert organizations, drives positive change in the way that migrant workers are recruited. We are also an active participant in the UN Global Compact (including the Human Rights and Business Dilemmas Forum).

In 2021, we were proud to partner with government leaders, non-governmental organizations (NGOs) and more than 300 businesses to support ambitious climate reduction goals. We intend to continue growing our engagement to be a constructive voice and leader on the role of technology and innovation in addressing global challenges.

### BUSINESS AND PRIORITY ALIGNMENT

- Energy Transition (GE Power, GE Renewable Energy, GE Digital)
- Human Rights
- Environmental Stewardship

### LEARN MORE

**91** Our Commitments—Climate Change

**112** Our Commitments—Human Rights

# About this report

This report covers the environmental, social and governance (ESG) activities of GE, primarily for 2021. In certain places, it also describes the shape of things to come as we plan to become three distinct companies, with sustainability at the core, focused on important growth sectors in energy, healthcare and aviation. This report allows us an opportunity to deepen existing conversations with our stakeholders about our sustainability programs.

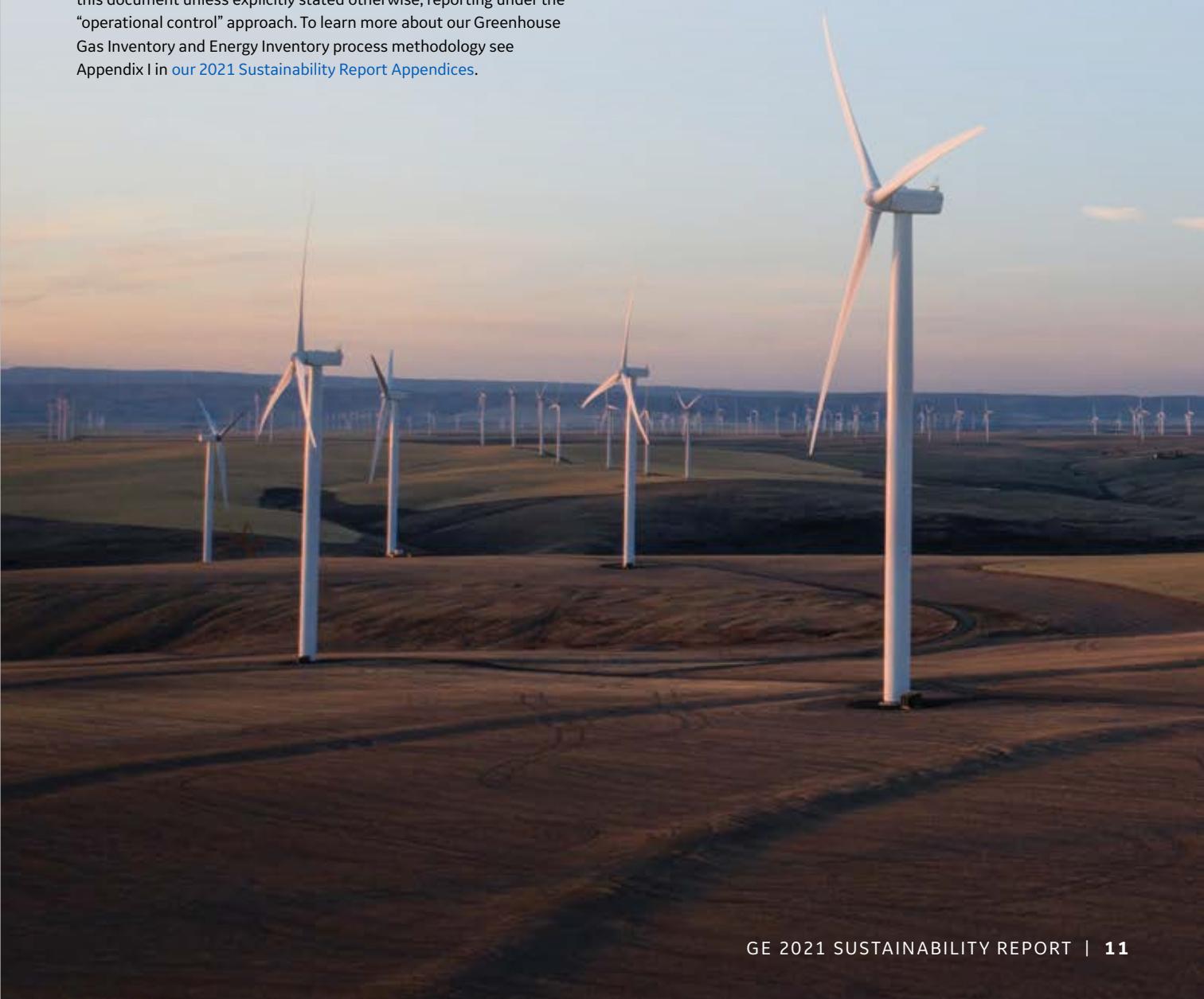
---

In addition to the UN SDGs, we have considered three key sustainability reporting frameworks as we developed this report: (1) the Task Force on Climate related Financial Disclosures (TCFD) framework, (2) industry-specific standards from the Sustainability Accounting Standards Board (SASB) and (3) the Global Reporting Initiative (GRI) Standards (Core). TCFD, SASB and GRI indices can be found [here](#).

GE's Greenhouse Gas (GHG) Inventory follows the World Resources Institute/ World Business Council for Sustainable Development (WRI/WBCSD) Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (the "Protocol"). GE utilizes the Protocol for all definitions, assumptions, and calculations discussed in this document unless explicitly stated otherwise, reporting under the "operational control" approach. To learn more about our Greenhouse Gas Inventory and Energy Inventory process methodology see Appendix I in [our 2021 Sustainability Report Appendices](#).

As described below on page 57, the GE Board of Directors (Board) exercises oversight and provides direction on GE's sustainability strategy, and the Governance & Public Affairs Committee in coordination with the Audit Committee oversees external reporting on sustainability matters, including this report. While the contents within this report have not been externally assured, both internal and independent external resources have reviewed the information and data within for quality, completeness and accuracy.

Some of the images in this report were captured before the COVID-19 pandemic and may not include face coverings and social distancing.

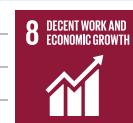


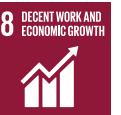
# Key metrics: Our performance and priorities

As an active participant and signatory to the UN Global Compact since 2008, we understand that we play a role in helping achieve a better future for all by creating a more sustainable world. To put this in action, we apply the UN Guiding Principles on Business and Human Rights to help frame our program and practices. Our ESG performance in 2021 and priorities for 2022 and beyond align with the identified UN Sustainable Development Goals (SDGs) to help address the identified societal challenges.

We identified focus areas where our performance in 2021 vs. 2020 warranted greater focus and provide further details where indicated.

TOPIC	BASELINE	2019	2020	2021	UN SDG
<b>Financial Performance (\$M)</b>					
Total revenues	\$90,221	\$75,833	\$74,196		
Adjusted revenues <sup>1</sup>	\$87,419	\$72,969	\$71,090		
Adjusted profit <sup>1</sup>	\$8,422	\$2,246	\$4,608		
Free cash flows <sup>1</sup>	\$2,145	\$635	\$1,889		
Total research and development <sup>2</sup>	\$4,164	\$3,820	\$3,685		
<b>Diversity and Inclusion<sup>3</sup> (pages 80-84)</b>					
<b>GE U.S. Workforce, all employees</b>					
Total Race & Ethnic Minority <sup>4</sup>	24.1%	24.2%			
Asian	8.7%	8.5%			
Black/African American	6.8%	6.7%			
Hispanic/Latinx	6.5%	6.8%			
American Indian/Alaskan Native	0.3%	0.3%			
Native Hawaiian/Pacific Islander	0.2%	0.1%			
Multiracial	1.6%	1.7%			
Disability <sup>5</sup>		3.7%			
Veteran Status <sup>5</sup>		10.1%			
<b>Global Female Representation per Category</b>					
Female representation, all employees	21.9%	22.3%			
Female representation, professional employees <sup>6</sup>	26.2%	26.5%			
Female representation in leadership <sup>7</sup>	26.0%	27.2%			
<b>Human Rights: Supplier Responsibility Program<sup>8</sup> (pages 112-114)</b>					
Total Global Audits <sup>9,10</sup>	1,286	1,115			
Total Suppliers Approved <sup>11</sup>	1,039	966			
New Suppliers	433	220			
Existing Suppliers	553	726			
Supplier From Acquisition	53	20			
Total Suppliers Rejected <sup>11</sup>	71	26			
New Suppliers	62	13			
Existing Suppliers	8	13			
Supplier from Acquisition	1	0			
Total Findings	7,348	6,031			
<b>Percentage of Findings per Category:</b>					
Health & Safety	29%	31%			
Environment	31%	31%			
Emergency Preparedness	21%	20%			
Human Rights & Labor	16%	14%			
Dormitory Standards	<1%	<1%			
Conflict Minerals	2%	1%			
Security / Other <sup>12</sup>	<1%	3%			
<b>Audits per Region:</b>					
China	41%	38%			
India	28%	27%			
North and South America	13%	18%			
Europe, Middle East & Africa	9%	8%			
Rest of Asia	9%	10%			



TOPIC	BASELINE	2019	2020	2021	UN SDG
<b>Safety<sup>13</sup> (pages 86-89)</b>					
Injury & Illness Total Recordable Rate <sup>14,16</sup>	0.60	0.53	0.60		 <b>3</b> GOOD HEALTH AND WELL-BEING
Days Away From Work Incident Rate <sup>15,16</sup>	0.28	0.29	0.32		 <b>8</b> DECENT WORK AND ECONOMIC GROWTH
Fatalities - Employees (Count) <sup>17</sup>	3	3	0		
Fatalities - Contractor Workers (Count) <sup>18</sup>	2	4	4		
<b>Environmental Stewardship<sup>13</sup> (pages 33-35, 50-53, 90-95, 107)</b>					
<b>Environmental Performance</b>					
ISO 14001 sites	107	97	111		 <b>7</b> AFFORDABLE AND CLEAN ENERGY
Global Penalties Paid (in \$ thousands)	25	25	63		 <b>9</b> INDUSTRY INNOVATION AND INFRASTRUCTURE
Spills & Releases (Count) <sup>19</sup>	31	24	27		
Air Exceedances (Count)	1	10	1		
Wastewater Exceedances (Count) <sup>20</sup>	17	11	35		
<b>Climate Change and Energy<sup>21</sup></b>					
GE Operational GHG Emissions (million metric tons of CO <sub>2</sub> equivalent) (market based) <sup>22</sup>	2.29	2.39	1.90	1.81	 <b>11</b> SUSTAINABLE CITIES AND COMMUNITIES
Scope 1 Emissions (million metric tons of CO <sub>2</sub> equivalent)	1.00	0.73	0.74		 <b>13</b> CLIMATE ACTION
Scope 2 Emissions (million metric tons of CO <sub>2</sub> equivalent) (market based)	1.39	1.16	1.07		
Direct SF6 Emissions (thousand metric tons CO <sub>2</sub> equivalent)	164	138	131		
Scope 3 net emissions from sold products (million metric tons of CO <sub>2</sub> ) (net, new units, absolute)					
GE Aviation			28		
GE Power			477		
GE Operational Energy Use (million GJ) <sup>21</sup>	26.8	27.1	21.1	21.5	
Total Electricity (MWh)	3,420,000	3,040,000	3,030,000		
Renewable Energy Used (MWh)	31,800	53,000	63,100		
<b>Water</b>					
Total Freshwater Use (billions of gallons)	4.93	5.12	4.93		
Once-Through Cooling Water (billions of gallons)	1.64	1.85	1.69		
<b>Lifting Our Communities (pages 116-123) (\$M)</b>					
GE Company Contributions via GE Businesses and GE Foundation	\$55.4	\$44.9	\$34.9		 <b>3</b> GOOD HEALTH AND WELL-BEING
Employee and Retiree Contributions	\$24.6	\$16.8	\$9.4		 <b>5</b> GENDER EQUALITY
Total GE "Family" Giving	\$80.0	\$61.7	\$44.3		
Total Contributions as a Percentage of GE Revenue	0.06%	0.08%	0.06%		 <b>10</b> REDUCED INEQUALITIES

<sup>1</sup> Non-GAAP Financial Measure.

<sup>2</sup> GE, customer and partner funded.

<sup>3</sup> Data representative of GE's workforce as of December 31, 2021, extracted in January 2022.

<sup>4</sup> System exports show percentages out to several decimal points. Due to this precision, totals may not sum due to rounding differences.

<sup>5</sup> 2021 first year reported.

<sup>6</sup> Professional accounts for all active non-production employees, excluding leadership.

<sup>7</sup> Leadership encompasses the top 1.5 percent of all active employees.

<sup>8</sup> Beginning with the 2020 metric year, our Supply Chain metrics reflect changes and improvements in GE's Supplier Responsibility Governance (SRG) program.

2019 metrics do not represent today's Supplier Responsibility Governance program and are not calculated.

<sup>9</sup> The number of Total Global Audits is greater than total suppliers reviewed as some suppliers were audited twice (i.e., desktop audit due to COVID-19 restrictions followed by on-site visits) or there were return visits to confirm corrective actions were completed.

<sup>10</sup> For more context on performance, see page 114.

<sup>11</sup> New metric reported in 2020 from Supplier Responsibility Governance program and audits.

<sup>12</sup> "Other" includes findings not allocated to a category or relate to quality findings identified during Supplier Responsibility Governance audit.

<sup>13</sup> Due to the changing nature of GE's enterprise, figures are periodically updated to reflect changes in scope and as additional information becomes available. For instance, acquired businesses may not have aligned data for the same time periods.

<sup>14</sup> Number of injury and illness cases per risk population YTD, based on 100 employees working 200,000 hours annually, as measured against OSHA recordability criteria.

<sup>15</sup> Days Away From Work Incident Rate uses the OSHA calculation for days-away-from-work cases (transfer or restricted cases are excluded), based on 100 employees working 200,000 hours annually.

<sup>16</sup> For more context on performance, see page 86.

<sup>17</sup> GE employees, leased workers, wholly owned affiliate employees, and majority-owned joint-venture employees.

<sup>18</sup> Workers under GE EHS coordination which may include GE-hired contract workers, consortium partner workers, and sub-contractors.

<sup>19</sup> For more context on performance, see page 90.

<sup>20</sup> For more context on performance, see page 90.

<sup>21</sup> Per the WRI/WBCSD GHG Protocol: GE adjusts its 2019 base year GHG and energy data annually to reflect changes in structure or calculation methodology, improvements in accuracy of emission factors or activity data, and discovery of error. Interim years are not adjusted except upon discovery of significant error. 2020 operational GHG emissions, Scope 1 emissions, Scope 2 emissions, operational energy, and total electricity were recast to reflect corrections identified from audit.

<sup>22</sup> Scope 1 & 2 emissions may not sum to total due to rounding.

# Responding to COVID-19 for our employees and communities



GE Healthcare employees in Beijing celebrate the delivery of a Maxima CT to a hospital in Wuhan. Their sign in English: "Support to fight COVID-19. Go Wuhan!"

The second year of the COVID-19 pandemic positioned GE teams to rise to the challenge of putting safety first while continuing to deliver for our customers. As they have since 2020, GE employees continued to serve on the front lines to ensure hospitals and medical equipment, electricity and critical infrastructure kept operating.

Throughout 2021, GE leadership prioritized protecting the health and safety of our employees while supporting our communities. The GE Board of Directors and management teams maintained their engagement to keep our workplaces around the world safe, while complying with local governments in their efforts to control the spread of COVID-19.

In 2021, three key themes governed GE's strategy for managing COVID-19: promoting and enabling access to vaccines where possible, ensuring our COVID-19 safety protocols remained compliant, and adapting our protocols in response to the latest science and understanding about the virus. These themes shaped our efforts to navigate the unknowns of the pandemic, while ensuring the safety of our employees.

Our enterprise-wide, cross-functional internal COVID-19 Task Force continued to work in 2021 to protect the health and safety of our employees globally while maintaining business continuity. Through both our safety and regulatory compliance efforts, we engaged with our employees, and for those represented by labor unions, with their leadership, as a key part of our worker safety response. These ongoing initiatives – in addition to those listed below – are some of the specific ways we supported the safety, health and wellness of our employees in response to the COVID-19 pandemic in 2021:

- We partnered with local communities to enable vaccination for GE employees, as well as members of the community, where vaccine supply was available and permitted by local regulations.
- We introduced a voluntary Vaccination Tracking Website, where GE employees could submit their vaccination status, promoting global site safety efforts.

- We continued to leverage our multi-level GE Site Safety Roadmap introduced in 2020, aligned with global regulatory guidance to ensure compliance and the health and wellness of individuals working at our facilities.
- We continued to issue frequent communications about safety practices and enhance safety protocols as local regulations changed.
- We continued to promote our open ombuds reporting channel for worker concerns related to compliance with COVID-19 safety protocols.
- We continued to engage in educational dialogue with our people through our Chief Human Resources Officer and Chief Medical Officer, covering a variety of topics including vaccinations, face coverings and other COVID-19 related developments.

## GE FOUNDATION AND GE VOLUNTEERS PROVIDE RELIEF DURING COVID-19 OUTBREAK

As India grappled with the COVID-19 outbreak in 2021, the GE Foundation partnered with [United Way Bengaluru](#) and [Americares](#). The funding supported the build-out of 60 intensive treatment units at St. John's Hospital in Bengaluru and funded 100 oxygen concentrators for hospitals in need across Vadodara, Noida, Pune, Hyderabad and Chennai. In addition, since 2020, the GE Volunteers organization provided more than 5,000 Personal Protective Equipment (PPE) to frontline workers, including primary healthcare workers, hospital staff and police; distributed more than 3,500 hygiene kits for use in primary health care centers across the country; and prepared and distributed food kits to more than 3,500 migrant worker families who were homebound.

## **GE DIGITAL WORKS TO HELP PFIZER PRODUCE VACCINES**

GE Digital was proud to play a small role helping our longtime customer, Pfizer, in its historic effort to automate production of the Pfizer BioNTech COVID-19 vaccine at its Kalamazoo, Michigan plant.

The company chose iFIX HMI/SCADA and Proficiency Plant Applications to help accelerate the validation process for standardized objects, such as valves and tanks, which helped accelerate FDA approval. During this sterile injectable process, raw materials come into the plant from different facilities and are mixed, assembled, packaged and shipped. From material handling and mixing, to quality assurance and electronic signature, our solutions are being used across all phases of manufacturing this vaccine.

In Ireland, the Pfizer facility in Grange Castle, managed by our partner, Novotek, is also a user of iFIX HMI/SCADA and Proficy Historian. This facility conducts quality tests on the batches of vaccine being used in Europe.

The Pfizer vaccine marked a major milestone in the fight against COVID-19. GE is proud to be part of this, along with our customer and partners. It is an example of how we put industrial data to work and help our customers help the world.



## **GE AVIATION ENGINEER TAKES VOLUNTEERING DIGITAL DURING COVID**

Subscribing to the belief that “you can’t be what you can’t see,” Shawn Newman, a GE Aviation engineer, has volunteered as a mentor and tutor for more than 15 years at Lincoln Heights Elementary School in Cincinnati, Ohio.

With COVID-19 restricting in-person visits, Shawn vowed to continue his efforts by co-leading a unique virtual experience where he talked about aviation and discussed his career as an engineer to help spark the same interest in students. Shawn says the enthusiasm he saw from the kids reminds him how he felt when he discovered his passion for aviation and reinforces why the work he does in the community is so important to the future of these children.

Thousands of GE Aviation volunteers give back to their communities around the world. And with COVID-19 restrictions in place, this group got creative. They logged more than 25,000 hours of online mentoring, tutoring and introducing students to STEM (science, technology, engineering and mathematics) through remote programs.

## **GE SCIENTISTS DEVELOPING TECHNOLOGY TO ADD COVID-19 VIRUS DETECTOR TO MOBILE DEVICES**

As part of a project funded by the National Institutes of Health (NIH), GE Research's sensing team [is developing miniature sensors that can detect the presence of the COVID-19 virus](#) on an array of different surfaces.

“One of the first lines of defense against any virus is avoiding exposure, which is easier said than done when you can’t see it,” said Radislav Potyrailo, a principal scientist at GE Research and principal investigator on the NIH project. “Through our project with the NIH, we are developing a sensor small enough to embed in a mobile device that could detect the presence of the COVID-19 virus.”

These mini-sensors could also potentially be integrated into other types of surfaces such as fingerprint scanners, computer keyboards and wall-mounted sensors. The team is drawing from years of development and commercial success with other physical, environmental, gas and biosensors for industrial monitoring.

## **GE GAS POWER AND FIELDCORE TEAMS HELPING TO KEEP FAMILIES FED IN ATLANTA**

GE employees are helping to keep families fed in Atlanta, Georgia. The pandemic has no doubt hit some areas harder than others. Brumby Elementary School in suburban Atlanta is home to more than 900 students in kindergarten to fifth grade. Pre-COVID, the school’s food pantry served 50 to 60 families on a weekly basis. Today, it serves many more. Local teams from across GE volunteer weekly and serve groceries to more than 350 families in need. The food is donated by the YMCA and the Atlanta Community Food Bank.

“As a volunteer, I find it very rewarding to work alongside my colleagues to give back to the community and make a difference in a very meaningful way,” says Steve Hartman, Vice President, Installed Base Decarbonization, GE Gas Power.

# Supporting employees and communities impacted by the war in Ukraine



*GE Healthcare employees prepare life-saving medical equipment for shipment to Ukraine.*

The strength and courage of the Ukrainian people are an inspiration to the world. As a GE team, we stand with our employees, customers and all those impacted, and took steps early in the crisis to help by donating **\$4.5 million in medical equipment and humanitarian support.**

GE Healthcare donated \$4 million in healthcare equipment. With support from our long-time partner, Assist International, the equipment was delivered to the Ukrainian Ministry of Health, and included handheld ultrasound devices, mobile X-ray units, ventilators and patient monitors. We appreciate the amazing teamwork and collaboration of our GE Healthcare employees to deliver this critical equipment so quickly.

Additionally, the GE Foundation, an independent charitable organization funded by GE, made a \$500,000 donation to two organizations to bring immediate and long-term support to refugees and relief organizations on the ground. This donation included \$400,000 to the International Rescue Committee (IRC) to provide immediate relief to refugees in need of emergency cash to meet basic needs, additional support for vulnerable displaced women and children, and the delivery of life-saving information on local refugee rights and services. We also committed \$100,000 to Airlink, a rapid-response

humanitarian relief organization that connects airlines and pre-qualified nonprofits to help communities in crisis by rapidly deploying vital supplies. The funds provided aid to an estimated 100,000-250,000 displaced families in Poland, Moldova, Romania and Hungary.

Additionally, the GE Foundation's Matching Gifts Program enabled employees to contribute to relief efforts, doubling their support by matching their donations 1-to-1. As of the end of May 2022, these funds increased our impact by an estimated \$380,000, including employee donations and matching gifts.

We are hopeful the donation of medical equipment from GE Healthcare continues to help those most in need of care and we are honored to support the IRC and Airlink as they work to provide relief to Ukrainian civilians who have been forced to flee their homes.

## GE EMPLOYEES ACROSS EUROPE SUPPORT UKRAINIAN REFUGEES

As waves of refugees have fled across the Polish border and into the Czech Republic, GE Aviation employees in the two countries have stepped up to provide aid. They are spending hours as teams through GE Volunteers, assembling care packages of necessities like shampoo, hand sanitizer and diapers, as well as thousands of meals of fruit, hot soup sandwiches, and water—and delivering them to railway stations. Others have taken their support a step further and are personally helping by picking up refugees at border crossings and driving them to destinations around the country or putting people up in their own homes.

At GE Steam Power, our local team in Poland is helping to support the unprecedented situation at the Ukraine borders. GE Volunteers in Poland and Romania are helping refugees with immediate basic needs like food, clothes and toiletries. The team also supported a local charity to help expand its impact working with refugees on the ground.

At LM Wind Power, a GE Renewable Energy business, employees at the blade manufacturing plant in Poland have been working together to collect essential goods for Ukrainian refugees, and in an amazing show of solidarity, hosted more than 150 refugees in their homes. In addition, the local management team is making special efforts to fill open roles with Ukrainian employees.

In Hungary, GE's employee resource groups hosted a donation drive, collecting basic medicines, vitamins, blankets, thermometers, baby supplies, toys and clothes to provide immediate help at the Ukraine border and in Budapest. They also purchased first aid products and helped transport Ukrainian refugees to safety.

The support of GE employees to the on-going humanitarian situation is impressive and demonstrates the incredible generosity of our people. GE employees also made personal donations to local charities, many of which were doubled through the GE Foundation's Matching Gifts Program. But most importantly, it's an outpouring of aid that has come straight from the heart.

# Sustainability at core

For 130 years, people have counted on GE to “find out what the world needs... and try to invent it,” as our founder Thomas Edison famously said. This still rings true at GE.

From the first commercially viable lightbulb to the Haliade-X, the only independently certified 12+ MW offshore wind turbine today, GE has pioneered technologies spurring world-transforming changes and improving the lives of billions.

As we look ahead to forming three independent companies with sustainability at their core, our commitment to innovation remains our North Star. Our employees serve customers and communities in more than 175 countries and are passionate about solving the world’s most pressing sustainability challenges in energy, health and flight.

This is the impact of GE—every day our people rise to the challenge of building a world that works, in service of a more connected, healthier and more sustainable future.



# Our focus is on innovating solutions to three of the world's most pressing challenges

## Energy transition



Climate change is an urgent global priority. At the same time, energy demand is increasing and more than 750 million people are without access to reliable power. As a company whose equipment helps generate one-third of the world's electricity, we have a responsibility to lead the industry's decarbonization efforts and meet the rising global demand for affordable, reliable and sustainable energy.

GE is committed to building and delivering state-of-the-art equipment to reduce emissions today while growing access to reliable, sustainable and affordable electricity for everyone. Our energy businesses provide powerful, integrated solutions with the most innovative onshore and offshore wind turbines, most efficient gas turbines, as well as advanced technology to modernize and digitize electrical grids. Beyond delivering technology the world needs today, we are equally focused on the important role of building the breakthrough technologies the world will need in the future, including carbon capture, utilization and sequestration (CCUS); low and zero carbon fuels like hydrogen for new and existing gas plants; and small modular nuclear reactors.



**RENEWABLE ENERGY**

**SHARED MISSION** Our portfolio of energy businesses, including GE Power, GE Renewable Energy and GE Digital have a shared mission of making power sources more sustainable, reliable and affordable everywhere in the world.

**UNITS** Onshore Wind, Offshore Wind, Grid Solutions Equipment and Services, Hydro Solutions, Hybrids Solutions

**INSTALLED BASE** ~50,000 wind turbines and 7,500+ hydro units equipped with GE technology, representing 400+ GW of renewable energy

**EMPLOYEES** ~38,000

**2021 REVENUE** \$15,697

**2021 R&D<sup>1</sup>** \$561

**PRODUCT SPOTLIGHT** The first utility-scale offshore wind installation in the U.S., Vineyard Wind 1, will be powered by GE's Haliade-X turbines, the only 12+ MW offshore wind turbine that has been operating for over two years; GE's newest onshore wind platform, Sierra, offers the next generation innovation, ease of installation and reliability; GE's state-of-the-art high voltage direct current (HVDC) transmission system will supply one of the world's largest offshore wind farm projects off the coast of England.

Dollars in millions unless otherwise noted.



**POWER**

**UNITS** Gas Power, Steam Power, Power Conversion, Nuclear and other

**INSTALLED BASE** 7,000+ gas turbines, representing 800+ GW of gas power; 41 nuclear power plants worldwide representing 40 GW carbon-free power generation; over 1,200 hybrid and electric ship power systems

**EMPLOYEES** ~32,000

**2021 REVENUE** \$16,903

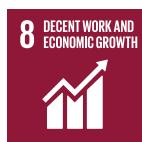
**2021 R&D<sup>1</sup>** \$329

**PRODUCT SPOTLIGHTS** World-record setting HA and Aeroderivative turbines are the most efficient gas turbines and key force multiplier to accelerate decarbonization; leading Arabelle™ steam turbines in 53 GW of existing nuclear fleet generate 2% more power output with 99.96% reliability; developing advanced nuclear technology like BWRX-300 and Natrium™<sup>2</sup> will provide carbon-free electricity during operation, dependable base load and flexible capacity.

<sup>1</sup> GE, customer and partner funded.

<sup>2</sup> Jointly developed with TerraPower.

## Precision health



Precision health is about enabling integrated, efficient, and highly personalized care to address critical challenges that affect patients and healthcare providers. We are merging imaging, diagnostics and genomic data with data science to help build an intelligence-based healthcare system. This can enable both greater productivity and greater access to healthcare, especially for half of the world's population who lack access to care.

For example, GE Healthcare has equipped the first public sector comprehensive Integrated Molecular Imaging Centre for the diagnosis and treatment of cancer in Sub Saharan Africa. More than 600 patients who otherwise would not have had access to PET/CT scans have already been seen at the Centre.

In addition, GE Healthcare partnered with SOPHiA GENETICS to integrate genomic data and artificial intelligence (AI) into oncology applications and make better use of existing data. The goal is to incorporate AI analysis into the oncology workflow and deliver more personalized insights to improve treatment options for cancer patients. By bringing together clinical medicine with advanced analytics and AI, we are helping to deliver on the promise of precision health and improve efficiency and access for patients, healthcare providers, health systems and researchers around the world.

### HEALTHCARE



**MISSION** Leading innovator enabling personalized and precision health through integrated clinical care, connected technology and data across the patient journey. Improving lives in the moments that matter, for both patient and caregiver.

**UNITS** Healthcare Systems, Pharmaceutical Diagnostics

**INSTALLED BASE** 4M+ healthcare installations

**PATIENTS** 1B+ patients served annually

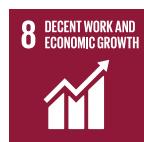
**EMPLOYEES** ~48,000

**2021 REVENUE** \$17,725

**2021 R&D** \$847

**PRODUCT SPOTLIGHTS** Edison™ Digital Health Platform is a vendor-agnostic hosting and data aggregation platform in development with an integrated AI engine, enabling healthcare systems to effectively deploy the clinical, workflow, analytics and AI tools that support the improvement of care delivery. SIGNA Hero is a magnetic resonance (MR) system designed to be capable of lowering helium usage up to 67%. AIR Recon DL is a deep learning-based image reconstruction technology that can reduce scan time by up to 50%.

## Future of flight



GE Aviation is building a world that works for the future of flight with industry-leading technology innovation to reduce GHG emissions.

Advancements in aerodynamics, engine architecture, and materials technology for GE and CFM International\* product lines have resulted in today's aircraft engines consuming 40% less fuel and emitting 40% less CO<sub>2</sub> than engines manufactured in the 1970s and 1980s. However, we cannot be satisfied with the pace of progress from the past.

We are currently developing the next suite of engine technologies—including advanced architectures such as open fan, hybrid-electric and electric propulsion concepts, and advanced thermal management concepts—that offer the potential to achieve at least a 20% additional improvement in fuel efficiency compared to today's state of the art single-aisle aircraft engines. GE Aviation is also supporting industry initiatives to approve and adopt 100% Sustainable Aviation Fuel (SAF) and is partnering on a new flight demonstration program to test zero carbon hydrogen fuel combustion.

### AVIATION



**MISSION** Providing customers with engines, components, avionics and systems for commercial, military, business and general aviation aircraft and a global service network to support these offerings.

**UNITS** Commercial Engines and Services, Military, Systems and other

**INSTALLED BASE** ~39,400 commercial aircraft engines<sup>3</sup> and ~26,200 military aircraft engines

**EMPLOYEES** ~40,000

**2021 REVENUE** \$21,310

**2021 R&D** \$1,637

**PRODUCT SPOTLIGHTS** The world's largest and most powerful aircraft engine, the GE9X, is also the most efficient engine we have ever built on a per-pounds-of-thrust basis. The culmination of a complete renewal of our commercial engine product line, GE9X is designed to deliver up to 10% greater fuel efficiency than its predecessor, with emissions of nitrogen oxides (NOx) 55% below current regulatory requirements.

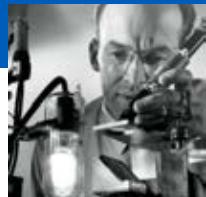
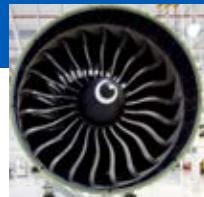
\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines.

<sup>3</sup> Includes engines made by GE Aviation and joint ventures CFM International and Engine Alliance.

## INNOVATION TIMELINE

# Tackling the world's challenges for 130 years

## Innovating technologies and redefining what's possible



**1995**

### GE90 AIRCRAFT ENGINE

GE introduces the GE90, the first jet engine to include components made of lightweight carbon fiber composites. The use of composites substantially reduces engine weight and enables higher standards for fuel burn and emissions.

**1992**

### MARS OBSERVER

GE builds the Mars Observer for NASA, which will study Martian geology and climate while mapping the planet's surface.

**1983**

### MRI

GE scientists develop the SIGNA 1.0 Magnetic Resonance Imaging (MRI) System, which produces images of "soft" tissues difficult to image by X-ray methods.

**1969**

### TECHNOLOGIES FOR FIRST MOON LANDING

GE supplies a variety of technologies for the first landing on the moon, including engineering support, test facilities and the silicone for Neil Armstrong's boots.

**1962**

### WORLD'S FIRST LED

Building on Hall's solid state laser, Nick Holonyak Jr. demonstrates the world's first light emitting diode (LED) at GE Research Niskayuna. LEDs enable solid state lighting, which uses 85% less electricity than conventional lighting.

**1957**

### FIRST U.S. LICENSED NUCLEAR REACTOR

GE reactor becomes first privately owned and operated nuclear power plant to deliver electricity to the grid in Vallecitos, California.

## Building a sustainable tomorrow



**2002**

### WIND POWER BUSINESS

GE continues its focus on sustainable energy by entering the wind power business.

**2009**

### VSCAN

Vscan, a handheld, pocket-sized ultrasound technology, helps doctors deliver expanded care to more people, including in rural regions.

**2014**

### DIGITAL GRID

GE launches Advanced Distribution Management Solutions (ADMS), providing electric utilities with a reliable and resilient distribution grid while enabling more renewable energy.

### g<sup>3</sup> INSULATING & SWITCHING GAS

An environmentally preferable alternative to sulfur hexafluoride (SF<sub>6</sub>) used in high voltage grid equipment, g<sup>3</sup> provides a 99% reduction in global warming potential.

**2015**

### HA TURBINE

GE introduces HA, the world's largest and most efficient heavy duty gas turbine. The turbine offers industry-leading operational flexibility and builds upon the legacy of jet engine technology pioneered at GE Research during the early 20<sup>th</sup> century.

**2016**

### CLINICAL COMMAND CENTER

GE launches the first AI-powered, real-time optimization system at The Johns Hopkins Hospital. In 2020, the system's efficiency benefit at Tampa General Hospital was equivalent to taking 3,900 cars off the road.

## Enabling a better quality of life



**1879**

### FIRST COMMERCIALLY PRACTICAL INCANDESCENT LAMP

Edison invents the first commercially practical incandescent lamp.

**1896**

### X-RAY MACHINE

A rich tradition of GE breakthroughs in medical imaging begins with the demonstration of stereoscopic Roentgen pictures.

**1910**

### FIRST ELECTRIC RANGE

GE improves life in the kitchen with the first electric range.

**1927**

### FIRST HOME TELEVISION RECEPTION

The first home television reception takes place in Schenectady, New York, with a signal from GE's radio broadcast station.

**1942**

### FIRST U.S. JET ENGINE, THE I-A

GE builds the first U.S. jet engine, the I-A, which is used to power America's first successful jet aircraft for military use, the Bell XP-59 Airacomet.

**2016**

### CFM LEAP ENGINE

The CFM LEAP\* engine application for single-aisle aircraft entered service in 2016 with the first Ceramic Matrix Composites and 3-D printed parts in the hot section of a commercial aircraft engine. The engine's unique design and materials make it 15% more fuel-efficient than its predecessor. It is also quieter and produces fewer emissions.

**2018**

### LEADING NUCLEAR REDESIGN

GE Hitachi Nuclear Energy is selected by the U.S. Department of Energy to lead a team simplifying nuclear reactor design, reducing plant construction costs and lowering operations and maintenance costs for the BWRX-300, a 300 MWe small modular reactor.

**2019**

### OFFSHORE WIND TURBINE

The first Haliade™-X wind turbine prototype is installed in Port of Rotterdam. In 2021, Haliade™-X became the industry's first 14 MW offshore wind turbine.

**2020**

### GE9X AIRCRAFT ENGINE

Certified by the U.S. Federal Aviation Administration, the GE9X includes some of GE's most advanced engine technologies. The GE9X is designed to deliver up to 10% greater fuel efficiency than its predecessor, with nitrogen oxide emissions (NOx) 55% below current regulatory requirements.

**2021**

### EDISON

Edison Digital Health Platform is a vendor-agnostic hosting and data aggregation platform in development with an integrated AI engine. It will enable hospitals and healthcare systems to effectively deploy the clinical, workflow, analytics and AI tools to support the improvement of efficiency and care delivery.

\* The LEAP engine is a product of CFM International, a 50-50 joint company between GE and Safran Aircraft Engines. LEAP is a registered trademark of CFM.

## LEADING THE ENERGY TRANSITION

# Sustainability, reliability and affordability

In our 2020 Sustainability Report, I wrote to you about the tremendous need to solve one of the world's most serious challenges—climate change—and the urgency with which GE and our customers are approaching a decade of action to reduce carbon emissions today, accelerating a path to a lower carbon future, and growing access to reliable, sustainable and affordable energy. This mission remains unchanged.

We believe the plan announced in November of forming a single company focused on innovating technology to solve the energy transition globally will allow us to support this mission with increased focus and autonomy.

We take this global responsibility seriously. The new company we plan to create will be well-positioned as an energy industry leader, as one-third of the world's current electricity is generated using GE equipment, today and tomorrow, as we work to develop the next generation of breakthrough technologies to drive deeper decarbonization. Our GE team is excited by this new opportunity to serve our energy customers and support their needs and commitments, and I am proud to lead that business as we work to spin off from GE in 2024—a business where sustainability will very much be at the core.

The challenge and opportunity of the energy transition is clear—the world must simultaneously meet rapid growth in the demand for electricity while quickly reducing the carbon emissions of the power generation system. The growth in electricity demand is expected to double through 2050 as we work to enable access for the more than 750 million people without electricity today; at the same time other industries, from cement and steelmaking, will continue to turn to increased electrification as a means to reduce their own emissions profiles. But such a move will only be effective if we decarbonize the system producing the underlying electricity itself in a way that maintains both reliable and affordable access.

As we have said before, no one technology or solution will be able to meet these mutually achievable goals. We must build and maintain a diverse generation ecosystem—inclusive of renewables, gas, nuclear and grid—to rapidly reduce emissions today while ensuring the critical electricity our world and lives depend on is available without interruption. Through our cross-business Energy Transition Steering Committee, which was established in 2020, and our Center for Decarbonization, which was launched in 2021, we have developed a cohesive strategy to address decarbonization needs using the full breadth of products and capabilities across our portfolio. Our new energy business will bring all these technologies into a single organization, while adding crucial elements including our Digital business to deliver even greater value to our customers and society at large.

This decade of action must begin with renewables—where GE has a leadership position—to deploy carbon-free generation technology as quickly and affordably as possible. Both onshore and offshore wind generation are essential technologies to reduce the carbon emissions of the power generation system and areas where GE feels confident in our technological leadership. Hydroelectric power, where space and natural resources allow for it, will also be a continued contributor of renewable energy, while we look to explore applications including pumped-storage hydroelectric power which could help deliver baseload renewable energy generation under the right conditions.



**SCOTT STRAZIK**

CEO of GE's Global Energy  
Business Portfolio

As we work to accelerate the growth of renewables, our gas turbines, the most efficient in the world, will remain essential to decarbonization by enabling the rapid transition of base load generation away from coal-fired technologies. They will also be a key enabler to increasing renewables by ensuring overall system reliability as renewable power generation grows in many markets. Beyond that, we expect gas generation will continue to play a key role as a destination technology in the energy transition through the breakthrough technologies of pre-combustion hydrogen fuel use and post-combustion carbon capture, utilization and storage.

Nuclear energy will continue to be a carbon-free power generation source that many countries and customers will rely on, and GE's small modular reactor technology will be well-positioned to meet their needs for a simpler, safer and more cost-effective reactor. In 2021, we announced our GE Hitachi Nuclear Energy business was selected by Ontario Power Generation and Synthos Green Energy to deploy BWRX-300 small modular reactors as early as 2028 in Canada and the early 2030s in Poland. Designed to promote simple and safe operating rhythms, this innovative zero-carbon technology stands to be a breakthrough contributor to the energy transition.

Investments for the grid—whether physical or in digital solutions—are imperative to ensure our transmission and distribution systems can weather the entropy of these technologies today and tomorrow.

Our Power Conversion, Grid Solutions and Digital businesses will be essential players to ensure our grid is robust and able to deliver reliable energy, while protecting our customers' assets from the increased risk vectors of cybersecurity threats, extreme weather, and new and evolving business models that threaten their operations. We believe strongly that optimization software will be a significant contributor to, and accelerator of, the energy transition.

These technologies are available to be deployed in concert to meet our customers' needs this decade, even as we continue to invest and develop the next generation of breakthrough technologies that will scale our efforts in the next two decades. Technology is imperative to meeting the challenge of climate change, but we also know that this story is fundamentally human: access to reliable, affordable, cleaner energy and decarbonization are helping to catalyze a better quality of life. We are proud of our role in the drive towards better electricity access, as we work relentlessly to improve the infrastructure for a better environment and more sustainable world and future. As the transition progresses, we are committed to reducing carbon emissions this decade, while innovating for the future as we strive for net zero by 2050. I am grateful to our team, our customers and our partners who will work with us in the coming decades to make this ambition reality.

## Our technologies today



GE's Sierra onshore wind turbine at Borderlands, NM

As a company whose equipment helps generate one-third of the world's electricity, we take seriously the efforts to lead the industry's decarbonization efforts and meet the rising global demand for affordable, reliable and sustainable energy. Our energy businesses provide powerful, integrated solutions with some of the most innovative onshore and offshore wind turbines, most efficient gas turbines, as well as advanced technology to modernize and digitize electrical grids. We strongly support the Paris Agreement commitments and other ambitious targets to reduce energy sector emissions. And we are leading by example. We are making progress to become carbon neutral in our own operations by 2030 (Scope 1 and Scope 2 emissions) and we set a further ambition for GE to be a net zero company by 2050 for the Scope 3 emissions from the use of our products. See pages 92-95 for more information on the steps we are taking.

GE's products and services are crucial to helping the world decarbonize. As utilities, power producers, grid operators and policymakers around the world set their own decarbonization goals for the power sector, GE's diverse offerings will help them achieve their targets. To that end, we are helping to reduce emissions today and driving deeper decarbonization by:

- **Deploying renewables as fast as possible:** We offer one of the broadest renewable energy portfolios and help grow capacity as rapidly as possible by continuing to bring down the cost of onshore and offshore wind energy and leveraging our offerings in battery storage and hydropower.
- **Accelerating emissions reductions with state-of-the-art gas turbines:** We look to the most efficient gas turbine technology—with strong methane controls on upstream development—as providing a solid foundation that becomes a force multiplier for building a renewable energy infrastructure and a destination technology for certain markets in the energy transition.
- **Supporting the existing global nuclear fleet:** With innovative digital solutions and technology upgrades, we are increasing carbon-free output while reducing costs.
- **Modernizing and digitizing the grid:** We modernize the physical grid to increase resiliency from the growing threats of more severe weather and cyber risks, and to integrate more variable generation from renewable and increased electricity demand. We also digitize the grid with AI-enabled software with continuous tuning of gas turbines to expand performance and lower fuel emissions. In addition, our software helps utilities and manufacturers to forecast, manage, optimize, and trade renewables and distributed energy resources coming onto the electric grid.

GE is working with customers and partners to innovate a wide-range of breakthrough technologies for a lower-carbon future, including hydrogen as a fuel, carbon capture and sequestration systems, superconducting generators for wind turbines with no rare earth materials, and small modular nuclear reactors to accelerate the energy transition.

### WE CAN ACHIEVE DEEP DECARBONIZATION WHILE STRENGTHENING POWER WE CAN SUCCEED WITH THESE MUTUALLY ACHIEVABLE GOALS

#### RAPIDLY REDUCE EMISSIONS

Drive energy sector emissions down as quickly as possible by

Accelerating renewables to the fullest, fastest extent

Utilizing gas with methane controls as a force multiplier for renewables

Innovating hydrogen and carbon capture to decarbonize gas

Developing small modular reactor and other breakthrough technologies

#### INCREASE GRID RESILIENCE

Decarbonizing energy and increasing grid resilience are mutually achievable through physical and digital solutions that

Enable more renewable deployment

Increase resilience from growing threats

Provide near term jobs, economic opportunity

GE's energy businesses work together toward meeting the world's energy demand with less carbon intensity over time.

- **GE Renewable Energy** harnesses the earth's most abundant resources—the strength of the wind, the heat of the sun and the force of water—delivering electrons to power the world's biggest economies and the most remote communities. With an innovative spirit and an entrepreneurial mindset, we engineer energy products, grid solutions and digital services that create industry-leading value for our customers around the world.
- **GE Power's** gas, steam, nuclear and power conversion units all work to create products that provide access to sustainable, reliable and affordable power. To stay competitive and profitable, today's power generators must have the agility to ramp up and down at short notice to meet ever-changing needs, while being just as ready to take advantage of low carbon renewable sources when available.
- **GE Digital** is entering a new era focused on accelerating customer transformations in energy, aviation, manufacturing and other industries. Digital technologies like software and analytics solutions are essential for accelerating the energy transition. In the power generation sector, software helps make power production more efficient with **Digital Twins** and Autonomous Tuning, thereby managing environmental impact. For grid operators, software helps with forecasting, managing, operating and **optimizing electricity on the grid**. For manufacturers, software helps **reduce the use of materials** and energy in the process of building products.



#### HALIADE™-X OFFSHORE WIND TURBINES

GE has invested more than \$400 million to develop its offshore wind turbine. In 2021, our Haliade-X prototype in the Netherlands started operating at 14 MW. With this new milestone, GE became the first industry player to operate a turbine at this power output.

[Read more ▶](#)

The ability to produce more power from a single turbine means fewer turbines need to be installed at each wind farm. The Haliade-X 14 MW will make its commercial debut at the Dogger Bank C offshore wind farm, more than 130 kilometers off the North East coast of England. The Haliade-X is also the only 12+ MW offshore wind turbine that has been operating for over two years, giving GE tangible experience operating the turbine in different conditions at different output levels. [Read more ▶](#)

In 2021, GE also received an order from Vineyard Wind to supply 62 Haliade-X turbines for Vineyard Wind 1, the first utility-scale offshore wind installation in the U.S. [Read more ▶](#)



#### ONSHORE WIND – SIERRA PLATFORM

GE's newest onshore wind turbine platform, Sierra, was introduced in 2022. Designed specifically for the North America region, the 3.4MW turbine is based on GE's bestselling 2MW platform, which recently surpassed 30GW of installed base globally. The Sierra platform is the next generation of onshore wind innovation with ease of installation and continued reliability. Sierra includes GE's revolutionary two-piece blade, designed to improve logistics and installation. From siting to execution to operations, Sierra is intended to offer customers continued quality and stability, helping them capture even more wind energy while also improving wind farm economics. [Read more ▶](#)



#### CUTTING CARBON PODCAST

One of the most dynamic and informative conversations taking place on climate change is GE's Cutting Carbon podcast where co-hosts Dr. Jeffrey Goldmeer and Brian Gutknecht talk through the factors at play today as well as the journey ahead. The award-winning podcast sits on the iHeartRadio's list of top podcasts in the "climate" category and has reached nearly 60,000 downloads since its inception.

In 2020, we launched the podcast with our first four seasons focusing on climate change and basics of decarbonization\*, the pathways to decarbonize gas, complementary technologies contributing to the energy transition, and how regions around the world are driving decarbonization.

In June 2022, we launched season five to bring the conversation on decarbonization "Closer to Home." With a roster of very special guests, we highlight GE Aviation's future of sustainable flight, J.B. Hunt's focus on decarbonizing long-haul shipping and trucks, Proterra's work to electrify commercial fleet vehicles, National Grid's fleet electrification roadmap, Johnson Controls' advancements in building controls and digitization, the United Nations Environmental Program Office's (UNEP) insight into the role agriculture plays in climate change, and The National Science Teaching Association's perspective on educating and empowering future generations to confront the energy trilemma. [Listen here ▶](#)



## HA GAS TURBINE FLEET ACHIEVES ONE MILLION OPERATING HOURS

GE's record-setting H-Class heavy duty gas turbine fleet—the fastest growing fleet in its class—secured more than 50 customers across 20 countries, generated more than 26 GW of power and accumulated more than 1 million commercial operating hours. Since the launch of its flagship HA gas turbine in 2014, followed by the first unit in commercial operation in 2016 with record-setting combined cycle efficiency, GE's HA gas turbine has helped power plant operators manage environmental impact, increase efficiency, retire coal-fired facilities and integrate greater levels of renewable energy. GE's H-Class supports the shift to producing more sustainable power, including pathways to near zero carbon operations which include pre-combustion through the use of hydrogen fuels and post-combustion with carbon capture, utilization and sequestration.

[Read more ▶](#)



## AERODERIVATIVES TO SUPPORT CALIFORNIA EMERGENCY POWER NEEDS

In the fall of 2021, four of GE's TM2500 aeroderivative gas turbines were ordered, delivered, installed and commissioned in only 42 days by the State of California's Department of Water Resources (DWR)—the government body responsible for managing the state's water supply—Kiewit Power Constructors Co. and GE. The turbines are now providing up to 120 MW of peak power at California's Roseville and Yuba City Power Plants. Engineered with flexibility at the forefront, GE's TM2500s are able to start and ramp up quickly in just minutes and supplement renewable generation to enhance the reliability and sustainability of California's electricity system during periods of peak demand or grid volatility. [Read more ▶](#)



## TRANSFORMING ENEL GPG'S APPROACH TO ASSET MANAGEMENT

Enel's Global Power Generation (GPG) business avoided ~ 750 GWh and €3 million in unscheduled downtime (\$3.6 million) using GE Digital's Asset Performance Management (APM) across 14 sites, 20 power islands and almost 400 assets. Today, the Enel GPG team can identify anomalies before they become alarms, leveraging real-time data and advanced analytics to optimize operations. Building on the success of the APM deployment, Enel GPG plans to roll out APM Strategy on two more power generating assets in Italy. By balancing risk, production goals and resource investment, APM Strategy will allow Enel GPG to focus costs on the most critical assets—reducing maintenance and inventory costs, increasing availability and reliability, and moving away from reactive maintenance practices to a proactive approach. [Read more ▶](#)



## ONSHORE WIND IN VIETNAM

In 2021, GE was awarded a contract by Ocean Renewable Energy Joint Stock Company to supply 15 of GE's 4 MW-137 wind turbines for the Cau Dat Wind Farm, the first wind farm in the Lâm Đồng Province in Vietnam. [Read more ▶](#)

This was followed by a second contract by the Vietnam Join-Stock Construction Electricity Corporation to supply eight of GE's 3.8-137 wind turbines to support construction of the Thuan Nhien Phong wind farm in Binh Thuan province in the south-central coastal region of Vietnam.

GE is a long-term partner in supporting Vietnam's energy transition by bringing its innovative technology to support the country in its efforts to power households with sustainable energy. GE Vietnam has more than 1,600 employees in Vietnam and is the only wind turbine original equipment manufacturer with a manufacturing footprint in the country. [Read more ▶](#)

## MODERNIZING AND DIGITIZING THE GRID

In most countries, the electrical grid is one of the key bottlenecks to the energy transition, which is why GE Digital, GE Grid Solutions and GE Power Conversion are focused on providing its customers with the hardware, software and services needed to deliver affordable, sustainable and reliable electricity to consumers around the world.

To meet decarbonization goals, the electrical grid needs to be reliable, flexible, visible and able to accommodate and orchestrate more renewable energy:

**Reliable:** GE provides both the physical upgrades and digital software needed to help keep the lights on. By replacing or upgrading dated substations with GE Grid Solution's modern and reliable infrastructure, grid operators can unlock valuable data giving them greater situational awareness and actionable intelligence. GE's digital energy software helps utilities safely and reliably deliver power, run everyday operations, manage disruptions and severe weather events, orchestrate renewables and facilitate grid economics. Our Visual Intelligence solution mitigates threats and strengthens the grid with AI-based vegetation and asset inspection programs to help prevent outages.

**Visible:** GE enables customers to accurately see their physical network digitally through purpose-build asset management solutions. Our software supports a fully connected, phase aware network model that is the solid foundation utilities need to support their grid modernization efforts. Network Digital Twins help operators model their entire network to better operate, analyze and optimize how the grid responds to the impact of increasingly extreme weather, aging infrastructure and the growing use of renewable energy on the grid.

**Flexible:** As electricity demand increases and more renewable energy comes online, voltage on the grid can fluctuate which can impact power quality and power transfer capability. New transformers, with greater flexibility in impedance, will be required. GE provides solutions that offer grid operators the ability to provide reactive power support, enhance controllability, improve stability and increase power transfer capabilities of alternating current transmission systems. GE also provides software that balances the physical grid investments with non-wires alternatives to enable utilities to optimize capital expenditures.

**Accommodate and orchestrate more renewable energy:** Ensuring the grid remains efficient and reliable, as more renewable energy comes online, is a priority. GE's Advanced Distribution Management Solutions (ADMS) enable the safe and secure management and orchestration of the electricity distribution grid, efficiently analyzing and leveraging renewable energy to meet demand. Real-time control software can plan, connect and control traditional, renewable and distributed energy (DER) resources to balance demand and supply of electrons across the transmission and distribution energy network. Our High Voltage Direct Current (HVDC) technology also allows utilities to move renewable energy farther distances to improve network performance.



### WORLD'S FIRST FLEXIBLE LARGE POWER TRANSFORMER INSTALLED IN THE U.S.

GE, Prolec GE and Cooperative Energy have developed and installed the world's first flexible large power transformer at Cooperative Energy's substation in Columbia, Mississippi. The transformer, which began field validation in 2021, will improve grid resiliency by offering more flexibility for fault management, frequency and voltage regulation through an online adjustable impedance. [Read more ▶](#)



### HVDC'S ROLE IN CONNECTING RENEWABLE ENERGY TO THE GRID

GE's Grid Solutions and Sembcorp Marine have been awarded a full contract to supply a state-of-the-art High Voltage Direct Current (HVDC) transmission system for Sofia, one of the world's largest offshore wind farm projects. GE's HVDC offshore converter station will be the most powerful ever built and will be installed 220 kilometers from shore, which will also make it the most remote. Once operational, Sofia, located off the coast of the North East of England, will be able to generate enough wind energy to meet the electricity needs of almost 1.2 million average U.K. homes. Photo from Dolwin, Germany project.

[Read more ▶](#)



#### INCREASING RENEWABLES GROWTH FOR THE UK GRID

GE Power Conversion and Statkraft are working together to decarbonize the UK energy sector. To help deliver this innovative and world leading approach to managing grid stability, Statkraft's site in Keith, Moray will utilize GE's Rotating Stabilizer technology, which provides the same stability services as traditional thermal plant generation, but without CO<sub>2</sub> emissions during operations. As a result, fossil fuel powered generation does not need to run, which allows more renewable generation to operate, providing secure electrical power at a lower cost to consumers. [Read more ▶](#)



#### EQUIPPING PUMP STORAGE POWER PLANT

In 2021, GE Power Conversion announced that it will equip the fully fed pump storage power plant Reißeck II+ of VERBUND. Reißeck II+ will be an underground cavern power plant and an efficient extension to the Reißeck II pump storage power plant, which started operating in 2016. The unique technology GE Power Conversion is providing for this location will be used to generate renewable energy for thousands of homes. [Read more ▶](#)



#### BAHRAIN ELECTRICITY & WATER AUTHORITY

Using GE Digital's Grid Software (ADMS, AEMS, WAMS and Water Transmission & Water Distribution Management), Bahrain Electricity & Water Authority will modernize the Kingdom of Bahrain's electricity and water networks and optimize service for 740,000 electricity and water customers. It will be installed in a state-of-the-art control center that will digitize operations for increased efficiency and operations redundancy. [Read more ▶](#)



#### GE DIGITAL ACQUIRES OPUS ONE SOLUTIONS TO ADVANCE THE ENERGY TRANSITION

In 2021, GE Digital entered into an agreement to acquire Opus One Solutions Energy Corporation, a software company that helps electric utilities optimize energy planning, operations and market management. Opus One's renewable energy planning capabilities, combined with GE Digital's network management and optimization portfolio, will help utilities make decisions about how to integrate renewables and distributed energy resources at scale across the electrical grid. [Read more ▶](#)

## Innovating breakthrough technologies



GE has one of the most important roles to play in delivering the technology the world needs to make progress today to reduce greenhouse gas emissions while simultaneously innovating breakthrough technologies to succeed in the energy transition. The achievement of deep decarbonization goals over the coming decades is likely to depend in part on technologies which are still being developed and have yet to be deployed or widely adopted. Together with our partners, we are working on hydrogen as a fuel, carbon capture and sequestration, superconducting generators for wind turbines with no rare earth materials, advanced nuclear power and additive manufacturing. GE's history of innovation has prepared us to support the global energy transition in ways that are as equitable as they are efficient.

### GE'S HYDROGEN TRACK RECORD

**100+ units**

running on hydrogen fuel blends<sup>3</sup>

Pathway toward

**100%**

hydrogen capacity by the end of the decade

**8M+**

operating hours

**30 years**

of hydrogen experience



Long Ridge Energy Terminal and GE Gas Power have announced a successful first step to transition the HA-powered facility to carbon-free hydrogen with multiple successful hydrogen demonstration tests in 2022.

In addition, GE is in close collaboration with multiple strategic partners on the development and execution of a gas turbine carbon capture and sequestration system. GE is currently working on multiple studies to optimize the integration of these existing technologies focusing on affordability, reliability and flexibility, and a small footprint to deliver this critical technology to the market.

<sup>3</sup> GE H2 statistics as of September, 2021 – inclusive of both heavy-duty and aeroderivative gas turbines.

## ADVANCED NUCLEAR



## SUPERCONDUCTING GENERATORS



### ADVANCED NUCLEAR TECHNOLOGIES PROVIDE CARBON-FREE ELECTRICITY GENERATION

Nuclear power is critical to decarbonizing the energy sector and achieving net zero carbon emission goals of the Paris Agreement. We are investing in advanced nuclear technologies like GE Hitachi's BWRX-300 small modular reactor (SMR) and Natrium™ to provide carbon-free, flexible, dispatchable electricity generation.

The BWRX-300 SMR is a key pillar of GE's energy transition leadership. The BWRX-300 produces no carbon during operation and has been designed to achieve construction and operating costs that are substantially lower than traditional nuclear power generation technologies. Moreover, SMRs are 10% the size and complexity of a large nuclear project, offering a smaller physical footprint and ability to be sited in more locations. The BWRX-300 can be constructed in 24-36 months utilizing modular and open-top construction techniques proven in Japan. A single SMR has the capability to power approximately 300,000 homes with a power plant footprint that's smaller than the size of a U.S. football field. Initial deployments are planned in Canada as soon as 2028 and Poland in early 2030s, and we are exploring opportunities with the Tennessee Valley Authority (TVA).

In partnership with TerraPower, GE Hitachi is also developing Natrium, a cost-competitive, sodium fast reactor coupled with a molten salt-based integrated energy storage system. This innovative addition allows a Natrium plant to integrate seamlessly with renewable resources and could lead to faster, more cost-effective decarbonization of electricity generation. Kemmerer, Wyoming, was selected as the preferred site for the Natrium reactor demonstration project.

[Read more ▶](#)

### WORLD'S MOST POWERFUL OFFSHORE TURBINE WITH SUPERCONDUCTING GENERATOR TECHNOLOGY

To enhance the prospects of offshore wind, GE is partnering with the U.S. Department of Energy on a \$20 million project to develop the world's most powerful offshore wind turbine utilizing [superconducting generator technology](#). Leveraging more than 40 years of Intellectual Property and application experience scaling superconducting magnets to improve GE's magnetic resonance imaging scanners in healthcare, GE is developing a superconducting generator for offshore wind that will deliver 25% or more renewable electrons, while driving a 9% reduction in the Levelized Cost of Energy (LCOE). This design will also improve supply chain efficiency by eliminating the need for rare earth elements that are used in generator designs today. The GE research team is working to demonstrate a full-scale prototype sometime in the next 5 years. [Read more ▶](#)



## ADDITIVE MANUFACTURING AIMS TO ACCELERATE THE PRODUCTION OF GE'S HALIADE-X

In partnership with Fraunhofer IGCV and voxeljet AG, GE is developing the world's largest 3D printer for offshore wind applications to streamline the production of key components of the Haliade-X turbine. Additive manufacturing provides flexibility to produce large turbine components near offshore wind projects, lowering transportation costs and bringing environmental benefits.

[Read more ▶](#)



## CREATING AUSTRALIA'S FIRST POWER PLANT TO BURN A HYDROGEN AND NATURAL GAS BLEND

GE's gas turbine technology will power Australia's first dual-fuel capable natural gas/hydrogen power plant at the Tallawarra B Power Station in New South Wales. The project aims to accelerate the energy transition in Australia using gas that can be further decarbonized by using hydrogen and hydrogen-blended fuels. Customer EnergyAustralia will use GE's 9F.05 gas turbine for the project, which will be the first large-scale, gas-powered plant to be built in New South Wales (NSW) in more than 12 years. [Read more ▶](#)



## EFFECTIVE INERTIA METERING & FORECASTING FOR GREAT BRITAIN'S ELECTRICITY NETWORK

National Grid Electricity System Operator (ESO) has deployed GE Digital's ground-breaking Effective Inertia Metering & Forecasting solution in production across Great Britain's electricity network. Inertia is a critical factor as it keeps a grid running when a generator suddenly disconnects, buying time for other generators to ramp up. Since inertia can be expensive and carbon intensive, operators need to be confident they've got enough while considering the cost to billpayers and emissions. GE Digital's machine learning-based Inertia Forecasting informs short-term operational decisions and long-term investment assessments.

[Learn more ▶](#)



## CARBON CAPTURE, UTILIZATION AND STORAGE (CCUS) PROVIDE PATHWAY TO LOWERING CARBON EMISSIONS FROM POWER GENERATION

In collaboration with Southern Company, Linde, BASF and Kiewit, GE Gas Power will complete a front-end engineering design (FEED) study targeting a 95% reduction of carbon emissions compared to traditional gas power generation.

The GE-led carbon capture technology integration project will receive \$5.7 million from the U.S. Department of Energy's (DOE) with a goal of commercial deployment by 2030. [Read more ▶](#)



## BWRX-300 A KEY PILLAR OF GE'S ENERGY TRANSITION LEADERSHIP

In 2021 GE Hitachi (GEH) was selected by Ontario Power Generation (OPG) as technical partner for the Darlington New Nuclear Project. GEH is working with OPG to deploy a BWRX-300 small modular reactor at the Darlington site that could be completed as early as 2028.

[Read more ▶](#)



## GE'S G<sup>3</sup> SUPPORTS GROUPE E'S MOVE AWAY FROM SF<sub>6</sub> WHILE REDUCING GREENHOUSE GAS EMISSIONS

In 2019, Groupe E, a major power utility in Switzerland, contracted GE for the delivery of seven GL312g g<sup>3</sup> live tank circuit breakers for the renovation of their Planchamps substation in the Neuchâtel region. In line with their sustainability targets, Groupe E is one of the first power distribution operators in Europe to select GE's GL312g circuit breakers using g<sup>3</sup> insulating and switching gas instead of SF<sub>6</sub>. g<sup>3</sup> gas-insulating and switching technology allows GE to build high-voltage equipment with the same high performance and compact size as traditional SF<sub>6</sub> products but with a CO<sub>2</sub>e impact reduced by 99%. g<sup>3</sup> also has a significantly improved life cycle assessment (LCA) compared with SF<sub>6</sub> products and other alternatives. [Learn more ▶](#)

## Our collaborations

GE has a long history of working collaboratively across the energy industry to achieve real and long-standing positive outcomes for our customers, the industries we serve and our planet. We are prioritizing partnerships across all our stakeholders—customers, investors, governments, NGOs and our competitors—to ensure the necessary progress is accomplished for sustainability across the energy ecosystem.

### GE JOINS DECARBONIZATION ALLIANCE

GE announced in February 2022 that the company has joined a new alliance—along with EQT Corporation, Equinor, GE Gas Power, Marathon Petroleum (including its affiliate MPLX), Mitsubishi Power, Shell Polymers and U. S. Steel—that will play an important leadership role in decarbonizing the industrial base in the Northern Appalachian Region of the United States. The alliance will work to develop a shared vision for a low carbon and hydrogen industrial hub in Ohio, West Virginia and Pennsylvania, and represents a broader decarbonization partnership model that GE is actively pursuing to support energy transition efforts. [Learn more ▶](#)

### RECYCLABLE WIND TURBINE BLADES

The ZEBRA (Zero wastE Blade ReseArch) consortium, led by French research center IRT Jules Verne and other industrial companies, including LM Wind Power, a GE Renewable Energy business, is developing a 100% recyclable wind turbine blade, supporting the industry's transition to a circular economy. As part of the project, LM Wind Power has designed and built the world's largest thermoplastic blade at its Ponferrada plant in Spain. This milestone was achieved after a year of material development and testing, backed by sub-component level process trials by the consortium partners. In addition to material testing and process trials, the companies have also made progress on developing and optimizing the manufacturing process by using automation to reduce energy consumption and waste from production. [Learn more ▶](#)



### GE JOINS PRINCETON UNIVERSITY CLEAN ENERGY TECHNOLOGY CONSORTIUM

Applying academic research to help accelerate low-carbon innovation, Princeton University's Zero-Carbon Energy Systems Research and Optimization Laboratory (ZERO Lab) created a new coalition, bringing together corporations and researchers focused on scalable clean energy technologies. With founding members GE, Google, and ClearPath, the consortium will support ongoing research such as long-duration energy storage, flexible geothermal energy systems, carbon capture and sequestration, and commercial fusion power plants. [Learn more ▶](#)

### SUPPORTING THE CRITICAL NEED TO MODERNIZE THE ELECTRICITY SYSTEM

GE is a member of the GridWise Alliance, which represents the broad and diverse stakeholders that design, build and operate the electric grid in the United States. Since 2003, the GridWise Alliance has been at the forefront of educating key industry stakeholders on the critical need to modernize the national electricity system. In April 2021, the GridWise Alliance announced the formation of a 30-member Grid Infrastructure Advisory Council (GIAC), including GE Digital, American Electric Power (AEP), Exelon Utilities, Natural Resources Defense Council (NRDC), among others. The GIAC and GridWise Alliance work collaboratively with the current administration to define areas where investment in the electric grid would be most beneficial to the economy and the communities most in need. [Learn more ▶](#)



# Our global impact on the energy transition

GE believes that access to reliable, affordable and sustainable energy is essential for all people globally. As the demand for energy grows, GE is committed to pursuing technological innovations to support decarbonization and increased reliability and accessibility. Over time, the carbon emissions per unit of power provided from GE's power generation portfolio has decreased. We are also actively working with governments to help countries achieve their climate goals, which we do through a combination of renewable and gas-based projects. Through this experience, we know there is no one-size-fits-all solution for the world. Here are some of the ways we are driving decarbonization around the globe through solutions tailored for diverse environments.



## BRAZIL

GE is supporting Brazil's energy transition and our technology helps power approximately 30% of the energy produced in the country. Powered by three of GE's 7HA.02 gas turbines, the Port of Sergipe I Complex provided uninterrupted electricity during the seasonal drought in 2021 and will continue to help Brazil's electrical grid respond to changes in demand and weather. [Learn more ▶](#)

GE's Grid Solutions business also commissioned the first digital substation in the public power grid connected to Brazil's National Interconnected System. Located in São Paulo, the digital substation ensures greater reliability and efficiency for the Brazilian transmission system. [Learn more ▶](#)

In 2021, GE signed a contract to provide full operation and maintenance for the Igarapava Hydroelectric Power Plant, located along the borders of Minas Gerais and São Paulo. The five hydroelectric generating units provide 210 MW of installed capacity, sufficient to meet the demand for electricity of 225,000 people.

[Learn more ▶](#)



## SOUTH KOREA

Since its official launch in Korea in 1976, GE has strived to achieve shared growth with Korean companies in both local and global markets by cooperating in core infrastructure sectors. In 2022, Anyang District Heating Plant, powered by GE's 7HA.02 gas turbine technology, added approximately 500 MW to the national grid, the equivalent needed to power approximately 500,000 South Korean homes, as well as steam for district heating for over 180,000 citizens of Anyang City. The combined Heat and Power project allows South Korea to generate less carbon emissions per unit of fuel used at the plant and supports the transition to a lower carbon future in the country. [Learn more ▶](#)



## UNITED KINGDOM

GE's footprint in the U.K. consists of ~40,000 MW of power and we are uniquely positioned to support the country's net zero Ten Point Plan. The U.K. is building the world's largest offshore wind farm in three phases—Dogger Bank A, B and C—more than 130 kilometers off the North East coast of England. GE will provide 190 Haliade-X 13 MW turbines for Dogger Bank A and B, and 87 Haliade-X 14 MW turbines for Dogger Bank C. [Learn more ▶](#)

The third phase reached financial close at the end of 2021. When complete, the wind farm will be capable of producing 3.6 GW of electricity, enough to power 6 million homes. [Learn more ▶](#)



## SWEDEN

GE is contributing to Sweden's energy transition with more than 430 turbines installed and 1.6 GW of operating capacity in the country. We are supporting the single largest European wind farm, Önusberget, with 137 Cypress wind turbines, which will generate 753 MW of renewable energy. [Learn more ▶](#)

GE has been awarded a contract for Sweden's first SF6 free gas-insulated switchgear, which will be installed at a substation in Tumba. The switchgear will feature GE's industry-leading g3 gas, a game-changing alternative to SF6—one of the world's most potent greenhouse gases. [Learn more ▶](#)

# GE Power and Renewable Energy's actions toward its 2050 Scope 3 net zero ambition

In the preceding five pages, GE Power and Renewable Energy identify the technology they are delivering today and GE's investments for the breakthrough technologies of tomorrow. As these pages show, GE's investments toward decarbonization technologies are uniquely diverse. GE is innovating these technologies both for our customers and for the planet as we work to play a leadership role in the power sector, meeting its 2050 net zero goals.

In 2021, GE announced an ambition to be a net zero company for its sold products by 2050, which is the most impactful and relevant emissions category given the nature of our businesses. Working with external advisors and experts over the course of 2021, we further refined our focus to power turbines and aircraft engines, which account for the majority of GE's greenhouse gas emissions across all reporting scopes. By focusing on the key levers we have as a company to impact the energy transition, we will more effectively deliver the type of technology innovations and breakthroughs our power customers are relying on to achieve their own net zero ambitions.

In working to lead the development of technology for the power sector, we are informed by the role of our power business for sustainable development and broader industry trends. Addressing the urgent need to decarbonize the global energy system is at the same time a huge challenge and opportunity. Energy is the lifeblood of safer, longer lives, economic growth and human prosperity. The International Energy Agency (IEA) projects that the global population will grow by approximately 2 billion people by 2050. Yet even today, 750 million people globally do not have access to affordable, reliable, and sustainable energy.

GE is proud to play a critical role in providing reliable, sustainable, and affordable energy globally, a core United Nations Sustainable Development Goal. As described on the pages above, GE's equipment powers one third of the world's electricity, and 90 percent of the world's power transmission utilities use GE technology. With diversified technology in the renewable power, conventional power, and grid businesses, GE is committed to achieving the goal of decarbonizing the energy sector globally while growing access and resiliency to reliable, sustainable, and affordable electricity. These efforts collectively advance progress toward SDG 7 (affordable and clean energy), SDG 11 (sustainable cities and communities) and SDG 13 (climate action).

The IEA forecasts that global energy consumption will grow by 50% between a 2018 baseline and 2050. Energy generation contributes around 25% of global CO<sub>2</sub> emissions and this will need to be drastically reduced in order to hit the global target of net zero emissions by 2050. With this challenge becoming clear, global regulators and industry experts are now starting to paint a picture of what the future energy mix will need to look like with fossil fuels, and in particular, natural gas still needing to play a role to support the transition, alongside a huge growth in the clean energy and renewables sector as well as decarbonization technologies. In its 2021 Energy Outlook, the IEA calls

Steve Brown inspects  
GE's 7HA high  
efficiency air-cooled  
gas turbine in  
Greenville, SC, USA.



for "action in four key areas over the next decade that are essential to keep the door to a 1.5 °C stabilization open: a massive push for clean electrification; a renewed focus on realizing the full potential of energy efficiency; concerted efforts to prevent leaks from fossil fuel operations; and a boost to clean energy innovation."

As GE technology helps power one-third of global electricity, we can make a major contribution to the energy transition ahead. Our technologies are contributing to many of the efforts that have driven the decarbonization of energy to date, and they are crucial to reducing the sectors' carbon intensity that is needed in the short term, as we invest in and build the longer term mix of low carbon energy, clean fuels and renewable electricity needed for the net zero future.

## OUR NET ZERO PRINCIPLES

As one of the world's leading companies in the energy sector, we know that the challenge is complex and we have to be nimble and committed as a company and with our partners to innovate the technology to succeed over the years and decades to come. We have several principles that are guiding our approach to our net zero ambitions:

- **Credibility:** Knowing this path will take decades, we prioritize credibility first and foremost with our stakeholders to share what we objectively know and don't know. This also means as we get better and more credible information, we will share that with our stakeholders.
- **Continuous learning:** Our analysis below is based on how we see things today. We are committed to continuous learning to enable more insights and opportunities to make a difference, and we expect to make progress over time.
- **Collaboration:** We know no one company can solve these issues alone. With GE's spirit of humility, we welcome continued collaborations with our customers, investors, regulators, and peers to achieve success toward our goals. We summarize several of these key collaborations on page 31.
- **Commitment to innovation and technology:** Simply stated, GE's role in the sector's path toward net zero is to deliver state of the art technology today to make progress while innovating the breakthrough technologies for tomorrow. Below, we synthesize the previous 11 pages regarding how we see various technologies contributing toward this pathway.

Applying these principles, we consider three pathways toward the net zero ambition:

### Actions pre-2020

#### Building on substantial contributions from past action.

Our efforts toward decarbonization began well before 2021. GE has long innovated its products to drive efficiencies and reduce CO<sub>2</sub> emissions by delivering state of the art products. Our past efforts since 2010 lay a strong foundation for the progress forward.

### 2020-2030

#### Driving continued progress this decade.

We are prioritizing the 2020s as a decade of action, with a focus on innovating the technology solutions needed to achieve net zero emissions in 2050. This will take several forms, including advancing technology with the potential to further reduce carbon emissions and carbon intensity in this decade and beyond.

### 2030-2050

**Innovating for the future.** While we are optimistic about the role of GE's technologies to make progress through 2030, we know they will not be enough to achieve 2050 net zero ambitions. We are investing today to innovate the next generation of breakthrough technologies to achieve the step changes that will be needed for the power sectors.

## 1. BUILDING ON SUBSTANTIAL CONTRIBUTIONS FROM PAST ACTION

GE's power technology has made substantial contributions to global decarbonization efforts for many years. For example, over the past decade, while global coal generation across the industry grew by 6% (2010 → 2021), estimated generation from GE's installed base of coal plants declined by 44% (2010 → 2021), fueled by retirements and **coal-to-gas switching**. Estimated generation from GE's gas installed base grew by 17% during this period. With less than half of the carbon emissions of a comparably sized coal plant and the operating flexibility to accommodate variable renewable generation, gas played a vital role contributing to the reduction in carbon emissions without sacrificing grid resilience. During this same period, there was a 16% increase in estimated generation from GE's installed **low-carbon power generation technologies (wind, hydro, nuclear)**. The net of these changes resulted in an estimated reduction in carbon intensity of the total GE installed base by 22% over this time period.

Over the past decade and a half, coal-to-gas switching has done more to decarbonize the U.S. power sector than any other technology. At the same time, GE has accumulated more than 1.3 million operating hours on its World Record Efficiency H-class gas turbines (with nearly one-third the carbon emissions of a coal plant). Advanced gas path upgrades deployed to GE's existing F-class fleet over the past three years reduced roughly 2 million tons of CO<sub>2</sub> emissions.

Gas plants play a vital role balancing variable renewables with dispatchable flexible power, preserving system resilience. Converting to **hydrogen fuel** reduces carbon emissions and GE leads the industry in hydrogen and hydrogen-like combustion experience (8 million hours across 100+ units).

### ESTIMATED CARBON INTENSITY OF GE POWER & RENEWABLES INSTALLED BASE

Grams CO<sub>2</sub>/kWh (gross, installed base, relative)



## 2. DRIVING CONTINUED PROGRESS THIS DECADE

As described above, GE has a two-fold goal for the energy sector: (1) to decarbonize the energy sector globally through a combination of renewable energy, gas power, and grid modernization while (2) growing resilient access to reliable, sustainable, and affordable energy for everyone. This challenge takes on greater significance knowing the power sector will be a key enabler for decarbonizing other economic sectors (e.g., transportation, buildings). GE Power's 2021 Scope 3 emissions from its power turbines are estimated on the accompanying chart.

In this decade, GE will focus on reducing Scope 3 emissions in several ways. GE's **coal exit** and **wind growth** are key near-term influencers toward lowered Scope 3 emissions. Over the decade, greater deployment of gas plant pre-combustion decarbonization technologies (**hydrogen or renewable natural gas blending**) and post-combustion **carbon capture technologies** (including retrofits of existing plants) could also support progress. Our projected timeline for the deployment of technologies this decade is shown on the accompanying chart and the ways we are supporting these technologies are described above in the Sustainability Report.

GE will continue its investments in **onshore and offshore wind** to improve capacity factors and to expand manufacturing capacity to support robust demand growth for renewables. The Haliade X, the world's largest offshore turbine in operation, is designed for growth from its current 14MW/220m rotor to as much as 17MW/250m rotor, resulting in a 7% capacity factor improvement. GE's newest onshore wind turbine platform, Sierra, was introduced in 2022. Designed specifically for the North America region, the 3.4MW turbine is based on GE's bestselling 2MW platform, which recently surpassed 30GW of installed base globally. Investments in **Grid hardware and software** will also enable higher renewable penetrations without sacrificing required resilience and grid stability. GE is continuing investments in the grid of the future to orchestrate variability of renewable resource, address bi-directional flow of electricity from distributed resources, augment traditional forms of system inertia, and enable controllable loads such as EV charging or heat pumps to balance supply and demand. These investments will increase the potential for higher penetration of renewables on the grid and improve the carbon intensity of the power sector.

## USE OF SOLD PRODUCTS

Estimated lifetime net emissions from new gas turbine and steam turbine products sold million metric tons CO<sub>2</sub>.

	2019	2021	TARGET
Net emissions million metric tons CO <sub>2</sub> (net, new units, absolute)	506	477	~300-400 (-20-45%)

This follows Greenhouse Gas protocol, Scope 3 use of sold products, category 11 methodology.

## 3. INNOVATING FOR THE FUTURE

Looking to and beyond 2030, GE is investing today in the breakthrough technologies that we believe will be critical to achieve net zero 2050 goals. As described above, GE continues to invest in technology to support the energy transition toward lower greenhouse gas emissions without sacrificing the required grid resilience that consumers demand. Continued growth in renewables will play a major role, while the world will also require decarbonized dispatchable and flexible plants and hybrid/storage solutions to address variability of renewables.

### SMALL MODULAR NUCLEAR REACTORS

GE is committed to developing and launching its first **small modular reactor** technology, the BWRX-300 with plans to be operational by 2028. See page 29. This technology will be available in small scalable blocks, that use modularity and simplicity of design to take significant cost and cycle time out.

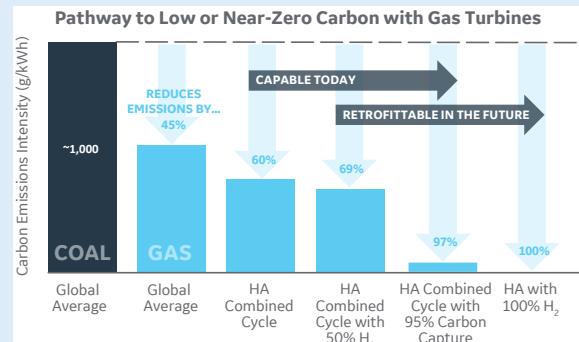
### HYDROGEN

GE leads in **hydrogen** combustion experience and capability today and will continue to expand capability for increasing blends with a goal of a 100% hydrogen-capable (and hence zero-carbon power generation) product portfolio across its catalog by 2030 (see pages 46).

### CARBON CAPTURE

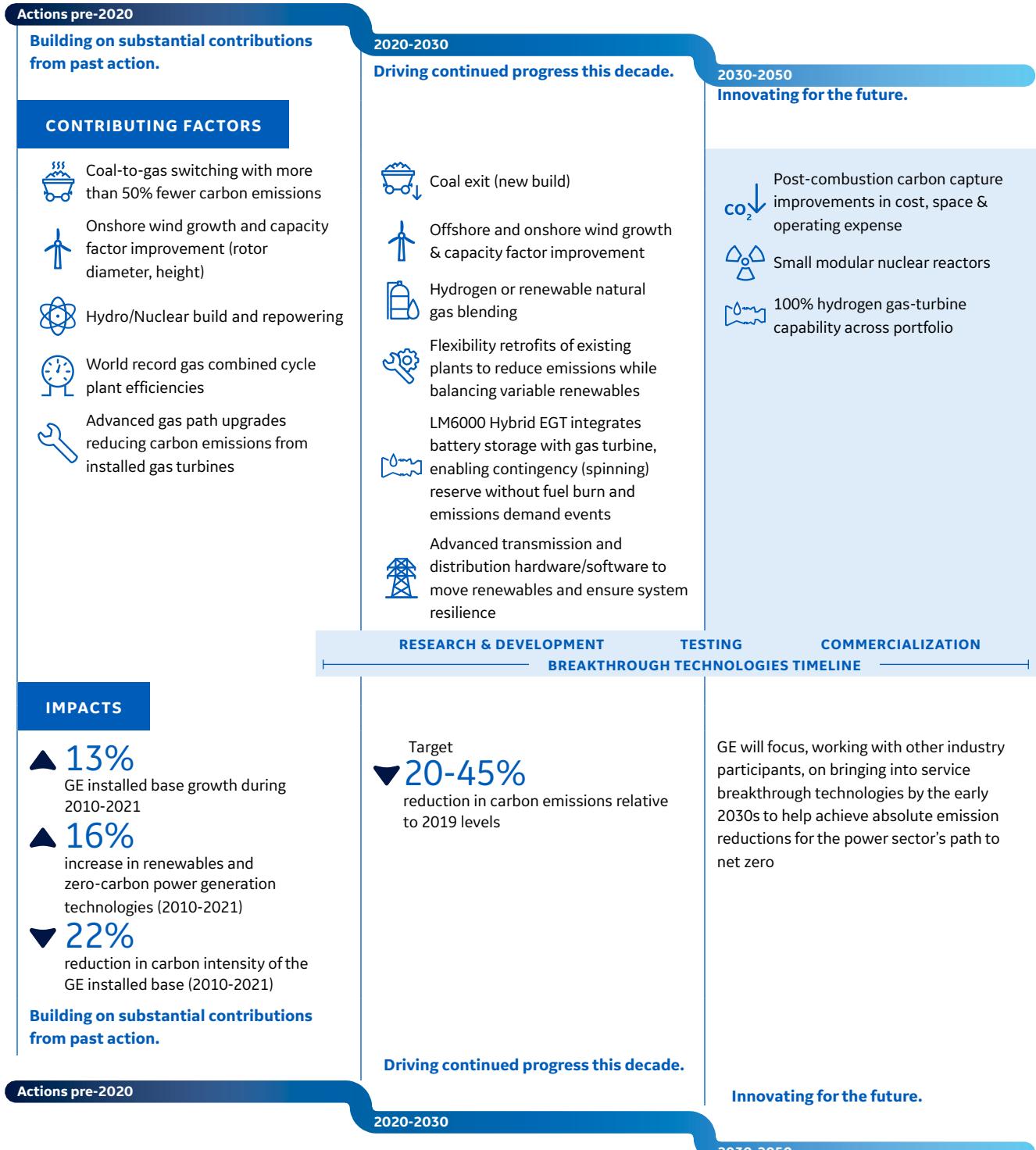
We also see a need for **carbon capture technology** to be deployed across new and existing gas plants. GE is participating today in multiple feed studies to integrate carbon capture technology into a flexible gas combined cycle plant. There are significant capital costs, operating costs, and physical space reductions under development with the potential to improve carbon capture deployment economics. In parallel, GE will continue active advocacy efforts with policy makers to ensure sensible regulations and enabling incentives are prioritized. GE anticipates to be actively constructing its first integrated carbon capture combined cycle system by 2025.

As these pages show, GE believes a diverse suite of technologies and innovation will be key to decarbonizing the energy sector while growing resiliency. Our investments include renewable energy in the onshore and offshore wind sectors and grid modernization technology, all of which will contribute to net zero. Our Scope 3 focus is on reducing fossil fuel emissions through coal-to-gas switching and decarbonizing gas turbines pre combustion with hydrogen and post combustion with carbon capture.



STRATEGIC GOAL	INDICATIVE TIMING	BASIS FOR INDICATIVE TIMING	
<b>Post-combustion carbon capture</b> (pages 28, 30)	Gas plant integrated capture projects under construction	2025	GE actively engaged in multiple feed studies for carbon capture projects in Europe and North America with construction to commence by 2025
<b>Small modular nuclear reactors</b> (pages 29-30)	First X-300 operational	2028	GE's fleet leader for Ontario Power Generation working toward commencement operation in 2028
<b>Hydrogen gas-turbines</b> (page 28)	100% H2-capable catalog	2030	GE currently has 100% H2-capability across some of its gas turbine offerings and is expanding capability with industry-leading efficient HA gas turbines to 100% by 2030 to meet customer needs to future-proof investments as hydrogen becomes available.

## GE POWER AND RENEWABLE ENERGY: PATH TO NET ZERO BY 2050



# Integrated, efficient and highly personalized care

I'm proud that for more than a century, we at GE Healthcare have been working to deliver products and solutions that build a healthier world.

Our purpose of improving lives in the moments that matter is manifested in our impact on patient and clinician outcomes around the world through innovative technology. We promote a fair and equitable workplace with unyielding integrity. I'm excited about how we've advanced standards of excellence through our commitments to extend the lives of our products and reduce energy use in our supply chains and production sites.

But with the growing threat of climate change, systemic inequality and global health disparities, we recognize that fulfilling our purpose, and following through on our ESG commitments, has never been more essential.

We know that we can do more. We want to enable earlier, better and faster diagnosis and treatment for more people in need, while reducing or eliminating our impact on the environment.

Key to achieving that aim will be improving access to healthcare globally, especially to the half of the world's population that is underserved and cannot access essential health services. Of all new cancer cases in the world, a majority occur in low-income countries and, in addition to population factors, this is partly exacerbated by lack of preventative strategies and a shortage of medical equipment. In places like Nigeria where breast and cervical cancer are on the rise, we've helped equip the Marcelle Ruth hospital with advanced technology, including mammography for screening and diagnostics and CT for radiation therapy, enabling patients, often for the first time, to get their care close to home.

To support a more sustainable future, we look for ways to help health systems improve efficiency and reduce waste. As they battle staffing shortages and an increasing number of patients, they can either build more hospital beds or find ways to better use existing resources to deliver care to more patients. Our AI-powered Command Center technology, used in more than 300 hospitals globally, offers real-time insights into patient workflow, helping staff to streamline discharge planning, surgical scheduling, care coordination and more. Through their Command Center, Tampa General Hospital in Florida was able to reduce patient length of stay by half a day and avoid the need for 64 new hospital beds—this has the equivalent carbon impact of taking about 3,900 cars off the road and saved the hospital \$40 million in just over a year after implementation.

For years, we have focused our efforts on developing medical equipment with best-in-class image quality and advanced software to increase diagnostic confidence. But we are challenging ourselves to be better. We are developing efficiency features and leveraging digital to turn even the largest pieces of medical equipment into devices that make a smaller mark on our planet. Our new MR system, SIGNA™ Hero, is designed to be capable of lowering the use of helium,



**PETER J. ARDUINI**  
President & CEO, GE Healthcare

a scarce and non-renewable resource, by up to 67%. The current version of the magnet is 2 tons lighter than its predecessor. We have also enabled medical staff to easily decrease the power consumption of the MR and reduce scan time by up to 50%, saving both resources and improving the patient experience.

We are focused on developing innovative technology using sustainable design principles that extend the lifecycle of our products, often leveraging the strength of our field-based services teams to execute on this goal. In 2021, our team in Latin America performed more than 200 upgrades in hospitals and clinics, extending and enhancing the life of CT, MR, ultrasound and other life-saving equipment. This enables medical staff to, for example, obtain higher quality images or speed up exam times to see more patients, without the need for new equipment or expanding their facilities.

No organization can tackle the breadth of healthcare challenges alone. We are bringing together an ecosystem of partners, leveraging the strengths of clinicians, technology leaders, academics and others to advance healthcare together.

In oncology, we are collaborating with several private companies and academic institutions. In the U.K., for example, we are working with The University of Cambridge to develop an AI-enhanced digital application that integrates cancer patient data from multiple sources into a single interface. We hope this will ultimately lead to cancer patients receiving faster and more personalized treatment.

As we plan for a new chapter in our history to become an independent company, we are integrating sustainability more deeply into the core of our culture and business by working to expand access to healthcare; mitigating our climate impact; advancing the circular economy; designing with sustainability in mind; promoting diversity, equity and inclusion; and protecting patient data and cybersecurity.

With our unique position and scale within the global healthcare ecosystem, we are committed to building a more sustainable world for this and future generations.

## Our technologies today

### MAKING CARE SMARTER AND MORE EFFECTIVE

We occupy a unique place in the healthcare industry. With 48,000 people in 160 countries, we impact the lives of billions. Our manufacturing and procurement footprint reaches across the world's healthcare ecosystem. We're focused on being an innovator delivering precision health. For us, that means better patient outcomes, productivity and seamless workflow integration.

We know the important role technology plays in our lives. From across the globe, we see how smart devices can help bridge shortage gaps as caregivers are increasingly having to do more with less. The U.S. is seeing major labor challenges, with a turnover of core staff between 15 to 20%. Smart solutions, such as our Command Center technology with operational AI, can help staff make quicker decisions based on predictive data, helping them improve productivity and allowing staff to focus on what really matters—their patients.

Our technology also enables caregivers to bring advanced diagnostics and treatments to remote parts of the world where access to hospitals and medical equipment is limited. The World Health Organization (WHO) reports that two-thirds of the world's population has no access to basic X-ray or ultrasound examinations, and if they are available, quality and safety can be questionable or dangerous. Portable solutions, such as handheld ultrasound, enable caregivers to bring the equipment to where the patient is. For example, staff at a small clinic

in Zambia were able to see more than double the number of women as a result of using handheld ultrasound—helping to transform care for expectant women in their country. And if the patient is unable to come to the clinic, staff can easily bring the ultrasound to the patient's home.

But the value of portable technology such as handheld ultrasound is not limited to developing countries. No matter the location or care circumstance, handheld ultrasound has proven an invaluable tool for many clinicians as a cost-effective, real-time tool to triage and determine patient care. The device's portability, ease of use and connectivity make it an indispensable and critical tool for primary care providers and other healthcare professionals around the globe.

In Southern France, in the remote commune of Les Vans—with a population of 2,600 and approximately 10,000 in the surrounding area—general practitioner Dr. Francis Pellet is able to manage complex cases with the use of handheld ultrasound. And with cloud connection, he can even collaborate virtually with his colleagues in Paris. This proved especially useful during the COVID-19 pandemic. During the pandemic, from a local pool of 2,000 people with pulmonary inflammatory symptoms, Dr. Pellet's team tested everyone with ultrasound and identified 10 to 12 patients per day, or about 10%, who needed special follow-up or different monitoring. The handheld ultrasound also provided information that allowed him to diagnose a severe case of cardiac decompensation that required surgery 15 days later, and a surprising, serious case of advanced cardiomyopathy in a 20-year-old male.



### VSCAN AIR – EXPANDING ACCESS TO CARE

Handheld ultrasound has become an essential tool, allowing clinicians to quickly collect images and triage patients while also providing the benefits of portability. The tool was designed to be accessible and usable without the need for adaptation or specialized design, across a wide variety of clinical specialties, clinician types, education levels, geographies and clinical settings. With 30,000 units impacting the care of more than 50 million patients worldwide, our Vscan Family technologies help doctors deliver expanded care to more people, including in rural regions. Vscan is used globally across a variety of clinical settings. For example, in Germany, Vscan is being used by primary care physicians to improve speed to diagnosis. In the U.S., it is used in helicopters for air transport. In Japan, it is used by homecare workers to aid in the care of aging patients. And in developing countries, it is used to provide care to expectant mothers.



### IMPROVING ACCESS TO HEALTH DATA IN AFRICA

GE Healthcare and Kenya-based startup, Afya Rekod, announced a collaboration that seeks to transform care delivery by giving patients in Kenya, Nigeria and South Africa an accessible record of their own health history, including radiological images. This will be made possible by enabling hospitals and diagnostic centers, many in rural settings, to host health records securely on one platform. [Read more ▶](#)



#### **RECYCLING IODINE – KEEPING CONTRAST MEDIA IN THE CIRCULAR ECONOMY**

Contrast media is a substance injected into the body to enhance medical imaging. Iodine is commonly used in contrast media for both CT and X-ray imaging. GE Healthcare has been recycling iodine-based contrast media for European healthcare facilities since 2006, but it's begun to expand its geographic reach and now offers this recycling program in 11 European countries, and last year expanded into Canada and the United States. In the U.S., over 40% of computed tomography (CT) procedures utilize contrast media. [Learn more ▶](#)



#### **SIGNA HERO & AIR RECON DL – LOW HELIUM MAGNET, ENERGY EFFICIENCY**

SIGNA Hero was designed with improved sustainability in mind. To help healthcare systems conserve limited reserves of helium and save on operational costs in the long run, SIGNA Hero is designed to be capable of lowering helium usage up to 67%. The SIGNA Hero magnet is also 2 tons lighter than its predecessor. The system is also designed to easily decrease power consumption and scan time by up to 50% using AIR Recon DL. [Learn more ▶](#)



#### **ANAESTHESIA SOFTWARE – MANAGING GREENHOUSE GAS EMISSIONS**

We introduced an advanced software that helps automate oxygen and anesthetic agent delivery to patients during general anesthesia. With the software, one study indicates a potential 44% decrease in greenhouse gas emissions due to more efficient use of anesthetic agents.



#### **STARGUIDE – OPTIMIZED FOR THERANOSTICS**

Healthcare systems continue to be asked to maximize efficiencies without compromising patient care. In response, we designed StarGuide SPECT/CT to provide clinicians with the data they need to help them make personalized care decisions and treatment recommendations that are at the heart of precision health. The system is optimized for theranostic procedures, which combine the delivery of therapy to patients with diagnosis to monitor disease.

[Learn more ▶](#)

<sup>4</sup> Tay, S, et al. Financial and environmental costs of manual versus automated control of end-tidal gas concentrations, *Anaesth Intensive Care* (2013); 41: 95-101.

# Our breakthrough technologies for the future



*We need to work towards a complete modernization of the current infrastructure to make healthcare more intelligence-based, giving us what we need to learn from the data we're generating.*

## FUTURE OF HEALTHCARE

The convergence of clinical medicine and data science (analytics & AI) means moving a step closer to precision health and to making healthcare overall more personal, effective, preventative and predictive.

Medicine today produces vast amounts of data. We do labs, we take blood, we scan, we scope, we measure, we monitor. The challenge is aggregating and analyzing that data to extract knowledge and insight. Today, for the most part, clinicians are doing this in their heads based on their experience and some rudimentary decision support tools. 97% of that healthcare data is never used, but unlocking it means we can propel faster towards Precision Health.

Today's innovations constitute the next step forward in healthcare—improving efficiency, making care more precise and lowering the overall cost, which also means increasing access to more people in more parts of the world.

We need to work towards a complete modernization of the current infrastructure to make healthcare more intelligence-based, giving us what we need to learn from the data we're generating. Ultimately, more intelligent healthcare will be more efficient and could potentially help save and improve more lives.

COVID-19 accelerated the pace of technological change globally. What would previously have taken the industry years to implement is now taking months. But the industry is still recovering from the pandemic. Health systems need better line of sight to all available resources, including staff. And that is only possible through greater access to data and strong collaborations within the industry.

Our **Edison Digital Health Platform** is being designed to enable healthcare systems to have a single platform to host and integrate apps into clinical workflows. With easy access to the workflow, analytics and clinical apps specific to care across the care continuum, clinicians will have actionable insights at their fingertips to help better serve their patients.

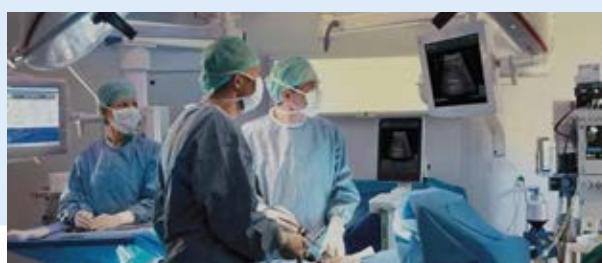
In France, we have launched the [AI DReAM project](#), a consortium that gathers French SMEs, start-ups, research labs and clinical centers to facilitate the development of AI in medical imaging. Our aim is to create the tools that will facilitate large scale data annotation and algorithm design, testing and validation to cut cycle development time for AI start-ups, researchers or radiologists who wish to create AI applications for medical imaging.

Used correctly, AI can also enhance the personal side of healthcare by freeing up time for clinicians to spend with their patients. It can help them spend less time managing data and more time on the complex decision-making behind a diagnosis. To achieve this, AI needs to be seamless. For example, our **AMX Navigate X-ray system** has on-device AI solutions that can triage critical conditions such as pneumothorax—a collapsed lung. This makes it easier for radiologists to know when to intervene and which patients to prioritize, as pneumothorax is a life-threatening condition.

## BK MEDICAL - IMPROVING DECISION MAKING DURING SURGERY

Ultrasound is an integral part of many care pathways. We have a strong global presence in ultrasound and have added the fast-growing and relatively new field of real-time surgical visualization to our pre- and post-operative ultrasound capabilities, creating an end-to-end offering from diagnosis through therapy and beyond.

[Learn more ▶](#)



## PCCT - INCREASING CLINICAL PERFORMANCE

Photon Counting Computed Tomography (PCCT) has the promise to further expand the clinical capabilities of traditional CT, including the visualization of minute details of organ structures. Karolinska Institutet and MedTechLabs in Sweden are testing the world's first silicon-based PCCT system. [Learn more ▶](#)





## REVOLUTION APEX - EASIER SCALABILITY AND UPGRADABILITY

Twenty years ago, new computed tomography (CT) technologies were introduced every four to five years, but today, we see new solutions annually. We introduced the industry's first CT platform with built-in-scalability and upgradability – all without replacing the gantry.<sup>5</sup> This solution enables healthcare facilities to keep up with latest technology and extend the lives of CT systems into the future. [Learn more ▶](#)

## ZIONEXA - PERSONALIZING CANCER TREATMENT

It is estimated that 168,000 people have metastatic breast cancer ("Stage 4") in the U.S., with a five-year survival rate of 28%. Our imaging agent, which is used as an adjunct to biopsy to help inform treatment selection for patients with recurrent metastatic breast cancer, is today accessible to approximately 25% of the relevant patient population. [Learn more ▶](#)



## CRITICAL CARE SUITE 2.0 - IMPROVING PATIENT OUTCOMES WITH AI

Threading a breathing tube down a patient's trachea requires skill, patience and steady hands. Our AI software helps doctors assess the placement of endotracheal tubes and make critical adjustments faster. The solution is one of five included in a collection of algorithms embedded in mobile X-ray devices that can give hospitals access to AI without having to make large investments in IT infrastructure. [Learn more ▶](#)

## OUR COLLABORATIONS

Not one stakeholder can solve healthcare's increasing and rapid challenges alone, which is why we are bringing together the ecosystem, leveraging the strengths of clinicians, technology partners, academics and others to advance healthcare together.

For example, to help small businesses in Africa's health sector strengthen their response to COVID-19 and other pressing healthcare challenges, GE Healthcare and NSIA Banque Côte d'Ivoire have partnered with IFC's Africa Medical Equipment Facility to support healthcare providers in Cameroon, Côte d'Ivoire, Kenya, Rwanda, Senegal, Tanzania and Uganda [access essential medical equipment](#). The program, which spans the African continent, is an opportunity to increase affordability and access to financing and to high-quality medical equipment and care.

We are collaborating with several partners to advance cancer care and we hope that these collaborations will enable oncologists and medical experts to deliver earlier diagnoses and more accurate treatments—a crucial component in achieving positive health outcomes with cancer patients.

- With The University of Cambridge and Addenbrooke's Hospital, we plan to collaborate on the development of an AI-enhanced application that integrates cancer patient data from multiple sources into a single interface. As a result, we hope cancer patients will get faster and more personalized treatment. [Learn more ▶](#)
- With Optellum, we are seeking to address one of the largest challenges in the diagnosis of lung cancer—helping providers to determine the malignancy of a lung nodule using AI. The clinician's AI-assisted diagnosis of malignancy may enable patients whose nodules are not malignant to avoid unnecessary and aggressive procedures, such as biopsy and surgical resection and enable the right treatment to start earlier. [Learn more ▶](#)

- With SOPHiA Genetics, we are collaborating on various projects, including advancing cancer care with the goal of better targeting and matching treatments to each patient's genomic profile and cancer type, helping to ensure the most effective and personalized treatment.
- With Spectronic Medical, we are combining our AIR Recon DL MR solution with their AI-based software to introduce a full AI and Deep Learning-based MR radiation oncology solution to healthcare providers. This will help enable high-precision treatment planning and improve clinical outcomes for thousands of radiotherapy patients.

[Learn more ▶](#)

In cardiology, we have partnered with AliveCor to deliver medical-grade, six-lead electrocardiograms (ECGs) taken by patients themselves outside of the hospital setting, at home or on the go, with information reaching GE Healthcare's MUSE Cardiac Management System for physicians to view and evaluate. The goal is to reduce hospitalization linked to cardiac conditions, including, but not limited to, atrial fibrillation. We have also joined forces with the American College of Cardiology Applied Health Consortium to build a roadmap for AI and digital technology in cardiology and to develop new strategies for improved health outcomes. [Learn more ▶](#)

<sup>5</sup> Scalability and upgradability are subject to the availability and compatibility of new capabilities and products.

## Our global impact on precision health

In a world where almost half of the population's healthcare needs are underserved, GE Healthcare plays a critical role in helping governments and healthcare systems improve accessibility and health outcomes for their people. As one of the largest manufacturers of medical imaging equipment, our innovations are relied upon to aid diagnosis in hospitals and medical facilities around the globe. Precise and speedy diagnosis is fundamental to the effective treatment of health conditions, and the COVID-19 pandemic has accelerated the journey to a future where hospitals will treat the sickest of the sick, with others monitored outside the four walls of the hospital and cared for in the home environment.



*GE Healthcare helped healthcare professionals in Vietnam as they worked to treat patients with COVID – delivering more than 800 ventilators, including 105 units by road from its production site 2,500 km away.*



### INDIA

Wipro GE Healthcare, together with partners HDFC Bank and United Way Delhi, is training 6,900 young people in Goa in healthcare-related skills for various non-technical job roles in the healthcare sector. The initiative aims to reduce the supply-gap of trained manpower in the existing healthcare system and to strengthen India's healthcare workforce. Nationally, this initiative will train and provide employment to youth over the span of two years across 13 states of India. [Learn more ▶](#)



### NIGERIA

Most women in developed countries receive at least two ultrasound scans during pregnancy. In Nigeria, this isn't common, and maternal mortality accounts for 59,000 deaths per year. GE Healthcare donated 30 portable ultrasound devices to four NGOs in Nigeria to further strengthen maternal care in the region and minimize postnatal complications. [Learn more ▶](#)



### VIETNAM

In May 2021, Vietnam was hit by the Delta variant of COVID-19. GE Healthcare helped healthcare professionals in Vietnam as they worked to treat patients with COVID – delivering more than 800 ventilators, including some units delivered by road from its production site 2,500 km away in Wuxi, China.



### IRAQ

Prematurity is the leading cause of newborn deaths throughout Iraq. According to the annual report of the Iraqi Ministry of Health, more than 13,000 infants died in the country in 2020. GE Healthcare and the Iraqi Ministry of Health have signed an agreement to build 22 Newborn Intensive Care Units to improve access and quality of care for the country's most vulnerable population. [Learn more ▶](#)

## GE HEALTHCARE'S APPROACH TO SCOPE 3 GREENHOUSE GAS EMISSIONS

When GE announced its ambition to be a net zero company by 2050 for sold products, it focused on jet engines and gas turbines (described above) which represent the majority of GE's greenhouse gas emissions. At GE Healthcare, climate action is an integral part of our mission to improve outcomes for patients, healthcare providers and researchers around the world, and it is our responsibility to intensify our actions to further reduce our emissions. To further our progress, we've committed to the Science Based Targets Initiative (SBTi). In addition to setting

ambitious Scope 1 and 2 targets for our own operations (see page 91), we recognize that our carbon footprint includes indirect value chain (Scope 3) emissions. In 2021, we initiated a third-party review of our value chain footprint. This review aims to identify where we can most effectively collaborate with our suppliers, partners, customers, and employees to reduce carbon emissions across the lifecycle of the business. One of our largest value chain impacts centers around the use of our sold products, and a significant area is emissions associated with anesthetic gases utilized in our anesthesia machines in clinical settings. As part of our SBTi commitment, we intend to develop Scope 3 targets that align with limiting global warming to below 1.5 degrees Celsius.

## New technology for sustainability and efficiency

At GE Aviation, we are taking bold action to define and develop technologies for the next generation of engines, including launching three key efforts to explore new engine architectures, to develop hybrid-electric capability and to enable the use of alternative fuels. Leadership in aviation requires deep technical expertise, coupled with the fortitude and vision to enable breakthroughs required to achieve a step-change in engine efficiency.

In 2021, the global aviation industry committed to achieve net zero carbon emissions by 2050. Achieving that goal will require broad cooperation and significant investment across all sectors of the industry. As the propulsion provider for three of every four commercial departures, we are energized by the opportunity and responsibility to lead the way forward.

These efforts include a partnership between Airbus and CFM International,\* our joint company with Safran Aircraft Engines, to conduct flight tests of a hydrogen-powered jet engine; a partnership with NASA and Boeing to develop and fly a megawatt-class hybrid electric propulsion system; and a joint CFM effort to develop and fly an advanced, open fan demonstrator called RISE, short for Revolutionary Innovation for Sustainable Engines. The goal of the RISE Program is to achieve at least 20% lower fuel consumption and CO<sub>2</sub> emissions compared to today's most efficient engines.

At the same time, we have a significant opportunity to improve the efficiency of the engines already in operation. This includes continued work to advocate for policies that will enable a much larger supply of Sustainable Aviation Fuel (SAF), which offers up to 80% less lifecycle carbon emissions than traditional jet fuel. In December, we partnered with United Airlines to power the world's first experimental flight with passengers using 100% SAF in one of the two engines, and all our engines today are capable of using approved SAF for passenger operations.

Through GE Digital, our customers have access to a series of emissions-reducing optimization software. We are also developing and deploying new technologies like our 360 Foam Wash, which enables airlines to recover performance of their engines by using a specially formulated solution that reduces built up deposits inside the engine, improving performance and reducing fuel consumption and CO<sub>2</sub> emissions.

**JOHN SLATTERY**

Executive Vice President and  
Chief Commercial Officer, GE Aviation

How we operate is just as important as maturing new technologies, and we are fully committed to our goal of being carbon neutral in our operations and facilities worldwide by 2030. To reach this goal, we are moving on multiple fronts, including upgrading buildings to more energy efficient heating and cooling systems, seeking lower carbon energy sources to power our sites and using lean practices to reduce waste—not only in our manufacturing processes but also to reduce unnecessary lighting, electricity, water and other resource usage. Additionally, we are exploring the use of SAF in our engine and component test facilities.

As these efforts show, meeting our sustainability goals have become an even bigger part of our business strategy over the last year. Our annual business priorities shared with all employees include targets for reaching our goals of carbon neutral operations and net zero use of sold products. We've also implemented a cross-functional Aviation sustainability operating rhythm with leaders across the business responsible for overseeing our progress on our priorities to decarbonize. Composed of leaders from lean operations, engineering, commercial engine programs, government affairs and others, this group meets twice a month to look at managing resources to support these efforts, discuss opportunities for collaboration across the aviation industry and incorporate learnings to better support our customers in their own efforts to reduce flight CO<sub>2</sub> emissions.

We are able to undertake these efforts today because of the underlying strength of our business. We benefit enormously from the decisions on technologies and partnerships made by the generations of proud GE Aviation employees who preceded us, and we are paying that forward with our commitment to decarbonization.

\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines

## Our technologies today

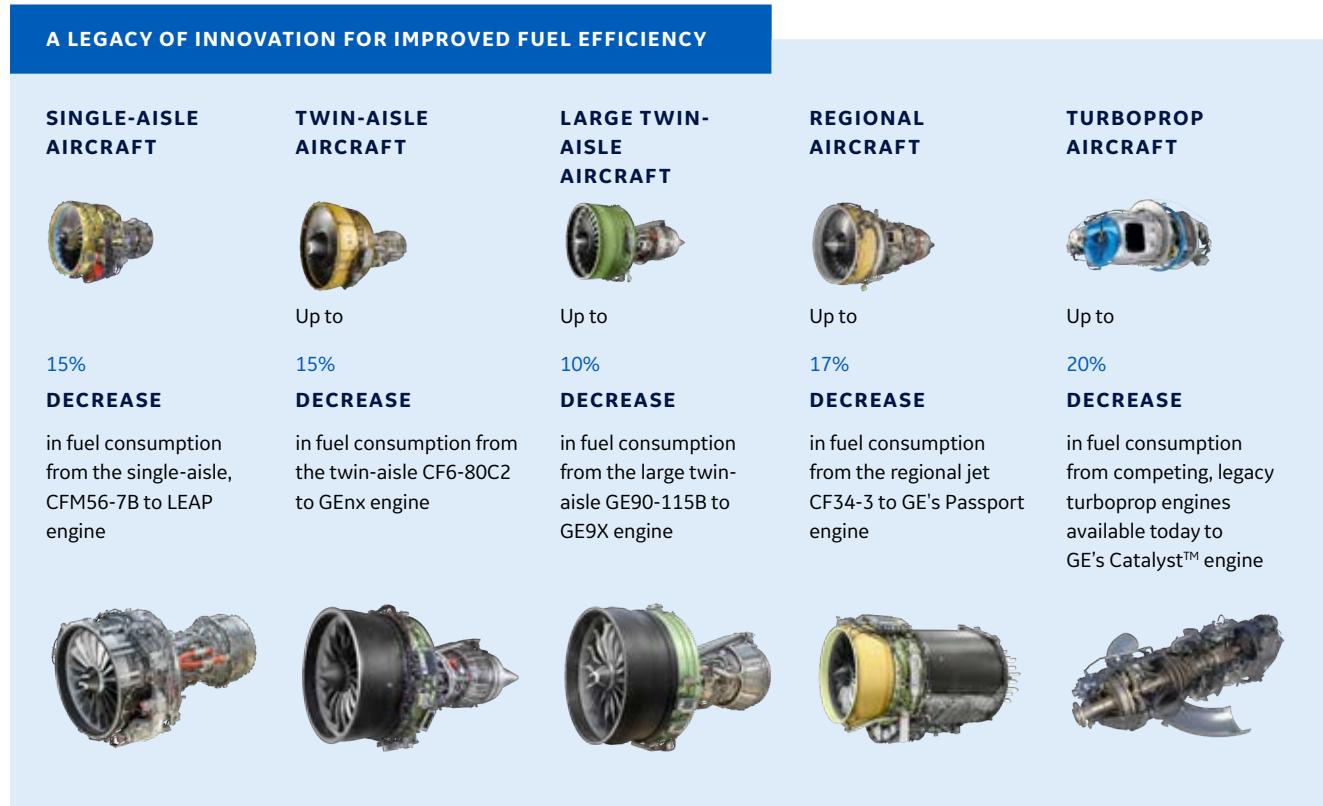
At GE Aviation, we never stop innovating. As one of the world's largest suppliers of aircraft engines, systems and services, GE Aviation continues to lead the industry in developing technologies to reduce CO<sub>2</sub> emissions from flight. To that end, GE spent \$1.6 billion<sup>6</sup> in research and development in 2021, including emissions-reducing aviation technologies while continuing to put safety first.

This commitment to innovation and investment over decades has led to the following engines, services and software available now to reduce CO<sub>2</sub> emissions from the existing fleet in service:

### ENGINES

From the GE9X, which is the culmination of our decade-long commercial product renewal, to the GE Passport and Catalyst business and general aviation engines, to the T901 and T408 turboshafts for military helicopters, we have the industry's broadest array of advanced engines.

Our newest engines are designed to offer better fuel efficiency and lower CO<sub>2</sub> emissions than their predecessors with advances in engine architecture, aerodynamics and advanced materials. Technologies such as Ceramic Matrix Composites and additive manufacturing have led to lighter parts with higher capabilities. As a result, today's commercial aircraft engines consume 40% less fuel compared to engines manufactured in the 1970s and 1980s.



### SYSTEMS

GE Aviation's Systems business continues to bring additional efficiencies to aircraft performance. These technologies include power generation, conversion and distribution systems focused on electrification, avionics solutions that optimize flight paths, and more efficient and quieter integrated propeller systems.

and increased engine time on wing. GE's 360 Foam Wash is approved for use on multiple GE engine programs, including models of GE90, GEnx, CF34 and CF6, as well as Engine Alliance's<sup>7</sup> GP7200 engines.

Toward a more circular economy, we also consider the lifecycle of our engines. Currently, there are more than 21,000 total repairs in our catalogs to restore worn GE and CFM engine parts to serviceable conditions. Additionally, GE and CFM industrialized more than 1,500 repairs in 2021, increasing repair capability. As a result, GE maintenance, repair and overhaul facilities globally repaired approximately 2.5 million engine components in 2021 using these industrialized processes. Additionally, our used serviceable materials business purchases used engines and parts, performs necessary inspections and repairs, and facilitates return of serviceable parts into the aviation industry. When metal parts are no longer repairable, they are recycled when possible.

### SERVICES

GE's 360 Foam Wash is an advanced on-wing cleaning technology with a proprietary detergent to help ensure that engines continue to operate efficiently. In the Middle East and Asia-Pacific regions, GE's 360 Foam Wash has been found to improve engine performance by reducing build-up of deposits in the engine, lowering engine exhaust temperatures and improving engine compressor efficiency. These improvements led to reduced fuel consumption, lower CO<sub>2</sub> emissions

<sup>6</sup> 2021 GE, customer and partner funded R&D

<sup>7</sup> Engine Alliance is a 50-50 joint company between GE and Pratt & Whitney

## SOFTWARE

Aviation software solutions from GE Digital are already helping the industry accelerate toward net zero CO<sub>2</sub> emissions. These digital solutions are empowering airlines to take the data they have available to them today, and analyze and take action on it across all key areas of their operations. Airspace Insight helps operators optimize flight paths to save fuel and reduce CO<sub>2</sub> emissions and identifies unnecessary flight paths over environmentally-sensitive areas to reduce pollution. FlightPulse® enables pilots to monitor their own fuel consumption and savings performance. And our new Fuel Benchmarking program—part of Fuel Insight—enables airlines to understand how their fuel savings performance compares to their peers so they can see what best-in-class truly looks like when it comes to decarbonization.

## ALTERNATIVE FUELS

Sustainable Aviation Fuel—or SAF for short—is jet fuel made from alternative sources and processes than those for fossil-based fuels, such as plant-based materials, fats, oils and greases, alcohols, waste streams, captured CO<sub>2</sub> and other feedstocks. GE Aviation has been actively involved in assessing and qualifying SAF since 2007 and works closely with SAF producers, regulators and operators to ensure SAF can be widely adopted for use in aviation. More than 420,000 commercial flights have been operated using SAF blends since 2011, according to industry association Air Transport Action Group. The widespread use of SAF has the potential to dramatically reduce fuel lifecycle carbon emissions up to 80% compared to jet fuel produced from petroleum. SAF made by new approaches that convert renewable energy to liquid fuel has the potential to eliminate lifecycle CO<sub>2</sub> emissions.

All GE, CFM International\* and Engine Alliance<sup>8</sup> engines in service today—and in the future—can operate with approved SAF. That's because all approved SAF available today is considered drop-in. Drop-in SAF means the fuel meets current petroleum-based jet fuel requirements. It can be substituted for fossil-based jet fuel without any modifications to engines and airframes, and is therefore compatible with the existing commercial fleet, as well as with other parts of the fuel distribution and storage infrastructure.

Currently, SAF approved for use is a blend of petroleum-based Jet A or Jet A-1 fuel and a SAF component with a maximum blend limit of 50%. One of GE's fuel experts chairs an international task force to develop standardized industry specifications supporting adoption of 100% drop-in SAF, which does not require blending with conventional jet fuel. Drop-in 100% SAF is not yet qualified by ASTM International, an organization that develops technical standards.

7  
types of SAF  
blends are  
approved for jet  
engines today

420k  
commercial flights  
worldwide operated  
using SAF blends since  
2011<sup>9</sup>

50%  
maximum blend  
limit of current SAF  
with conventional  
jet fuel



## FLIGHT MANAGEMENT SYSTEM REDUCES EMISSIONS

GE Aviation's Flight Management System (FMS) provides increased situational awareness and operational efficiencies on more than 12,000 aircraft worldwide, including models of the Boeing 737 and military aircraft. The FMS is designed to allow an airplane to fly at higher altitudes over longer routes and allows for an optimized descent that is a more gradual approach to the airport than a stair-step approach. Flying at higher altitudes longer can reduce carbon and noise emissions. GE Aviation's FMS-optimized descents offer a potential 6% to 12% fuel savings, reduced CO<sub>2</sub> emissions and roughly 20% lower NO<sub>x</sub> emissions for operators compared to traditional approaches.



## MORE FUEL-EFFICIENT CATALYST ENGINE TAKES TO THE SKIES

The Catalyst™ engine, the first new, clean-sheet turboprop engine to enter the business and general aviation market in more than 50 years, completed its first flight in 2021 on a Beechcraft King Air Flying Test Bed. Designed and manufactured in Europe, the Catalyst is the first turboprop engine to contain weight-saving additive or 3D printed metal components. The engine's 16:1 overall pressure ratio enables it to achieve as much as 20% better fuel efficiency compared to competitors in the same size class.

## SAF TESTING AND DEMONSTRATION

GE Aviation's extensive SAF testing and demonstration efforts include the following **industry firsts for the use of SAF in at least one engine**:

2008	2010	2011	2011
SAF commercial demonstration flight, powered by CF6 engines	SAF helicopter flight, powered by T700 engines	SAF commercial revenue flight, powered by CFM56 engines	SAF transatlantic flight of a large freight commercial airplane, powered by GEnx engines

<sup>8</sup> Engine Alliance is a 50-50 joint company between GE and Pratt & Whitney.

<sup>9</sup> Air Transport Action Group: <https://aviationbenefits.org/environmental-efficiency/climate-action/sustainable-aviation-fuel/>.

\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines.



#### JAPAN AIRLINES LICENSES 360 FOAM WASH

Japan Airlines became the first global CF34 engine operator to be licensed for the patented engine cleaning system, which the carrier estimates will save up to 82,000 liters of fuel and up to 285 metric tons of carbon emissions a year by replacing some water washes with foam washes for CF34 engine cleaning.



#### ADVANCED MATERIAL MILESTONE

GE Aviation's Asheville, North Carolina, facility in 2021 shipped the 100,000th turbine shroud made from Ceramic Matrix Composites (CMC) for the CFM\* LEAP engine. CMCs, an advanced material containing silicon carbide fibers, are one-third the weight of traditional metal alloys with higher temperature capability. The material helps improve engine thermal efficiency, thus reducing fuel consumption and carbon emissions.



#### GE DIGITAL'S FUEL INSIGHT HELPS ANA MANAGE FUEL USE

Japanese airline All Nippon Airways selected GE Digital's Fuel Insight software after extensive testing to facilitate three fuel saving initiatives: engine out / taxi in, idle reverse thrust and climb. Fuel Insight helps airlines meet their 2050 net zero emissions goals by transforming their flight and operational data into easy-to-understand visualizations that enable them to see how much fuel they're using, determine how much fuel is wasted, identify ways to save and more. Airlines currently using Fuel Insight can save an average of half a metric ton or 600 kilograms of CO<sub>2</sub> per flight.



#### IDENTIFYING INEFFICIENCIES AT 30,000 FEET

A typical flight emits 900 to 1,000 kilograms of excess carbon due to inefficient airspace design and air traffic control (ATC) practices. From airlines and airports, to ATC and airspace designers, GE Digital's Airspace Insight software enables collaboration across all necessary stakeholders to identify and quantify airspace inefficiencies to reduce overall flight time, fuel burn and carbon emissions. Malaysia's largest, low-cost carrier, AirAsia, uses Airspace Insight to have greater visibility into the areas of its flight operations where unnecessary fuel burn is occurring. In just one year using the software, the airline was able to avoid emitting 4,013 metric tons of excess carbon, which would be the same as planting 191,095 trees.

2016	2018	2021	2021	2021
Military jet flight using 100% SAF, powered by F414 engines	Commercial airliner flight using 100% non-drop-in SAF, powered by GE90 engines	First power-to-liquid SAF commercial flight in 2021 powered by CFM56 engines	SAF flight for the commercial Sikorsky S-92 helicopter, powered by CT7 engines	Experimental passenger flight using 100% drop-in SAF in one of the two engines, powered by CFM LEAP engines

\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines.

## Our breakthrough technologies for the future

GE Aviation is already at work today to develop breakthrough technologies for the benefit of us all tomorrow, such as advanced new engine architectures like open fan, hybrid electric propulsion and hydrogen fuel combustion. Since June 2021, three major new technology demonstration programs were launched. Multiple ground and flight tests planned this decade will demonstrate new technologies for use in future commercial aircraft engines that could enter service beginning in the mid-2030s.

### CFM RISE



#### CFM RISE PROGRAM

In June 2021, GE Aviation and Safran launched a bold technology development program. The CFM RISE\* (Revolutionary Innovation for Sustainable Engines) Program will demonstrate and mature a range of new, disruptive technologies for future engines that could enter service by the mid-2030s.

The program goals include reducing fuel consumption and CO<sub>2</sub> emissions by more than 20 percent compared to today's most efficient engines, as well as ensuring compatibility with alternative energy sources such as Sustainable Aviation Fuel and hydrogen.

Central to the program is achieving state-of-the-art propulsive efficiency for the engine, including advanced architectures such as the open fan. The open fan design is a key enabler to achieving significantly improved fuel efficiency while delivering the same speed and cabin experience as current single-aisle aircraft. The program will also use hybrid electric capability to optimize engine efficiency while enabling electrification of many aircraft systems.

GE has continually advanced state of the art open fan systems. In the 1980s, GE successfully flight tested the GE36 engine, an open fan jet engine demonstrating significant fuel savings compared with conventional ducted front fan engines in the same size class. Since then, GE collaborated with the U.S. FAA through the CLEEN Program and with NASA on sub-scale wind tunnel test campaigns demonstrating better fuel efficiency compared to the CFM56-7B engine while achieving sufficient margins to current and anticipated future noise requirements.

Avio Aero, GE Aviation's business in Italy, contributed to the development and testing of counter rotating open fan architectures under Europe's Clean Sky research program. Under the Clean Sky 2 program, Avio Aero supported optimization of open fan architectures through design and integration studies conducted with airframers. Avio Aero continues to support and coordinate CFM RISE Program technology development among GE Aviation's European teams.

The open fan engine design being developed through the CFM RISE Program has been made simpler and lighter with new approaches such as single-stage rotating carbon fiber composite fan blades and stationary outlet guide vanes.

#### COMPACT ENGINE CORE

Through the CFM RISE Program, GE Aviation is also working with NASA to research advanced engine cores for single-aisle aircraft. As part of NASA's Hybrid Thermally Efficient Core (HyTEC) project, GE Aviation was awarded in 2021 multiple cost-share contracts for engine core development valued at more than \$20 million when including both NASA and GE investments.

GE Aviation will test and mature compact jet engine core designs, including compressor, combustor and high-pressure turbine technologies to improve thermal efficiency. Continued development of Ceramic Matrix Composites (CMCs), an advanced heat-resistant material, is also a key part of the effort to improve fuel efficiency and reduce emissions.

### HYDROGEN



#### HYDROGEN COMBUSTION

Along with Safran Aircraft Engines, GE Aviation announced in February 2022 that CFM International is collaborating with Airbus on a hydrogen demonstration program. Plans are underway to develop direct hydrogen combustion engine technologies for ground and flight tests later this decade.

GE Aviation engineers and colleagues across the business are rising to this challenge with a global hydrogen team already in place and growing. CFM International will modify a GE Passport engine for testing by designing a new cryogenic fuel delivery system, hydrogen combustor and fuel controls. This is no easy feat, requiring a significant change to the propulsion system to be capable of safely burning liquid hydrogen, which doesn't generate carbon emissions during the combustion process.

Efforts to design a new hydrogen combustor engine will draw from GE's more than 8 million hours of operating experience with hydrogen combustion with land-based gas turbines.

*GE Aviation continues to advance carbon fiber composite and CMC materials for next-generation aircraft engines, including looking at expanding composite materials to more areas of an engine.*



\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines. RISE is a registered trademark of CFM.

## HYBRID ELECTRIC



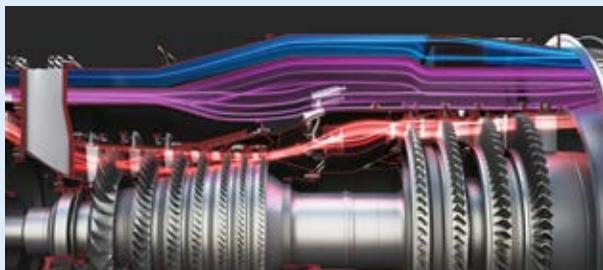
## ELECTRIFICATION FOR AIRCRAFT AND PROPULSION SYSTEMS

Hybrid electric propulsion technologies that save fuel and optimize engine performance are key to GE Aviation's commitment to help reduce carbon emissions for a more sustainable future of flight. Hybrid electric technologies are highly compatible with Sustainable Aviation Fuel and hydrogen, as well as advanced engine architectures like open fan and new advanced engine core designs.



## GE PARTNERS WITH BOEING, BAE SYSTEMS ON HYBRID ELECTRIC FLIGHT TESTS

GE Aviation has selected Boeing and BAE Systems to support its hybrid electric flight demonstration program with NASA. Boeing and its subsidiary Aurora Flight Sciences will provide GE Aviation with airplane modification, system integration and flight-testing services. BAE Systems will design, test and supply energy management components for the megawatt-class propulsion system.



## XA100 ADAPTIVE CYCLE ENGINE PROGRAM ADVANCES MILITARY PROPULSION TECHNOLOGIES

GE's XA100 adaptive cycle engine currently in development with the U.S. Air Force aims to improve fuel efficiency 25%. The program features three revolutionary technologies for the future of military propulsion:

- Ability to switch between a high-thrust mode for maximum power and a high-efficiency mode for optimum fuel savings and loiter time;
- A third-stream architecture that provides a step-change in thermal management capability; and
- Extensive use of advanced materials and manufacturing, including ceramic matrix composites (CMCs), polymer matrix composites (PMCs) and additive manufacturing.

In 2021, NASA and GE Aviation launched a hybrid electric technology demonstrator program. After years of developing individual components of a hybrid electric system—motors, generators and power converters—GE will systematically mature a megawatt-class integrated hybrid electric powertrain to demonstrate flight readiness for single-aisle aircraft. Plans are to conduct ground and flight tests of the hybrid electric propulsion system by the mid-2020s using a modified Saab 340B testbed and GE's CT7-9B turboprop engines.

Our Systems business has designed and manufactured power conversion, distribution and control systems for commercial aircraft for over 30 years. GE Aviation Systems continues to advance these products with technologies such as GE-developed silicon carbide transistors to increase efficiency, power density, thermal performance and reliability while protecting aircraft safety. These technologies are integral to the development of GE Aviation's hybrid electric powertrain demonstrator with NASA, with development work taking place at the Electrical Power Integration System Center (EPISCenter) in Dayton, Ohio, and the Electrical Power Integration Centre in Cheltenham, UK. EPISCenter has the capacity to test hybrid or fully electric powertrains with up to 15 megawatts of available power.



## FLIGHTPULSE FOR BUSINESS JETS

GE Digital is developing new software to help the business aviation industry realize a more sustainable future. This new technology will empower pilots in this space to monitor their own fuel consumption and savings performance. With secure access to flight data and personal analytics, pilots will be able to self-discover areas to optimize operational efficiency and maximize emission reduction.



## FIRST PASSENGER FLIGHT USING 100% SAF IN ONE OF THE TWO ENGINES

In an industry first, United Airlines on December 1, 2021, operated the first experimental flight with passengers using 100% drop-in SAF in one of the plane's two engines. The flight was powered by CFM LEAP engines and GE Aviation engineers completed technical reviews to help make the demonstration possible.

GE Aviation's engineering leader for fuels and fuel additives leads an industry committee helping define standards for 100% drop-in SAF so it can be approved for industry use. The United flight contributes to the research and development activities to standardize 100% SAF that doesn't require blending with conventional jet fuel, further reducing lifecycle CO<sub>2</sub> emissions.

## GE ADDITIVE: DRIVING SUSTAINABILITY THROUGH TRANSFORMATIVE TECHNOLOGY

Additive manufacturing (often referred to as 3D printing) is a transformative technology that has the potential to contribute solutions to many of our major societal challenges, such as climate change, digitalization and decreasing natural resources.

GE Additive, a subsidiary of GE Aviation, was formed in September 2016 to meet market demand and build on GE's decades of advanced manufacturing and materials science knowledge, additive R&D and GE Aviation's learnings as an early adopter of additive technology. Today, GE Additive is a leader in metal additive technology, with a diverse customer base spanning multiple industries, and with a particular strength in highly-regulated sectors with complex supply chains, such as aerospace and defense, medical and automotive.

Since the late 1980s, metal additive manufacturing has been mostly used for tooling and concept modeling in automotive, medical and aerospace industries. In the 2010s, research in corporate R&D labs and federal agencies drove breakthrough applications of the technologies, and by 2015, GE Aviation had gained FAA certification for the first additively manufactured production part.

Employing new manufacturing technology, engineers dreamt up part-geometries with complexity only buildable by additive manufacturing. These designs were then transmitted to 3D printers full of metal powder. The printers' lasers or electronic beams heated up and melted particles together in thin layers, gradually forming structures never before built.

### AM FORWARD

In May 2022, GE Aviation joined the federal government, and several other large industry players, to launch 'AM Forward' – a public-private partnership aimed at strengthening U.S. supply chains by supporting U.S. based small and medium-sized suppliers' adoption and deployment of additive manufacturing, or industrial 3D printing capabilities. GE Aviation will support the goals of AM Forward by committing to:

- Targeting small-and medium-sized suppliers to compete on 50 percent of requests for quotes that are sent out on products manufactured using additive or related technologies
- Targeting 30% of total external sourcing of additively manufactured parts to be purchased from a small-or medium-sized suppliers
- Improved payment terms to allow small-and medium-sized suppliers timely access to resources for operational or infrastructure investments
- Support for qualifying small-and medium-sized suppliers and training to meet GE qualification requirements

[Learn more ▶](#)

*An operator working on a GE Additive Arcam EBM metal 3D printer at Avio Aero's facility in Cameri, Italy.*



Metal 3D printing is now used in lieu of wasteful "subtractive" machining that chips away at blocks to produce shapes, or "formative" manufacturing, time-and cost-consuming processes that stress parts into particular forms.

The German Fraunhofer Institute further reports in a recent study that metal fabrication of titanium parts using laser powder-bed additive emits approximately 70% less carbon dioxide than equivalent production by computer numerical control milling processes.



### CF6 ADDITIVE REPAIR

Repair capability is a big part of GE Aviation's sustainability journey. GE Aviation Engine Services Singapore (GE AESS) is using metal 3D printing to repair CF6 engines components, which results in few parts being scrapped. The additive process uses less energy, generates less waste and has a smaller footprint. Pictured above, Lisa Tan, lead scientist at GE Aviation Engine Services Singapore, meets with Singapore Minister for Trade and Industry, Gan Kim Yong and Singapore Economic Development Board Executive Vice President, Tan Kong Hwee. [Learn more ▶](#)

## Our collaborations



Technicians work on a CFM LEAP engine.

GE Aviation fully supports aviation industry efforts to decarbonize, which requires a holistic, global approach. Meeting the industry's goal of net zero CO<sub>2</sub> emissions from flight by 2050 requires deploying revolutionary technologies to reduce emissions and to advocate for increased use and availability of alternative fuels, such as Sustainable Aviation Fuel (SAF) and hydrogen.

### AVIATION INDUSTRY DECLares NET ZERO CO<sub>2</sub> GOAL

Members of Air Transport Action Group (ATAG), including GE Aviation, adopted in October 2021 a long-term climate goal of net zero carbon emissions by 2050, confirming the aviation industry's commitment to reduce carbon emissions in support of the Paris Agreement 1.5 degrees Celsius goal. This follows an earlier industry goal set in 2009.

GE and CFM International\* are funding members with representation on the board of directors of ATAG. GE Aviation is also a member of the U.S. Aerospace Industries Association, which announced a similar commitment for commercial aviation manufacturers to work with airline customers and governments globally to achieve net zero carbon emissions by 2050.

The European Commission is also on an ambitious trajectory to reduce CO<sub>2</sub> emissions from flight. While governments work on legislative proposals, the European aviation industry issued Destination 2050, a report supported by GE Aviation, announcing a pathway to net zero CO<sub>2</sub> emissions by 2050 and a 55% reduction by 2030 compared to 1990 levels.

### AVIO AERO MEMBER OF CLEAN AVIATION

Avio Aero, a division of GE Aviation based in Europe, has been a member of Clean Aviation, formerly known as Clean Sky, since its founding in 2008. Currently, Avio Aero is on Clean Aviation's governing board. The public-private partnership with the European Commission is the largest R&D program devoted to decarbonizing Europe's aviation industry. Avio Aero has developed innovative propulsion technologies through Clean Sky, such as how to reduce CO<sub>2</sub>, NO<sub>x</sub> and noise emissions from turboprop aircraft and engines through the More Advanced and Efficient Small TuRbOprop engine (MAESTRO) and Innovative turboprop configuration (IRON) projects.

### AVIATION CHIEF TECHNOLOGY OFFICERS FORUM

The Chief Technology Officers (CTOs) of seven of the world's leading aerospace manufacturers in 2021 reaffirmed their commitment to achieving more sustainable aviation and to reaching industry-wide ATAG targets in a joint statement. GE Aviation's Chief Engineer joined the CTOs of Airbus, Boeing, Safran and more in issuing a call to action to policymakers, research institutions, suppliers, fuel producers and airport operators to build on the progress made in recent years and deliver on the aviation sector's sustainability agenda.

### ROUNDTABLE ON SUSTAINABLE BIOMATERIALS (RSB)

GE Aviation has joined the Roundtable on Sustainable Biomaterials (RSB) to collaborate on standards-setting and policy discussions that incentivize greater production of SAF. RSB is a global membership organization that works with stakeholders in diverse sectors all over the world to lead the socially and environmentally sustainable transition to a bio-based and circular economy.

### U.S. FAA CLEEN PROGRAM

GE Aviation is advancing groundbreaking work to develop noise- and emissions-reducing technologies for aircraft engines under a research partnership announced in 2021 by the U.S. Federal Aviation Administration (FAA).

GE and the U.S. FAA will invest nearly \$55 million over five years to accelerate development of a series of technologies for more sustainable aviation, including open fan engine architecture, electrification, noise-lowering technologies, and more, as well as ongoing research into alternative jet fuels through the FAA's Continuous Lower Energy, Emissions and Noise (CLEEN) program. This is the third CLEEN award GE Aviation has received since 2010.

\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines

## GE Aviation's actions toward its 2050 Scope 3 net zero ambition

In the preceding eight pages, GE Aviation identifies the technology they are delivering today and GE Aviation's investments for the breakthrough technologies of tomorrow. As these pages show, GE Aviation's investments toward decarbonization technologies are uniquely diverse. GE is innovating these technologies both for our customers and for the planet as we work to play a leadership role in the aviation sector meeting its 2050 net zero goals.

In 2021, GE announced an ambition to be a net zero company by 2050, for its sold products by 2050, which is the most impactful and relevant emissions category given the nature of our businesses. Working with external advisors and experts over the course of 2021, we further refined our focus to power turbines and aircraft engines, which account for the majority of GE's greenhouse gas emissions across all reporting scopes. By focusing Aviation efforts on reducing Scope 3 use of sold products emissions, we will more effectively deliver the type of technology breakthroughs our customers are relying on to achieve their own net zero ambitions.

In working to lead the development of technology for the aviation sector, we are informed by the role of aviation for sustainable development and broader industry trends. Aviation and the ability to travel are essential to sustainable development and building a world that works. Everyone in the world should have the right to stay connected to family, friends, job opportunities, healthcare, and other essential benefits of travel. Access to safe, more sustainable, and affordable transportation is essential to lifting the quality of life for all people and promoting equity. The United Nations affirms the essential role of transportation in sustainability through Sustainable Development Goal (SDG) 8 (decent work and economic growth), 9 (industry, innovation, and infrastructure), 10 (reduced inequalities), and 11 (sustainable cities and communities) among others.

Air travel today is responsible for 2.1% of global CO<sub>2</sub> emissions, according to estimates from Air Transport Action Group (ATAG). However, as global populations and economies continue to grow, aviation industry passenger traffic is forecast to grow around 3% a year through 2050, according to ATAG. In order to meet the goals of the Paris Climate Agreement and reduce aviation sector emissions to the level needed to reach net zero emissions by 2050, there are clearly some big challenges ahead.

Both the International Air Transport Association (IATA) and ATAG's "Waypoint 2050" report highlight the need for a multifaceted approach to reach the target of net zero carbon emissions by 2050. IATA suggests that the industry will need to reduce 1.8 gigatons of carbon in 2050 to achieve net zero. Clearly no single solution is capable of delivering this level of CO<sub>2</sub> emissions reduction.

All industry participants — airlines, airports, aerospace manufacturers, fuel providers, governments, and more — have a role to play. Aerospace manufacturers are working to provide technology advances to deliver aircraft and engines that generate significantly less CO<sub>2</sub> emissions with capability to operate with both blended and 100% alternate fuels. Airlines and airports need to work together to drive improvements like electrification of ground handling operations. Fuel providers, both traditional and new entrants, need to invest to develop and bring sustainable fuels to the marketplace at volume. Aviation authorities need to promulgate regulations in a timely fashion that provide clear certification approaches for new and emerging technologies. Governments need to provide the right incentives to drive investment and adoption of new technologies and implement long discussed initiatives like the Single European Sky initiative to streamline air traffic management. Governments and private industry also have key roles to play in supporting development of new infrastructure needed to support alternate fuels.

As described above, at GE Aviation, we are working on technologies to improve engine fuel efficiency and support the development of alternative fuels compatible with GE engines with our unparalleled engineering and innovation know-how. We are also advancing the breakthrough innovations and ideas that will help the whole industry move even faster.

### OUR NET ZERO PRINCIPLES

As one of the world's leading companies in the aviation sector, we know that the challenge is complex and we have to be nimble and committed as a company and with our partners to innovate the technology to succeed over the years and decades to come. We have several principles that are guiding our approach to our net zero ambitions:

- **Credibility:** Knowing this path will take decades, we prioritize credibility first and foremost with our stakeholders to share what we objectively know and don't know. This also means as we get better and more credible information, we will share that with our stakeholders.
- **Continuous learning:** Our analysis below is based on how we see things today. We are committed to continuous learning to enable more insights and opportunities to make a difference, and we expect to make progress over time.
- **Collaboration:** We know no one company can solve these issues alone. With GE's spirit of humility, we welcome continued collaborations with our customers, investors, regulators, and peers to achieve success toward our goals. We summarize several of these key collaborations on page 31.
- **Commitment to innovation and technology:** Simply stated, GE's role in the sector's path toward net zero is to deliver state of the art technology today to make progress while innovating the breakthrough technologies for tomorrow. Below, we synthesize the previous eight pages regarding how we see various technologies contributing toward this pathway.

Applying these principles, we consider three pathways toward the net zero ambition:

#### Actions pre 2020

##### Building on substantial contributions from past action.

Our efforts toward decarbonization began well before 2021. GE has long innovated its products to drive efficiencies and reduce CO<sub>2</sub> emissions by delivering state of the art products. Our past efforts since 2010 lay a strong foundation for the progress forward.

#### 2020-2030

##### Driving continued progress this decade.

We are prioritizing the 2020s as a decade of action, with a focus on innovating the technology solutions needed to achieve net zero emissions in 2050. This will take several forms, including advancing technology with the potential to further reduce carbon emissions and carbon intensity in this decade and beyond.

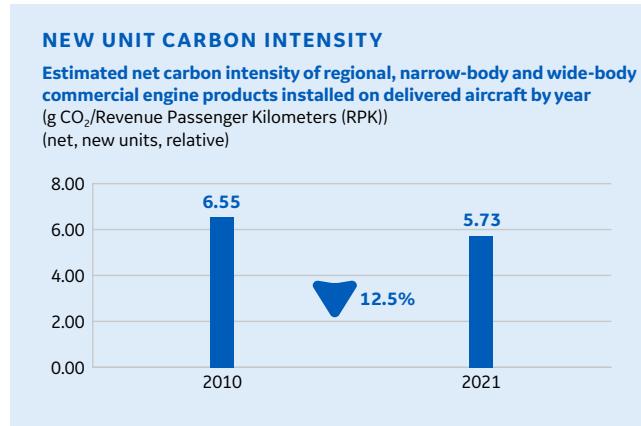
#### 2030-2050

**Innovating for the future.** While we are optimistic about the role of GE's technologies to make progress through 2030, we know they will not be enough to achieve 2050 net zero ambitions. We are investing today to innovate the next generation of breakthrough technologies to achieve the step changes that will be needed for the aviation sector.

## 1. BUILDING ON SUBSTANTIAL CONTRIBUTIONS FROM PAST ACTION

GE Aviation is a leader in the aviation industry's path to net zero carbon emissions with evolutionary, state of the art technology today and investments in revolutionary, breakthrough technologies for tomorrow. GE's legacy has been to innovate technology the world needs to improve the efficiency, reliability, and safety of civil aviation to lift up the quality of life for people everywhere.

From the GE9X, which is the culmination of our decade-long **commercial product renewal**, to the GE Passport and Catalyst business and general aviation engines, to the T901 and T408 turboshafts for military helicopters, we have the industry's broadest array of **advanced engines** offering better fuel efficiency and lower CO<sub>2</sub> emissions than their predecessors with advances in engine architecture, aerodynamics and materials. **Ceramic Matrix Composites** (CMCs) are lighter weight than traditional metal alloys and more heat resistant, allowing engines made with CMCs to operate at higher temperatures with less cooling air. **Additive Manufacturing** has led to lighter weight engine parts with higher capabilities and more complex designs than parts made by conventional manufacturing methods. Including engine technology introduced by GE and CFM International\* in the last decade for commercial aircraft, engines manufactured today consume 40% less fuel and emit 40% less CO<sub>2</sub> compared to engines manufactured in the 1970s.



## 2. DRIVING CONTINUED PROGRESS THIS DECADE

The aviation sector is uniquely united toward a net zero future. After GE announced our ambition in 2021 to be a net zero company by 2050, GE Aviation supported a similar 2050 goal set by Air Transport Action Group (ATAG) for net zero carbon emissions from flight. Also in 2021, GE Aviation's Chief Engineer joined other Chief Technology Officers from across the industry to call for continued focus on sustainability in the aviation sector and to continue advancing state-of-the-art in aircraft and engine design to reduce carbon emissions. GE Aviation has joined the International Aerospace Environmental Group (IAEG) to support development of standards for reporting Scope 3 use of sold products emissions across the aerospace industry. These standards will help GE measure in a way that is consistent with other aviation stakeholders how the carbon intensity of our engines is reduced over time through introduction of new technologies and services that reduce emissions.

In terms of technology and innovation, implementation of the next level step breakthrough technology will be paced by the evolution of new aircraft and engine designs, infrastructure, and regulations given the sector's unique considerations relating to safety, reliability, and the physics of aviation. Over the next decade, GE expects to continue collaboration with others in our industry to drive operational improvements and increased availability and use of Sustainable Aviation Fuel (SAF) while investing in new engine technologies to drive further reductions in the future.

GE has never been more focused on innovating technology to solve one of the world's most pressing sustainability challenges: keeping people connected while reducing climate impacts. To that end, GE spent \$1.6 billion<sup>10</sup> on aviation research and development in 2021, including emissions-reducing aviation technologies while continuing to put safety first.

GE Aviation is also investing in and supporting technologies that can be quickly adopted to further reduce aviation carbon emissions from the global fleet of engines in service.

Technologies we see having impact this decade include:

**SAF** has been shown to provide reduction in overall CO<sub>2</sub> lifecycle emissions up to 80% compared to fossil fuels. And SAF made by new approaches that convert renewable energy to liquid fuel has the potential to eliminate lifecycle CO<sub>2</sub> emissions. Currently, SAF approved for use is a blend of petroleum-based Jet A or Jet A-1 fuel and a SAF component with a maximum blend limit of 50%. One of GE's fuel experts chairs an international task force developing standardized industry specifications supporting adoption of 100% drop-in<sup>11</sup> SAF, which does not require blending with conventional jet fuel. Increased availability and use of SAF is critical to reduce emissions in the existing fleet of installed aircraft engines and future fleets. That's why GE Aviation is advocating for incentives that encourage greater development across the supply chain to make SAF more available and affordable compared to conventional jet fuel. For example, GE Aviation has joined the Roundtable on Sustainable Biomaterials (RSB), an independent, international organization helping develop market policies for SAF and helping ensure SAF feedstock is resourced responsibly.

GE's proprietary **360 FOAM WASH** is an advanced on-wing cleaning technology to help ensure that engines continue to operate efficiently. In the Middle East and Asia-Pacific regions, GE's 360 Foam Wash has been found to significantly improve engine performance by reducing build-up of deposits in the engine, lowering engine exhaust temperatures, and improving engine compressor efficiency. These improvements lead to reduced fuel consumption and lower CO<sub>2</sub> emissions. GE's 360 Foam Wash is approved for use on multiple GE engine programs, including models of GE90, GEnx, CF34 and CF6, as well as Engine Alliance's<sup>12</sup> GP7200 engines.

**GE DIGITAL** has developed a suite of software applications to help aircraft operators reduce CO<sub>2</sub> emissions and drive operational efficiencies. For example, **FlightPulse®** is a flight analytics tool that helps airline pilots improve safety and operational decision-making, including recommendations for fuel savings. **Fuel Insight** helps airlines identify areas of opportunity to improve their fuel consumption, while **Airspace Insight** offers flight path design and maintenance to assist aircraft operators in ensuring routes are optimally designed to minimize time, fuel, and emissions.

<sup>10</sup> GE, customer and partner funded.

<sup>11</sup> "Drop in" SAF fuel that can be "dropped in" to today's existing engines, aircraft, and fuel delivery and storage systems without requiring any additional changes.

<sup>12</sup> Engine Alliance is a 50-50 joint company between GE and Pratt & Whitney.

\* CFM International is a 50/50 joint company of GE Aviation and Safran Aircraft Engines that produces CFM56 and LEAP engines.

## USE OF SOLD PRODUCTS

Estimated lifetime emissions of regional, narrow-body and wide-body commercial engine products installed on aircraft delivered by year.

	2019	2021
Net emissions million metric tons CO <sub>2</sub>	45	28*
(net, new units, absolute)		

This is based on Greenhouse Gas protocol, Scope 3 use of sold products, category 11 methodology.

- \* 2021 results reflect a notable decrease in aircraft deliveries associated with COVID-19 impacts on the aviation industry and aircraft delivery delays on two aircraft types powered by GE and GE partnership engines.

## 3. INNOVATING FOR THE FUTURE

GE Aviation is investing now in the technology needed to reduce both intensity and absolute emissions toward net zero by 2050. Knowing that there is no one-size-fits-all solution, GE is investing in a diverse portfolio of future technologies across the aviation sector, and intends to advance technologies in the near, mid, and longer term. This is some of the world's most complex technology, and we are focused today on the innovation that's going to be needed for the future.

For the technologies below, we are focused on three general phases for their development. Today, we are working in our labs and research centers on the advancement of the concepts and theories. In the middle of this decade, we aspire to start flight testing these technologies. We look to the middle of the 2030s as the likely time for introducing these technologies commercially.

### OPEN FAN

The open fan design is one of the advanced engine architectures CFM is exploring through the CFM RISE (Revolutionary Innovation for Sustainable Engines) Program. The parent companies came together

in June 2021 to launch the RISE Program, targeting more than 20% lower fuel consumption and CO<sub>2</sub> emissions compared to today's most efficient engines. Central to the program is state-of-the-art propulsive efficiency through the open fan design. Since GE Aviation first debuted an unducted fan in the 1980s, the open fan engine design has been made simpler, lighter and quieter with new approaches such as single-stage rotating carbon fiber composite fan blades and stationary composite outlet guide vanes.

### ELECTRIFICATION

GE has been advancing electrification of aircraft and engine systems for more than a decade. During that time, GE engineers matured individual components of a hybrid electric system, including motors, generators and power converters. Now, we will take what has been learned in laboratories and combine these technologies into an integrated electric machine and associated power electronics for ground and flight tests planned for the mid-2020s. Through a \$260 million program with NASA, GE Aviation will mature a megawatt class hybrid electric powertrain to demonstrate flight readiness for single-aisle aircraft using a modified Saab 340B testbed, GE's CT7-9B turboprop engines and Dowty's R390 propeller. GE Aviation has selected Boeing to support the program's flight tests and BAE Systems to design, test and supply energy management components.

### HYDROGEN

CFM has also launched a demonstration program in collaboration with Airbus to ground and flight test a direct combustion engine fueled by hydrogen. CFM will modify the combustor, fuel system, and control system of a GE Passport turbofan to run on hydrogen, a fuel which doesn't generate carbon emissions during the combustion process.

GE Aviation engineers are rising to this challenge with a global hydrogen team already in place and growing. Efforts to design and validate new combustor technology compatible with hydrogen will draw from GE's more than 8 million hours of operating experience with hydrogen combustion in land-based gas and steam turbines.

Revolutionary technologies and alternative fuels both have critical roles to play in meeting the aviation industry's long-term climate goal of net zero carbon emissions by 2050 for commercial flight.

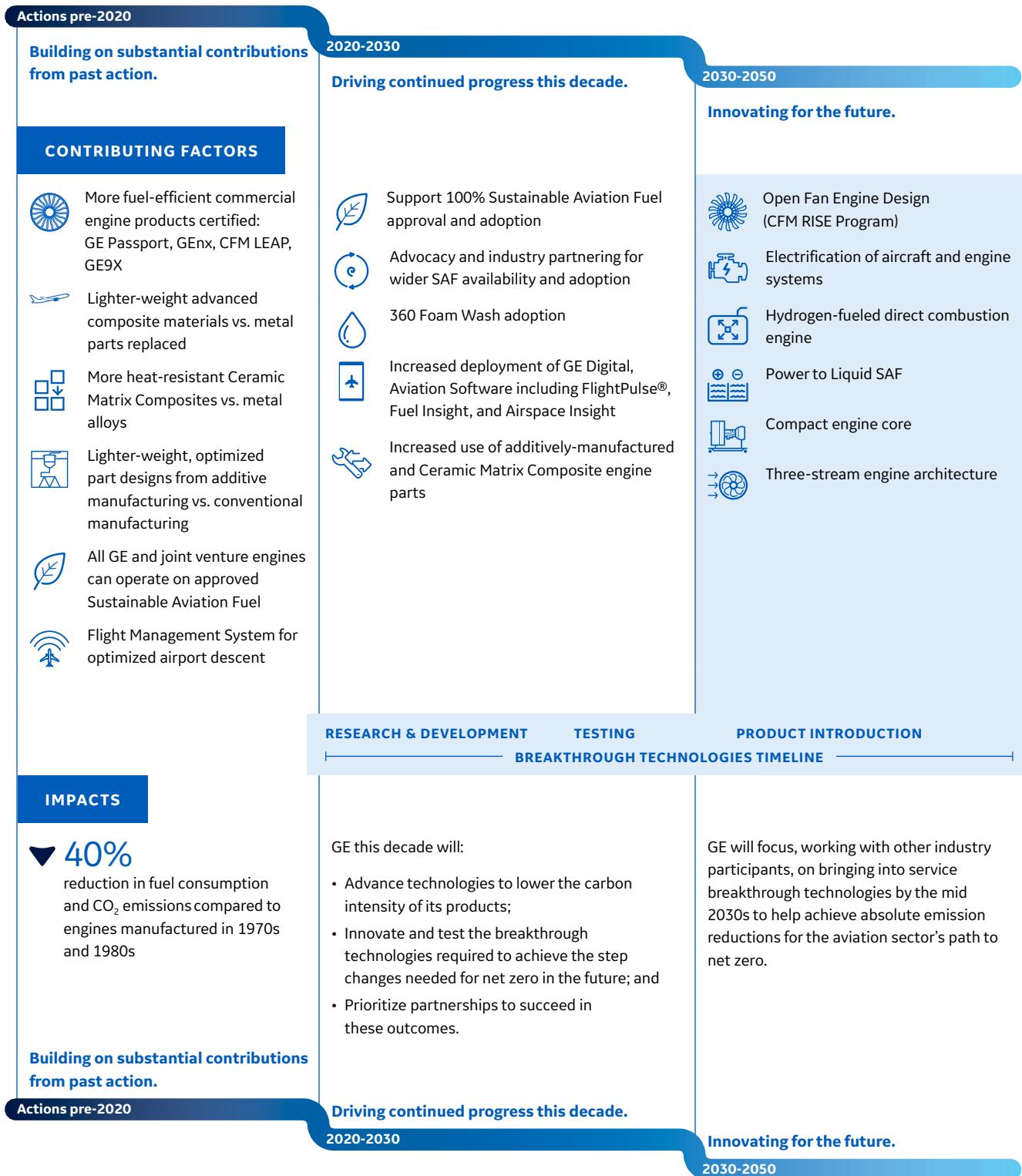
## AVIATION INDUSTRY VIEW OF ENERGY OPTIONS THAT COULD CONTRIBUTE TO CO<sub>2</sub> REDUCTION

Consistent with our collaboration principle above, GE knows that it will take partnership to succeed for net zero for the aviation sector. GE serves on the Board of the Air Transport Action Group (ATAG), which produced a Waypoint 2050 report addressing scenarios for the aviation sector toward net zero. GE's innovation and technology—SAF, hybrid electric, and hydrogen—described on these pages is core to the technical opportunities ATAG and the industry are identifying.

	2020	2025	2030	2035	2040	2045	2050
<b>Commuter</b>							
» 9-50 seats	SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF	Electric and/or SAF
» < 60 minute flights							
» <1% of industry CO <sub>2</sub>							
<b>Regional</b>							
» 50-100 seats	SAF	SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF	Electric or Hydrogen fuel cell and/or SAF
» 30-90 minute flights							
» ~3% of industry CO <sub>2</sub>							
<b>Short haul</b>							
» 100-150 seats	SAF	SAF	SAF	SAF	Electric or Hydrogen combustion and/or SAF	Electric or Hydrogen combustion and/or SAF	Electric or Hydrogen combustion and/or SAF
» 45-120 minute flights							
» ~24% of industry CO <sub>2</sub>							
<b>Medium haul</b>							SAF potentially some Hydrogen
» 100-250 seats	SAF	SAF	SAF	SAF	SAF	SAF	SAF potentially some Hydrogen
» 60-150 minute flights							
» ~43% of industry CO <sub>2</sub>							
<b>Long haul</b>							
» 250+ seats	SAF	SAF	SAF	SAF	SAF	SAF	SAF
» 150 minute + flights							
» ~30% of industry CO <sub>2</sub>							

SOURCE: ATAG Waypoint 2050 <https://aviationbenefits.org/environmental-efficiency/climate-action/waypoint-2050/>

## GE AVIATION: 2050 SCOPE 3 NET ZERO AMBITION FOR SOLD PRODUCTS



# Innovating toward a more sustainable future



GE Research is our innovation engine where the path to a more sustainable planet is being created today. Our 1,000 scientists and engineers, including more than 500 Ph.D.s., work in close partnership with our businesses, customers and government partners to drive cutting-edge solutions that drive decarbonization through the energy transition, enable precision health and create a smarter and more efficient future of flight.

With major research facilities in the U.S. and India, our global R&D presence and expansive innovation network gives us a unique vantage point to see, move and create the future of GE and our industries and to build a world that works. We have a highly contemporized research model that is externally facing and market-tested. Through GE's businesses and customers, we understand firsthand the needs of our industries and have direct channels to market with new solutions. We also continue to grow our network of external partnerships with the U.S. government and other industry partners, who are strongly aligned on many of same research priorities we have to address climate change, drive sustainability in air travel and improve healthcare. These partnerships enhance our ability to accelerate key breakthroughs to advance our sustainability goals.

Toward these ends, GE researchers are working across our industries to advance the company's goals across energy, health and flight.

With the energy transition, GE Research engineers are working with GE's Renewable Energy business and U.S. Department of Energy to scale up wind energy by enabling the design of larger rotors utilizing 3D-printing, driving a step change in generator design with superconducting magnet technology and exploring further out concepts like floating offshore wind turbines. We're working with GE Gas Power to explore new ways to remove carbon pre- and post-combustion with power plants. And GE scientists are driving a myriad of advancements "behind the plug" to prepare the grid for managing a zero carbon future.

For precision health, GE researchers are making important advancements with our government, academic and clinical research partners to help the world be better prepared for future pandemics and continue to fight the battle against chronic diseases and illnesses.

We're working with the Defense Advanced Research Projects Agency (DARPA) to develop new vaccine production technology to more rapidly respond to future viral threats. And we're making significant progress with a new non-invasive therapy using ultrasound that could one day reverse or prevent the onset of diabetes.

For the future of flight, we're integrating our deep expertise in electrical systems and propulsion technologies to support GE Aviation's efforts to advance hybrid electric propulsion, hydrogen combustion, and promote the adoption of Sustainable Aviation Fuel (SAF).

## NEW CAGE (CLIMATE ACTION@GE) LAB LAUNCHED TO REVOLUTIONIZE CARBON CAPTURE

GE Research recently launched the CAGE Lab and a new carbon capture breakout team to develop and deploy cutting-edge solutions to decarbonize the power sector and even pull carbon directly from the atmosphere itself. The carbon capture breakout team is driving a unique approach in direct air capture (DAC), which is bringing together GE's special expertise in thermal management, 3D-design and innovative materials to remove carbon from the air. The goal is nothing short of enabling an economical, large-scale solution for helping customers and companies achieve their decarbonization and climate goals.

## POWERING UP THE WORLD'S FIRST LARGE FLEXIBLE TRANSFORMER

In partnership with the U.S. Department of Energy, our business partner, Prolec GE, and utility partner, Cooperative Energy, have teamed up to develop and install the [world's first large flexible transformer](#) at the utility's substation in Columbia, Mississippi. The flexible transformer represents the next generation of hardware required to manage a rapidly changing grid. It will support higher penetrations of renewable power coming online, improve its resiliency through better fault management, frequency and voltage regulation, and ease the supply chain for utilities by serving as a universal spare for a wide range of transformers operating at different voltage levels. This technology is poised to replace an aging U.S. transformer fleet, with more than 70% older than 25 years and around 15% already exceeding the average life expectancy of 40 years.

*Project leader  
Ibrahima Ndiaye in  
front of the world's  
first large flexible  
transformer.*



## DEVELOPING FUNDAMENTAL BUILDING BLOCKS OF HYBRID ELECTRIC FLIGHT

GE Research's hybrid electric aviation team has been developing the fundamental components of hybrid electric flight for nearly two decades. In addition to supporting [GE Aviation's \\$260 million hybrid electric flight demonstrator project with NASA](#), the team is partnering with the Advanced Research Projects Agency for Energy (ARPA-E) on three projects to develop the power train, [power generation system](#) and [cabling](#), to enable a carbon neutral hybrid electric propulsion system that is suitable for supporting a 150-200 seat narrow body commercial airplane.

*Satish Prabhakaran  
is part of a team  
of GE Research  
scientists leading new  
technical advances  
in electric propulsion  
components and  
systems, helping make  
commercial electric  
flight a future reality.*



# How GE operates to succeed in our mission

At GE, we focus not just on what we do, but how we do it. We are guided by an active and engaged Board of Directors, with leadership that sets the example of a culture of integrity that is core to everything we do.

As we continue work developing our plans to form three independent, industry leaders with sustainability at their core, we continue to develop and deliver products and services for important growth sectors in energy, healthcare and aviation, which are critical to building a world that works. A key element of our sustainability strategy is to implement lean management principles across the enterprise to drive continuous improvement for purposeful outcomes. And we continue to invest in our people, one of our most valuable assets.



## Independent board leadership



**THOMAS HORTON**

Lead Director  
CHAIR: Management Development & Compensation Committee



**LESLIE SEIDMAN, CPA, GCB.D**

CHAIR: Audit Committee



**RISA LAVIZZO-MOUREY, MD**

CHAIR: Governance & Public Affairs Committee

## Board oversight

The Board of Directors (Board) sets the tone from the top for GE's culture. GE's Board has oversight responsibility for management's establishment and execution of corporate strategy. The Board also provides independent risk oversight, with a focus on the most significant risks facing the Company. The Board's Governance and Public Affairs Committee (Governance Committee) strives to maintain an independent Board with broad and diverse experience and judgment that is committed to representing the long-term interests of our stakeholders. When selecting and recruiting director candidates, the Governance Committee considers a wide range of factors, including:

- Ensuring an experienced, qualified Board with high personal integrity and character, and expertise in areas relevant to GE.
- Enhancing the Board's diversity of backgrounds, specifically attributes such as race, ethnicity, gender, cultural background and professional experience.
- Complying with regulatory requirements and the Board's independence guidelines.

As we look to our plan to form three industry-leading companies, the Governance committee will seek director candidates whose experiences support each company's future strategy and industry focus, with the goal of creating dedicated boards of directors with deep domain expertise.

The Board recognizes that the long-term interests of the Company require responsibly addressing the concerns of stakeholders beyond just shareholders, including employees, recruits, customers, suppliers, communities, government officials and the public at large.

The Board oversees the execution of GE's sustainability priorities and initiatives as an integrated part of the Company's overall strategy and risk management. Matters related to sustainability often span multiple functional categories and areas of oversight, and therefore involve discussion at the full Board level as well as individual committees.

In that regard, relevant focus areas for the Board in 2021 included:

- Safety.** Health and safety of employees and communities, including GE's response to the COVID-19 pandemic.
- Energy Transition.** Strategy for the energy transition.
- Climate change.** GE's ambition and goals related to greenhouse gas emission reductions from customers' use of sold products.

- Enterprise Risk Management.** Primary risks and opportunities across GE's businesses related to climate change and other sustainability matters.

The Governance Committee also plays an important role in GE's sustainability oversight, and has primary oversight of GE's policies and strategies related to climate change management; political spending and lobbying; human rights; environment; health and safety; and external reporting on sustainability matters. For example, the Governance Committee receives a standing update on safety incidents throughout GE at each meeting. The Audit Committee also has a role in sustainability matters to the extent these topics relate to financial reporting and regulatory requirements, including reporting on these matters in SEC filings and data quality related to this reporting.

## Board oversight of public policy and lobbying

The Governance Committee, composed solely of independent directors, oversees the Company's political spending and lobbying activities, including external reporting on such activities. This includes political and campaign contributions as well as any contributions to trade associations and other tax-exempt and similar organizations that may engage in political activity. The Governance Committee is responsible for the following:

- Policy oversight.** A yearly review of GE's political spending policies and lobbying practices.
- Budget oversight.** Approval of GE's annual budget for political activities.
- Reporting.** Reviewing semi-annual updates on political spending, both through Company expenditures and through the employee-managed political action committee (GEPAC).

GE currently discloses the names of all trade associations receiving more than \$50,000 from the Company, including the portion of the Company's payment used for lobbying or political expenditures, as well as any contributions to 501(c)(4)s, beginning with contributions made in 2018. GE's political spending has declined in recent years, and in 2021 GE Company did not contribute any corporate funds to political campaigns, committees or candidates for public office. In this year's Sustainability Report, we are also providing a description of how GE's climate lobbying activities align with the goals of the Paris Agreement, see pages 98-103.

## Board focus on climate change

The energy transition and climate change have been significant areas of focus at the Board level. At its meetings throughout 2021, the Board regularly reviewed climate change-related risks and opportunities across GE's business. The Board is actively engaged with GE leadership on related topics such as the competitive landscape for our businesses amidst climate-related shifts in technology, product and service demand; analysis of potential pathways for decarbonization; customer, shareholder and other stakeholder expectations; the Company's decarbonization strategy; and reducing the environmental impact of GE's own operations and customers' use of our sold products. For example, the Board discussed and helped shape decisions such as setting a goal for GE to become carbon neutral by 2030 in our own operations, our ambition to be net zero in 2050 including emissions from sold products and the exit from the new-build coal business. This focus is also reflected in the Board's Governance Principles and committee charters, which the Board recently revised to more expressly highlight its role in the oversight of sustainability and climate change-related matters.

*Long Ridge Energy Terminal and GE commissioned and demonstrated the first advanced class hydrogen-burning power plant worldwide using GE's HA Gas Turbine.*



### BOARD OVERSIGHT: KEY AREAS RELATED TO SUSTAINABILITY

#### FULL BOARD

- Strategy for the energy transition and climate change, including climate-related risks and opportunities
- GE's ambition and goals related to greenhouse gas emission reductions
- Sustainability, including external reporting
- Health and safety of employees and communities, including COVID-19
- Enterprise risk management
- Developments in ESG reporting and analysis

#### AUDIT COMMITTEE

- Regulatory, compliance and litigation risks
- Financial reporting, systems and internal controls
- Cybersecurity
- Enterprise risk management framework
- In coordination with the Governance Committee, oversight of external reporting related to sustainability matters and data quality related to this reporting

#### GOVERNANCE & PUBLIC AFFAIRS COMMITTEE

- Priorities and external reporting related to sustainability matters
- Corporate governance
- Public policy and government relations activities, including political spending and lobbying activities
- Environmental, health and safety matters
- Human rights
- Support of full Board's oversight on climate change

#### MANAGEMENT DEVELOPMENT & COMPENSATION COMMITTEE

- Strategies and policies related to human capital management, including diversity, equity and inclusion; workplace environment and culture; talent recruitment and development; engagement and retention
- External reporting related to diversity and pay equity
- Executive compensation, including determination of metrics to include in long- and short-term incentive programs

For more information, see GE's 2022 Proxy Statement [here](#).

## HOW GE ENGAGES WITH ITS STAKEHOLDERS

### EMPLOYEES

- Regular Company- or business-wide emails and videos from senior leadership, including a monthly video blog InsideESG@GE for GE employees
- Leadership town halls, discussions and educational webinars, including opportunities for questions and answers
- Open reporting and ombuds system
- Engagement and culture survey
- Performance management system "People, Performance and Growth"

### CUSTOMERS

- Meetings with senior executives at the business and corporate level
- Engagement strategy driven by business leadership depending on industry

### SELECTED MEMBERSHIPS

- Participant in the UN Global Compact
- Founding member of the Global Business Initiative on Human Rights
- Member of the Institute for Human Rights and Business' initiative, Leadership Group for Responsible Recruitment
- Member of the Responsible Minerals Initiative (RMI)
- Board member, Center for Climate and Energy Solutions
- Member, World Business Council for Sustainable Development
- Member, The Global Fight

### INVESTORS

- Strong commitment to transparency—communicate strategic, operational and financial results and progress on priorities
- Quarterly earnings conference calls open to investors and available on our website
- Annual investor days
- Participation in sell-side conference presentations
- Annual meeting of shareholders
- Investor relations newsletters and website
- Regular meetings with large institutional investors and other shareholders, including governance engagement

### REGULATORS/GOVERNMENT AGENCIES

- Pursuit of "honest broker" relationships with government stakeholders to promote collaborative, win-win outcomes on sustainability and environmental issues
- Strong partnership on domestic and global stage in pursuit of climate change and sustainability goals and policies
- Commitment to regulatory compliance and strong performance
- Engagement to support decision makers in sustainability goals, including climate change and decarbonization
- For details on GE activities and partnerships in support of government goals and climate change policies, see pages [96-103]

### COMMUNITIES

- GE locations empowered to support charitable organizations based on the needs of the local community
- GE Volunteers, giving back to the communities where GE people live and work
- GE Foundation, committed to transforming our communities and shaping the diverse workforce of tomorrow by leveraging the power of GE
- Outreach and meaningful participation with local communities and stakeholders on decisions with broader impact

### SUPPLIERS

- Commitment to an ethical supply chain program and Supplier Integrity Guide for suppliers
- Communication and training to all suppliers on compliance and integrity expectations
- Onboarding engagement assessment and manufacturing site review
- For direct material suppliers in higher risk countries under the Supplier Responsibility Governance program, more extensive engagement at onboarding, including site audit and continued communication and assessment during their time as a GE supplier
- Access to GE's open reporting and ombuds system

# Integrated approach to strategy, risk and sustainability

## Our Company strategy focuses on what is needed to build a sustainable world that works.

Energy transition, precision health, future of flight—these are critical challenges facing our world, and GE has a meaningful role to play in providing global solutions for each. Over the last several years, as we considered opportunities and risks across our businesses and industries, we have sharpened and standardized our focus on the external dynamics—including markets, customers, competitors, and changes in the regulatory environment—that form the context of our strategic decisions. And in the spirit of Kaizen—continuous improvement—our standardized strategy and risk processes force us to regularly revisit our assumptions and processes so we can adapt as the external environment changes and learn from our mistakes. In a world where we will never have perfect information or complete control, our strengthened programs and processes are designed so that the Company makes decisions in a structured, objective manner, and with an appropriate view for the long term.



**CHRIS PEREIRA**

Chief Risk Officer and  
Vice President, Strategy, GE

Sustainability is integrated with strategy development and risk management across the Company. GE's sustainability lens is used to focus on operations and priorities within each business, and cross-functional committees and teams at the leadership level align strategic priorities and culture.

## GE's enterprise risk management framework

Our enterprise risk management framework informs the process for long-term strategy reviews that each business undertakes annually. Operationally, this framework also informs our delegations of authority and commercial underwriting, which take into account a range of risks such as strategic alignment, supply chain, inflation, cybersecurity, and country and counterparty risk. Our businesses all assess their top risks against a consistent framework each quarter. The process requires the business to:

- define and identify enterprise risks;
- prioritize the top risks and opportunities; and
- assess existing action plans to mitigate risk

The process also requires the business to identify owners at each stage of the process, instilling business ownership throughout the risk assessment process. At the Corporate level, the Corporate Risk Working Group—a small group of key functional leaders, as well as the Chief Risk Officer—meets quarterly to assess enterprise-wide risks as well. The Audit Committee oversees GE's enterprise risk management framework and receives a quarterly enterprise risk report from the Chief Risk Officer. GE business leaders also periodically review their risk management programs and top risks with the Audit Committee, and it is the business CEOs—rather than a compliance or legal professional—who lead discussions with the Audit Committee to provide strong business accountability for risk management. In addition, each business CEO meets regularly with the Board to review their strategies and operations. Our Governance Principles and committee charters define the risk areas for which each committee has ongoing oversight responsibility, while the Board, as a whole, focuses on the most significant risks facing the Company.

We periodically review a range of actual and projected metrics in assessing these types of risks and opportunities, including new unit equipment sales, power generation by asset type, levelized cost of energy, levelized cost of storage, fuel prices (including natural gas and hydrogen), pricing for mandatory and voluntary carbon offsets or credits, and internal and external modeling. Our consideration of top climate-related risks and opportunities also feeds into our annual long-term strategy review process, during which our businesses evaluate a handful of key questions related to their long-term strategies.

In our strategy development, we seek to build on GE's strengths in both innovating technologies and solutions to continue driving the global energy transition and creating resilience in our businesses' strategies to adapt to potential transition risks from the range of potential pathways for decarbonization and other factors that could significantly affect GE's approach in the decades ahead.

We seek to continuously improve our processes to identify, assess and respond to these types of climate-related opportunities and risks, as this remains central to the strategy for our businesses.

## ENTERPRISE RISK MANAGEMENT FRAMEWORK



# Operationalizing and improving GE's sustainability efforts through the Sustainability Council

In 2021, GE made a further organizational commitment to elevate its broader sustainability strategy with the appointment of GE's first Chief Sustainability Officer (CSO). This position coordinates efforts by our business leaders, engineers and strategic thinkers to ensure we improve our impacts to our communities, people and planet in measurable and meaningful ways. The CSO also supports efforts for GE's technology and innovation to address the pressing global challenges addressed in this report.

In 2021, GE's Chief Sustainability Officer convened a business-wide Sustainability Council staffed by each GE business and corporate function. The Sustainability Council meets weekly and focuses internally and externally on three overarching goals:

- ensuring progress toward delivering on GE's sustainability commitments;
- improving and installing operational programs to address gaps in GE's sustainability programs; and
- building strong and independent ESG programs and operations for each business prior to their separation from GE so that sustainability is core to the new businesses on day one

The Sustainability Council partners with a diverse range of external stakeholders to deliver on our commitments, improve our programs and prepare for the separation. These efforts and progress are reflected in this report.

Core to the Sustainability Council's work was engaging in an ESG issues assessment with our internal and external stakeholders for GE Company and each business, described below. This provides an overarching blueprint on how our priorities align with our stakeholders.

Regarding delivering on our commitments, each business provided a quarterly update on progress toward greenhouse gas Scope 1 and 2 reduction goals (pages 92-95) and ongoing progress on innovating the technology toward Scope 3 goals (pages 33-35 and 50-53). In terms of gaps, we assessed that we could do a stronger job communicating our programs that drive product safety and quality (pages 66-69), as well as strengthen sustainability considerations in the stewardship of product design (pages 104-106). We will continue to improve operations and programs in these areas as described below to position the businesses for leadership on these topics at core on day one of their independent operations.

Beyond the Sustainability Council, sustainability at GE is the ultimate team effort, with GE's employees united in realizing the success of our mission. The CSO helps GE accelerate outcomes by promoting closer collaboration between GE's leaders and governments, policy makers, NGOs, our investors, communities and peers. The CSO also coordinates efforts to operationalize GE's sustainability efforts by approaching sustainability with the same high expectations of rigor and accountability that we use to run our businesses, using lean principles and, as described in more detail in this report, continuously improving toward our goals.

## ESG ISSUES ASSESSMENTS FOR GE AND EACH BUSINESS

Core to the efforts to ensure GE succeeds in its sustainability programs consistent with stakeholder expectations, in 2021 GE engaged in a broad internal and external stakeholder assessment for GE Company and the Aviation, Healthcare, Power and Renewable Energy businesses. The results of these assessments are helping to guide ESG and sustainability priorities and strategies with the benefit of input from our employees, customers, investors, NGOs and other stakeholders. We share the process and output below.

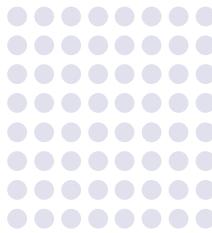
### ESG ISSUES ASSESSMENT OVERVIEW

GE conducted an assessment to develop a list of priority topics deemed relevant for sustainability strategy for each business unit, followed by interviews with internal and external stakeholders to validate and prioritize topics. Based on the insights gained, an ESG issues matrix was developed and the final list of high priority topics was reviewed against GE's latest reporting to identify potential gaps and provide recommendations for future reporting.

1

#### DEVELOP INITIAL LIST OF KEY TOPICS

- Consolidate topics, external reporting frameworks, ESG rating agencies and peers

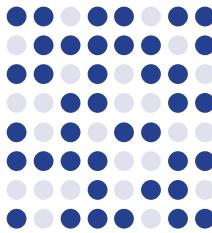


Input: Initial perspective on potential priority topics for GE's industry

2

#### STAKEHOLDER VALIDATION

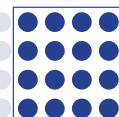
- Conduct interviews with internal and external stakeholders to identify the most impactful topics to GE's business units



3

#### PROVIDE RECOMMENDATIONS

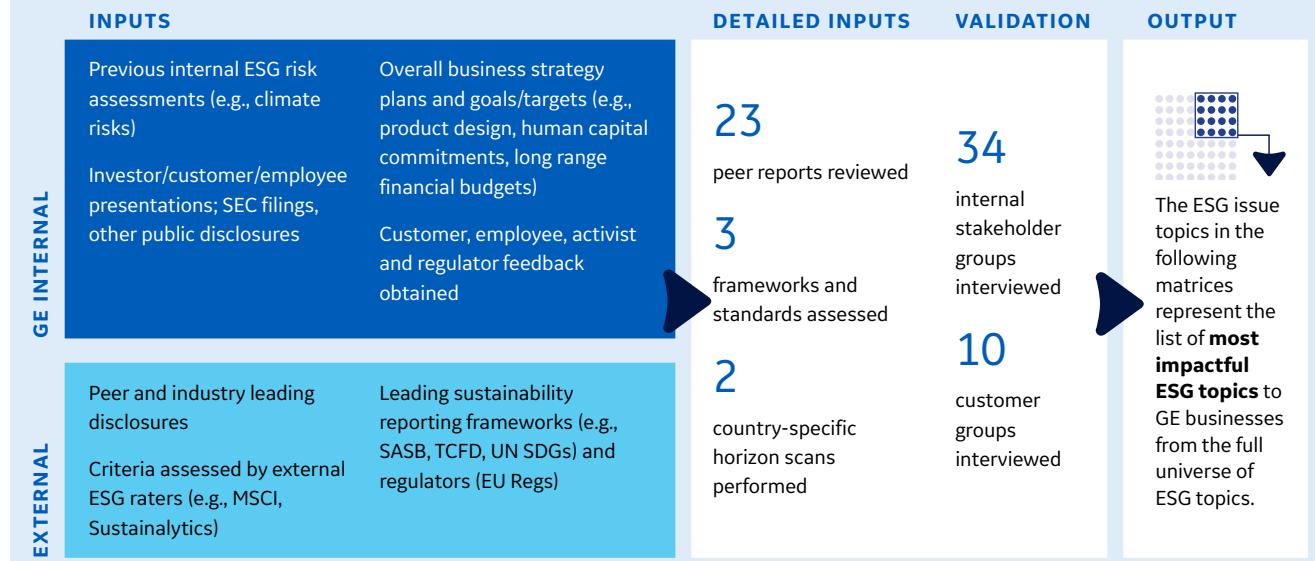
- Develop an ESG issues matrix and assess GE's existing reporting against the validated priority issues



Output: Summary report synthesizing the priority topics, feedback and insights from the activities above

## APPROACH TO IDENTIFYING AND VALIDATING TOPICS

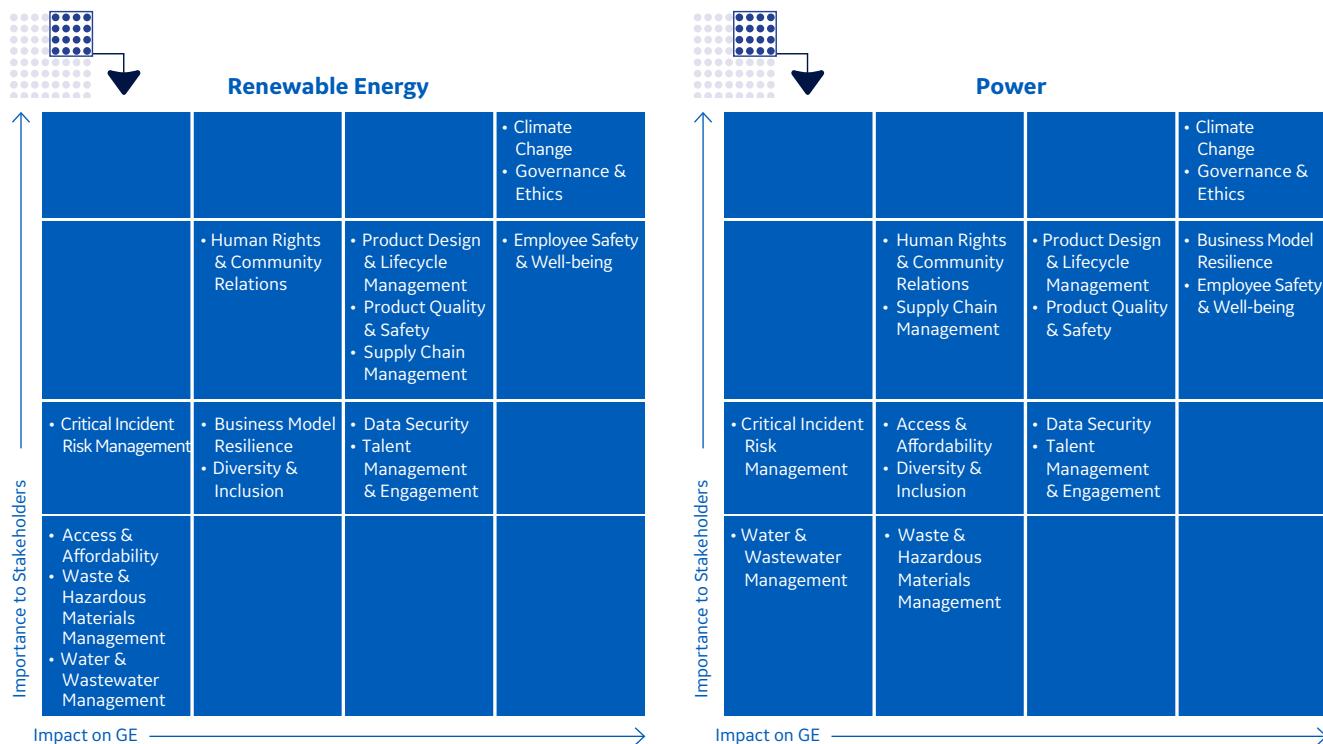
Across **four business units**, GE used a combination of internal and external research to develop a list of **initial** topics deemed most impactful on its ESG strategy. This included, but was not limited to, the assessment of **over 20 peer reports** and analysis of key topics from frameworks and standards for **eight different industries**. Interviews with **nearly 80** relevant internal and external stakeholders were used to **refine** and **validate** the initial topics.



## RENEWABLE ENERGY & POWER

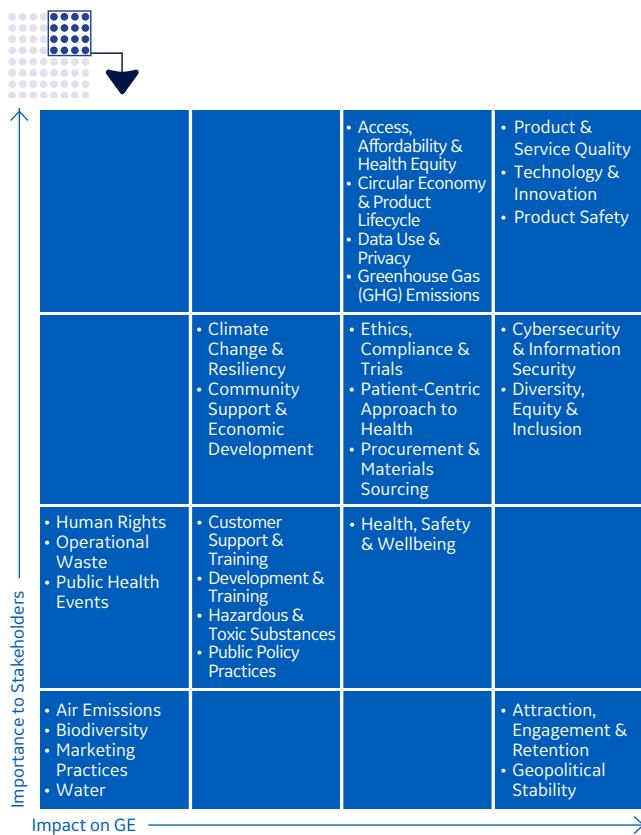
Operating in the same market and ecosystem, there is an unsurprising overlap between the most impactful ESG issues identified by the stakeholders of GE's Power and Renewable Energy businesses. Climate change remains a core issue to address across the Energy portfolio, and the businesses have a strong position to build from, both operationally and through products and strategy as they join forces as part of one leading energy Company to tackle the world's biggest challenge. The ESG Issues Assessment also confirmed that the existing strong emphasis on governance and ethics, and protecting and supporting employees' safety and well-being, are fundamental for the path forward. Those

strong cultural pillars will be even more important as we continue to bring leading energy transition technology forward. Our stakeholders care deeply about how we do that and highlight in their feedback that our emphasis on product design and lifecycle management as well as product quality and safety, are critical to prioritize across the Renewable Energy and Power businesses. With the evolution of a combined energy business portfolio, we look forward to the opportunity to take a more holistic approach to further strengthen programs in those areas, completely aligning with our ambition to advance our leading role in the energy transition.



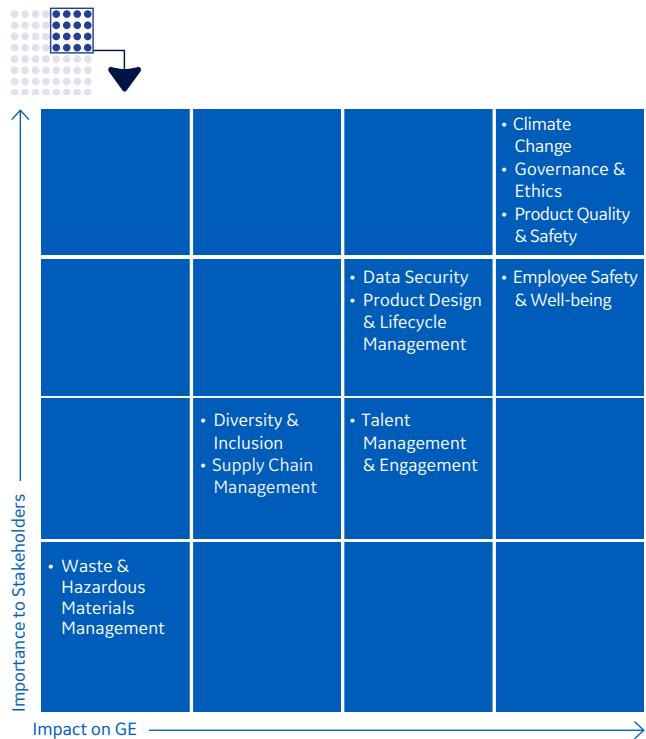
## HEALTHCARE

In 2021, GE Healthcare conducted an assessment to identify the top impacts, risks and opportunities for our business across a wide landscape of ESG topic areas. The output of this assessment was leveraged to identify five focus areas: working to expand access to healthcare; mitigating our climate impact and improving resiliency; advancing the circular economy and environmental design; promoting diversity, equity and inclusion; and protecting patient data and cybersecurity. As preparations continue to become a public company, ESG is being integrated more deeply into the core of the culture and business by building upon these five focus areas, as well as the longstanding commitments to innovation, product quality and integrity.



## AVIATION

Climate change, governance and ethics, and product quality and safety were the top issues identified by both internal and external stakeholders. This strong alignment is not a surprise given the nature of our business and the critical contribution of each element to safe and more sustainable flight. Our commitment to each of these areas can be seen through our current activities. As an example, our commitment to climate change is clearly demonstrated in our commercial portfolio renewal (see page 43), efforts supporting sustainable aviation fuel (see page 44) and our focus on innovative breakthrough technologies (see page 46). This assessment also confirmed that our efforts focused on employee safety and well-being, data security, product design and lifecycle management (see page 104), talent management and engagement, and inclusion and diversity (see page 80) are indeed core to our continued success. We have made much progress in each of these areas, and remain committed to continuing to strengthen and expand our efforts to accelerate the pace of change in our business.



## CORPORATE

The GE Corporate assessment reinforces that GE's success on its climate change goals—instilling a culture of ethics and compliance, and its safety focus—are top priorities internally and externally where we must lead for success. As described above, we are taking stronger steps to communicate our commitment to product safety and quality, and to advance our programs on product stewardship. We share our stakeholders' interests in securing the highest standards on human rights, and a strong priority of diversity and inclusion, our separate reports detail our efforts and initiatives.

## LEAN PRINCIPLES APPLIED TO SUSTAINABILITY

Our strategy for continuous improvement and eliminating waste



A GE Gas Power plant in Schenectady, NY, has become a striking example of the power of lean management, a set of tools at the heart of GE's transformation.

Lean is the way we run our businesses. It helps drive better execution and cultural change, all while enabling sustainable, long-term profitable growth. It is known as a set of principles that emphasizes customer focus, elimination of waste, high-quality growth, continuous improvement and ruthless prioritization of work. Lean is enabling our businesses to play more offense, deliver for our customers and lead in three key areas—the energy transition, precision health and future of flight.

Lean principles also drive the execution of our sustainability strategy and help us address problems, examine processes, implement standard work and continuously improve the way we work.

The best way to see the power of lean in action is to go to the genba or “where the work is done.” This allows one to experience firsthand the process and to identify problems, then work to address those issues.

This is what the GE senior leadership team did in October 2021. The Company held a five-day immersive GE Kaizen Week at several GE locations around the globe with more than 1,600 employees going to genba and problem solving to improve on SQDC. During the week, several of the teams addressed chemical hazard, minimized suspended load hazards, working at heights hazards, organized workstations and improved ergonomics. True to the philosophy of continuous improvements, Kaizen events did not stop once the week ended. In fact, they are happening regularly across GE sites around the world.

For example, every time the team at GE Aviation's On Wing Support facility, near the city of Gimpo, South Korea, needs to hoist a LEAP engine into place for maintenance, they are required to attach a 187-pound, U-shaped hook to the engine. The team held a kaizen that resulted in a solution; while not high-tech, a wooden box serves as a base to keep the hooks in place and eliminates the need to move the almost 200-pound hook. This design delivers an annual savings in excess of \$20,000 while also improving the overall safety of the process for GE workers.

This is just one example of how our teams are leveraging lean. They reflect how we're running GE better and how we're driving operational progress and lasting cultural change. There is more work to be done and lean is helping us get there.



Dan Loughlin,  
the Team 6  
Leader and  
CRW Operations  
Leader, giving  
Larry Culp an  
overview of the  
team's scope,  
progress to date  
and work ahead.

Our Environment, Health and Safety teams work in close partnership with GE's lean leaders to improve safety, quality, delivery and cost (SQDC), in that order. This includes using lean to improve worker safety, eliminate hazardous waste, implement leader standard work, limit emissions, reduce our carbon footprint and deliver essential, life-enhancing products quickly and efficiently.

*“Lean is not about manufacturing. It’s about everything we do at GE and using the tools in a way that gives us the opportunity to drive real change and real improvement that serves everybody.”*

- LARRY CULP

Chairman and CEO, GE  
CEO, GE Aviation

### How lean helps GE field crews fix power plant

GE field crews completed more than 600 major outage jobs in more than 60 countries in 2021, each one lasting roughly two to six weeks. This is no easy task, given the size, weight and complexity of our gas turbines. When a power plant is scheduled to go offline, service crews at GE's FieldCore division typically gather, print and organize into binders thousands of pages specific to the technology they were summoned to service. Those documents then go to dozens of mechanics, millwrights and field engineers who fan out across the power plant. One copy typically sits in the job trailer, a temporary office that could be parked a quarter mile from the turbine deck where the work was taking place.

The process is vintage, cumbersome and inefficient, and FieldCore workers knew there had to be a better way. They used lean management to find it. The GE unit brought together cross-functional teams that included mechanics and engineers from around the world. They worked together in dozens of kaizen sessions to design a digital solution that would standardize procedures and make best practices scalable and reproducible at any site anywhere in the world, from Connecticut and China to Alberta and Saudi Arabia.

*Jeremiah Smedra, an operations director at FieldCore, GE's field services Company, using the Live Outage software, which replaced a time-consuming system that organized information in large binders.*



The result is Live Outage, a digital software system that makes everything field crews need accessible from portable devices in their hands, replacing the old-school binders and eliminating wasted time.

The system tracks project progress in real time with status bars for each of the hundreds of tasks that needs to be completed and automatically generates a daily project report. Live Outage also includes instruction checklists for each job type, as well as more than 3,000 photos and videos showing what parts look like and how to perform specific tasks.

This system has already been used at approximately 15 power plants around the U.S.

He's also quick to stress that the team isn't finished with lean. FieldCore continues to collect user feedback so they keep improving Live Outage and further reduce waste and improve performance.

## GE's wind turbine plant in Florida is using continuous improvement to serve customers better

Workers at GE Renewable Energy's plant in Pensacola, Florida, make some of the most popular onshore wind turbines on the planet, GE's 2 MW onshore wind turbines. They are also among the first at GE to embrace lean using it to strengthen safety at the site, eliminate defects and improve on-time delivery. It has also become an integral part of their work. In 2021 alone, workers at the plant held more than a dozen kaizen exercises where they were seeking to find ways to make production more flexible and resilient. For example, during one of the kaizens, the team focused on improving "takt time"—the amount of time workers need to complete a task at an assembly station. Understanding the takt time, and pairing that with standard work, has provided the team with an understanding of the necessary steps, the number of workers and the number of parts needed to complete an assembly operation within a given period. This work helped the plant reduce the number of build-hours it takes to produce a turbine by 340 minutes and also shortened the time a turbine spends on the production line by 100 minutes, a 6% and 12% improvement, respectively. This improvement is helping the Renewable Energy team move the product along so it can be delivered to our customers to use to power homes around the world.

*"Every improvement leads to another. That's the lean way."*

**EDUARDO OLIVIER**

Senior Process Improvement Manager, GE Renewable Energy

### LEAN IS DRIVING IMPROVED TURNAROUND TIMES – SUPPORTING OUR CUSTOMERS

Employees at GE Healthcare's Pharmaceutical Diagnostics unit in Cork, Ireland, are using Lean to expand manufacturing capacity by reducing turnarounds. During the GE Kaizen Week, October 2021, one of the teams focused on a filling line which places the product — contrast media solution that help doctors better image patients — into individual vials. Kaizen sessions discovered that the line was seeing around 45 hours of lost production time every week. They found the waste was a direct result of not having standard work, which was slowing down turnaround times. Together they created, tested, and implemented new standard work, including workflow and prep sequences. These new processes and standards have allowed them to control and plan turnarounds better and help save 15 hours per week. This expands production capacity by more than 2 million additional bottles of contrast media per year, supporting growing demand and enabling GE Healthcare to reach more patients.

## Product safety and quality

Lean is foundational to how we work at GE. Safety, Quality, Delivery, Cost (SQDC)—in that order—help us deliver for our customers and build a world that works. These are not simply four metrics that we are regularly reporting on, but instead are our desired set of shared instincts. At no point will an improvement in quality, delivery or cost be done at the expense of safety. All of the GE businesses are committed to creating safe and effective products that meet the needs of our customers and are doing this through continuously working to improve product quality.

During GE's 2022 Investor Day earlier this year, we shared how lean is helping to transform the Company. One of the factory tours was at GE Aviation in Greenville, South Carolina, a site that began its lean journey in 2019, where the team performs complex machining operations and detailed inspections on high pressure turbine blades. Focusing on reducing the site's blade delivery lead time, the team used 3P (Production Preparation Process) to improve the plant layout and create standard lines, which has improved part flow.

By optimizing the layout of the plant, the team was able to reduce lead time by 13 days and is working to continue to improve and reduce by an additional 12 days. Through their work, overall inventory has also been reduced. Lean is making an impact and is changing the way we work for the better.

Across all GE businesses, we are integrating SQDC in the design, manufacturing, testing, servicing and monitoring of all our products around the world. As we look ahead to forming three independent industry leaders with sustainability at their core, read how lean is making an impact and is changing the way each of our businesses work for the better.

*Maryam Alturabi, a FieldCore outage manager during 9FA AGP upgrade, performing inspections at GESAT site, Saudi Arabia.*



# Aviation: Product safety & quality

## COMMITMENT TO SAFETY

GE Aviation has a strong product safety focus, including a voluntary Safety Management System (SMS) aligned with the UN's International Civil Aviation Organization (ICAO) SMS framework. GE's SMS was assessed and accepted by the United States Federal Aviation Administration (FAA) in December 2017 – the first such acceptance granted by the FAA for a Design & Manufacturing Company. Our SMS is founded on four key tenets:

- **Policy** – embedding top down commitment to safety in policies and review rhythms
- **Promotion** – creating a positive safety culture in the workforce through training, education, and awareness
- **Risk management** – executing independent risk assessments per approved FAA process
- **Assurance** – validating effectiveness of risk-control strategies in design, manufacturing, quality, and product performance

Internally, we have an open reporting system that provides multiple paths to raise safety concerns backed by a Safety Program Management Team (SPMT) structure that ensures each and every potential safety concern is fully reviewed. Every product has a dedicated SPMT tasked with adjudicating potential safety concerns spanning all aspects of our products, including manufacturing, field performance, and maintenance and repair.

Our safety commitment is further strengthened through our organizational structure that ensures the independence of the engineering organization. Product oriented engineering teams are separated from the engine product teams. Additionally, the Chief Engineer's Office serves as both a technical resource and an independent technical audit function.

Externally, GE Aviation is recognized as a safety thought leader through partnering with regulators, other manufacturers, and key industry associations to develop strategies for enhancing overall propulsion safety and risk management approaches.



## DESIGNING FOR PRODUCT SAFETY

Each new engine type developed by GE is subjected to rigorous testing throughout the development and certification process. Aviation has developed unique testing capability at the part, module, and product level to ensure that new technology we bring to the market meets and exceeds all safety requirements. Our engine testing facilities have the capability to perform rain and hail storm, engine icing, and other extreme tests. Our 747 flying test bed aircraft provides the unique opportunity to flight test engines under a wide range of conditions combined with the ability to gather real time data via specialized instrumentation.

## PRODUCT QUALITY

GE Aviation operates based on the guiding principle of Safety First / Quality Always. This principle is embedded in all of our operational rhythms and manufacturing systems. All new aircraft engine component parts are manufactured under a quality system approved by the FAA and certified to meet the most current aviation industry standards in AS9100D.

Underlying both the civil aviation regulatory approval and industry accreditation is the proactive Quality Framework, a unique strategic approach to driving a quality culture at GE Aviation designed to:

- Create a zero-defect culture by setting processes right on Day 1 and managing change using an Advanced Product Quality Planning (APQP) toolkit.
- Measure and mitigate risk using Predictive Quality Analytics (PQA) by focusing on leading indicators to impact Voice of the Customer.
- Grow our people through a Quality Excellence Program (QEP) by a relentless focus on continuing education.

## AVIATION'S QUALITY EXCELLENCE PROGRAM

As part of our quality focus, Aviation launched a Quality Excellence Program (QEP) to build domain expertise that is unique to the aviation industry through a combination of training, application and certification, and Controlled Title Holder (CTH) experts.

- **LEVEL I – TRAINING** - Customized training including Root Cause & Corrective Actions (RCCA), Process Failure Modes and Effects Analysis (PFMEA), Advanced Product Quality Planning (AQPQ), and Six Sigma.
- **LEVEL II – APPLICATION & CERTIFICATION** - Participants move from learners to leaders as they assume leadership roles in projects building on their training and perform product audits. Following completion of Level I training and a portfolio of Level II projects, candidates are eligible for QEP certification after a rigorous review process.
- **CONTROLLED TITLE HOLDER (CTH) EXPERTS** - Subject matter expert candidates are nominated through our Technical Talent Review process for specific quality domain expertise areas such as manufacturing, regulatory compliance and quality systems. These individuals, following specialized mentoring and demonstrated broad project leadership, comprise our Quality CTH network and lead training, coaching, and consulting across the organization.

## Healthcare: Patient safety and customer satisfaction

Above all else, GE Healthcare is committed to creating safe and effective products that meet the needs of our customers and their patients and help health care providers solve the clinical, operational and economic challenges they face every day while improving patient outcomes.

Our products and services are developed using a world-class quality system that addresses the rigorous requirements of over 175 countries and is led by a team of experienced quality and regulatory professionals located in all major markets. Who we are and what we do are driven by an unyielding commitment to safety, integrity, compliance and quality.

We also maintain a Global Quality Policy applicable to every employee, establish and ensure management responsibility for operationally measuring ourselves against this policy, and have an appropriate organizational structure that ensures we have inputs, checks and balances for key decision making.

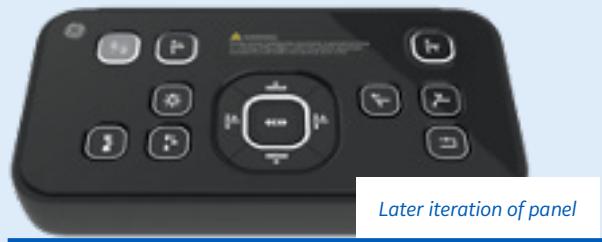
Moreover, our quality system incorporates all applicable international quality and regulatory standards and requirements, including ISO 13485, US FDA 21 CFR parts 820 and 211, NMPA Decree 739, EU Medical Device Regulation, Eudralex Volume 4 GMP and all appropriate individual market regulatory requirements applicable to our products in the markets where we do business. We also participate in national and international trade associations and drive adoption of industry best practices within our organization.

### HEALTHCARE COMMITMENT TO QUALITY



#### PROACTIVE IDENTIFICATION AND QUALITY SOLUTIONS TO CUSTOMER PROBLEMS

As the COVID-19 pandemic progressed, GE Healthcare observed customers implementing their own remote control solutions that enabled operation of certain imaging system functions without direct patient contact. These custom solutions presented multiple questions regarding the appropriateness of quality control and performance. In rapid succession, GE Healthcare was able to coordinate with its customers to identify the key functionality needed and subsequently prototype, develop, produce and distribute a solution to our broad customer base that not only met the current needs but exceeded the quality and performance specifications that were possible with any of the custom solutions observed. Our quality system and commitment to quality enabled GE Healthcare to release an initial remote control within eight weeks of identifying the need and a more refined iteration available within the year, all while meeting the quality and regulatory requirements for our global customer base.



## Renewable Energy & Power: Product safety & quality

Safety and quality are paramount in the design, manufacturing, testing, servicing, and monitoring of our energy products around the world.

### RENEWABLE ENERGY SAFETY CULTURE

Our Product Safety Quality Management System Procedure explains the process for internally reporting, resolving, closing and documenting product safety concerns and product safety issues. It provides the overall product safety framework for GE's energy portfolio and aims to eliminate unreasonable safety risks. The procedure aligns to GE's Corporate Environment, Health and Safety policy and is underpinned by internal standards and industry frameworks such as ISO, ANSI, IEC, IEEE and in some cases, U.S. Military standards. In addition, we follow internationally accepted principles of hazard assessment principles and tools, risk assessment and risk mitigation techniques. An example of how the quality management and safety policies work in practice is the requirement for reviewing Human Factors and EHS for all new designs of products and services. Engineers partner with their counterparts in EHS, field services, and manufacturing to consider the EHS impacts as well as aspects of serviceability and maintainability of the equipment throughout the product lifecycle. These additional considerations include factors that could potentially influence human performance in the field and impact for instance the design of equipment with regard to ergonomics and work station layout, work procedures, training, and communication or coordination of work activities.

The safety of our products, and the people who install and maintain them, is a top priority at GE Renewable Energy. All our employees and contractors are empowered to stop work when something appears to be unsafe. The businesses are on a journey to build a world class safety culture and work in different ways at all levels to ensure employees have the ability and skills to proactively identify future safety risks and develop plans to continue to better integrate safety into our daily work.

GE's Onshore Wind business launched two programs geared toward collaborative and practical safe product design, "Touch the Turbine" and "Safety by Design." Touch the Turbine program aims at enhancing turbine field knowledge and awareness for Design Engineers. By giving more field experiences to engineers we expect to increase their awareness about the risks that design features and rules can potentially present for the field teams, and in the long term, reduce the injury and illness rate. We are connecting the dots between field teams and Engineering with the intent to put human factors back into our design processes, which is key to ensuring the quality of our products and the safety of all team members working in the field. Safety by Design purpose is to reduce Injury and Illness rates attributable to product design by proposing continuous improvement of turbine design in addition to the engineering safety proactive and reactive processes. The project is proposing design changes based on ergonomics, safety and human factors recommendations, as well as the improvement of internal design guidelines. Additionally, GE is represented as chair of the Global Wind Organization (GWO). GWO is a non-profit body founded by globally leading wind turbine manufacturers and owners. Members strive for an injury free work environment in the wind turbine industry, setting common international standards for safety training and emergency procedures.

### RENEWABLE ENERGY COMMITMENT TO QUALITY

GE Renewable Energy is also committed to delivering quality products on time with zero defects. In 2021, GE's Onshore and Offshore Wind businesses launched their Root Cause Analysis Quality Suite, a simplified, standardized and digital approach towards Root Cause Analysis allowing us to record and manage the process to correct, identify and remove recurring issues. Another area of focus was Supplier Quality. Our goal is to reduce GE and supplier defects by 60% across the next three years. We are launching a new Supplier Quality Management Board and a training webinar to improve quality across Renewable Energy.



#### EXTREME LOAD BLADE TESTING

Our wind turbine blades are advanced creations that capture the wind and enable the generation of cleaner, safer and more affordable electricity. Every fifth wind turbine around the world is equipped with LM Wind Power blades, and each new blade type is validated with cutting-edge tools to help ensure they can endure the forces of nature for over 25 years. LM Wind Power's in-house

testing capabilities include a wind tunnel equipped with advanced sensors measuring the aerodynamic properties on blade sections used to optimize the performance of the blade. Every new blade type is put through rigorous static and dynamic tests. In static test, the blade is subjected to extreme loads to validate their ability to withstand these loads. In dynamic test, the blade is put through an accelerated lifetime test, where the blade is exposed to changing loads for an average of 5 million oscillations to simulate the life span of the blade.

#### CLINTON TEST FACILITY

The Clinton Test Facility in South Carolina is dedicated to mechanical testing of turbine rotor and hub system and subsystem components. This facility is unique as it has the capability to test the increasingly large wind components at full scale, accommodating very high loads. The main product of the testing facility is data for our customers to ensure design validation and product certification, both of which highlight product safety.

## POWER PRODUCT SAFETY

Gas Power has established Product Safety procedures that apply to all GE Gas Power business entities, products, and services to eliminate unreasonable safety risks. General requirements include assuring prompt actions addressing product safety issues, a Product Safety Review Board (PSRB) to oversee the effectiveness of the Product Safety process, organizations responsible for product design/engineering and plate engineering establish a Product Safety Program Team (SPMT). Organizations complete a product safety review for Gas Power designed products to identify inherent hazards of the system, hazard control measures, and risk for harm to occur. These reviews are documented in the SAFER database, facilitated by a Product Safety Engineer, and reviewed by a Chief Consulting Engineer or designated controlled title holder. To detect product safety concerns for post shipment and installed base equipment, organizations with product service responsibilities establish a process for communicating with Product Safety Engineering any product safety concerns related to Gas Power products and services. The SPMT determines if the concern is a valid Product Safety Issue. For any safety event the issue is recorded in the SAFER database, actions necessary to resolve the issue are determined, and the issue is tracked to resolution.

### SAFETY RESPONSE: AFT DIFFUSER SHIPPED WITHOUT LIFTING LUGS

An Aft Diffuser was delivered to a Gas Power site, and upon opening the shipping crate, the employees discovered the lifting lugs were missing. A Root Cause investigation found the drawing and BOM were appropriately marked, but the drawing notes were left off of the qualification documents. Site employees followed the established Product Safety procedures and were able to take both immediate and long term actions to safely address the situation. To correct the immediate concern, the Diffuser without lugs was lifted with lifting straps. To correct the long term concern, an update was made to the qualification drawing, the CAV definition was updated to indicate "A CAV form is a record of actual product characteristic values verified against applicable drawing, drawing notes and specification requirements. The characteristic features may be in the form of dimensions, form, function, note compliance, NDE result."

## POWER QUALITY MANAGEMENT SYSTEM

GE Gas Power Quality Management System (QMS) meets all ISO 9001 Standard requirements and is designed to deliver products and services that meet our customers' expectations. The following four pillars form the basis of our Quality Policy as described below:

- **Zero Defect Culture:** We protect our customers through a culture that accepts no defects, creates no defects, passes no defects.
- **Management of Change:** We deliver with focus, using standard work and lean for quality. We comply with all applicable requirements and regulations.
- **Supply Base Quality:** We partner with our suppliers and empower our employees to innovate, solve problems rapidly with rigor, and perform quality stop work when needed to protect our customers.
- **New Product Introduction:** We deliver products and services right the first time, every time. We continuously improve our processes and systems leveraging past lessons and implementing sustainably.

By keeping laser focus on the customer, meeting our QMS requirements, and the four pillars as our True North, while leveraging our lean approach to driving transformational improvements, we will significantly decrease our quality escapes, defects, and customer events, not only improving customer experience but also reducing CoPQ (scrap, rework, warranty costs) enabling quality as a competitive advantage driving profitable growth.

One of the four pillars of our Gas Power Quality Policy is focused on improving Supply Base Quality, which in turn will improve our overall quality performance and, ultimately, customer experience.

Our goal is to reduce supplier escapes (nonconforming parts) to GE by more than 25% in 2022, and we are working with our suppliers to drive step function improvements across their operations.

A recent success story is a partnership with a critical U.S.-based supplier of highly technical processes. By embracing continuous improvement and adapting their processes to deliver better quality for GE, they improved their internal yield and lowered their escapes to GE by 95%. One specific example of improvement is the remediation of Aft Tip Cooling Hole Back Wall Strikes (BWS) on Stage 1 Blades. A BWS can create thin walls and concentrated stress that can lead to cracking. This supplier worked closely with GE's engineering and quality teams to identify root causes of defects leading to improved design and manufacturing processes. This helped minimize customer escapes and scrap despite casting variations.

## CULTURE

# Leading with integrity and *The Spirit & The Letter*



Integrity is critical in everything we do. This is reflected in our three Leadership Behaviors—act with humility, lead with transparency and deliver with focus—**always with unyielding integrity**. These behaviors, along with our employee code of conduct, *The Spirit & The Letter*, set the foundation for our compliance program, where we expect our leaders and all our employees to personally drive a culture of integrity everywhere we do business.

## Leadership behaviors

GE's Leadership Behaviors form the foundation of our culture. For us at GE, these are more than just words; they are changing the way we work and signify a meaningful shift in our culture. These Leadership Behaviors are instrumental in driving engagement throughout our businesses, particularly related to lean.

ACT WITH HUMILITY	LEAD WITH TRANSPARENCY	DELIVER WITH FOCUS
<p>Humility helps us recognize what we do not know. Ask questions, then listen carefully.</p> <ul style="list-style-type: none"><li>• We embrace a culture of respect which values inclusive teams and diverse perspectives.</li><li>• We actively listen to internal and external sources.</li><li>• We learn from our shortcomings as much as we celebrate our wins.</li></ul> <p>“Respect isn’t about titles; it is about treating everyone well and working together as a team. When we listen to each other, we can learn from each other’s experiences and expertise. Humility is about acknowledging lessons learned; it isn’t a sign of weakness. We are all human.”</p> <p><b>TRENTON SCHOONOVER</b> Clinical Multimedia Content Specialist, Virtual Clinical Applications Team GE Healthcare</p>	<p>Transparency makes us call it like we see it, highlighting the good and the bad in equal measure.</p> <ul style="list-style-type: none"><li>• We embrace candor, saying what we think, not what people want to hear.</li><li>• We share information so we can solve problems.</li><li>• We contribute to each other’s development in a constructive way.</li></ul> <p>“Transparency and integrity go hand-in-hand, mutually supportive in creating a shared space of doing the right thing, all the time, whether actively seen or acknowledged, without fear or favor.”</p> <p><b>BRIAN SELBY</b> Asia General Manager GE Hydro Solutions</p>	<p>Focus helps us prioritize what we will and will not do.</p> <ul style="list-style-type: none"><li>• We put safety first.</li><li>• We prioritize our work, maximizing our impact.</li><li>• We measure performance through the lens of our customers.</li><li>• We are committed to continuous improvement always in search of a better way.</li></ul> <p>“Within our complex, multi-channel go-to-market business, 100% compliant commercial transactions are simply part of the customer-centered equation and a fundamental enabler to executing on opportunities of all size and shape.”</p> <p><b>TOM HOFERER</b> General Manager-Unison Industries GE Aviation</p>

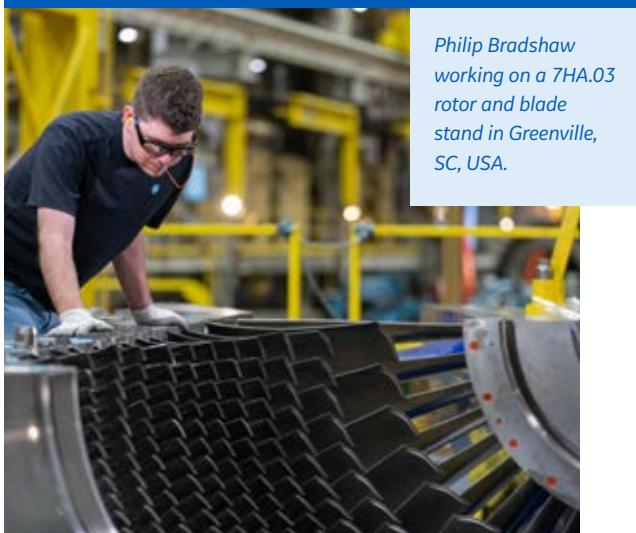
## Culture survey

In the first quarter of 2022, we conducted our second annual enterprise-wide culture survey to gauge our progress on our Leadership Behaviors, as well as areas such as integrity, safety and lean. While there was expected variability in the results among our businesses related to certain topics, a Company-wide view of trends confirmed GE's strong foundation in compliance efforts. The survey also reflected that we still have work to do on diversity and inclusion, though our leadership commitment to both is evident and has contributed to an improvement in these results compared to last year. This year again, safety questions scored high, yet we are focused on driving further action so that our front-line feels as strongly about our safety efforts as the overall Company, including management (see pages 86-89). Employees identified progress on personal and career growth, while candor and transparency remain as areas of opportunity. We believe listening and gaining these insights drive improvement, in both our business and our culture.

## The Spirit & The Letter

Our integrity anchor is our robust employee code of conduct, *The Spirit & The Letter* (S&L). As the name suggests, this code of conduct is intended to hold our employees to a higher standard above and beyond simply following the letter of the law. We expect our employees and our Board of Directors to comply with the spirit of these policies and our Company values. Available for download in 21 languages, the S&L sets forth core employee and manager integrity expectations and summarizes our key Company-wide compliance policies. At GE, salaried employees are expected to affirm their commitment to abide by the S&L by completing the Spirit & Letter Acknowledgement at the time of hiring and then again every year subject to local labor law restrictions. In 2021, 98% of eligible employees completed the Spirit & Letter Acknowledgement. GE also requires its third parties (including distributors, suppliers, agents and partners) to comply with relevant aspects of the S&L and, as necessary, will educate those third parties about applicable policy requirements.

The S&L and its accompanying policies address the full spectrum of integrity and compliance issues across GE's global value chain. In 2021, GE published its latest version of the S&L. In response to an evolving workforce, we designed the latest S&L to be easy for different learners and workers to digest on any device. Accordingly, we made the S&L available both for downloading as well as for interactive, mobile-friendly browsing. The interactive version is directly accessible to employees through our GE Integrity Mobile App and includes embedded links to key policies, resources and videos for compliance help on-the-go.



*Philip Bradshaw  
working on a 7HA.03  
rotor and blade  
stand in Greenville,  
SC, USA.*

Key terms in the policies are captured in a dedicated definitions section, and all policies contain information on where to go for additional assistance.

These policies are augmented by 22 Enterprise Standards, which set forth the core programmatic expectations for the businesses in all of our significant compliance risk areas. Each Enterprise Standard defines the specific risks that businesses must document and address, outlines auditable controls, and requires, among other things, that the businesses have appropriate mechanisms in place to monitor those controls. These Enterprise Standards were developed and launched in 2020 and, together with our policies, will be periodically refreshed as necessary and appropriate, including to incorporate lessons learned and findings from investigations and internal audits.

### THE SPIRIT & THE LETTER CORE POLICIES

- Acceptable Use
- Anti-Money Laundering
- Conflicts of Interest
- Cybersecurity
- EHS
- Fair Competition
- Human Rights
- Improper Payments Prevention
- Insider Trading and Stock Tipping
- Intellectual Property
- International Trade Compliance
- Open Reporting
- Privacy
- Quality
- Reporting and Recordkeeping
- Respectful Workplace
- Security
- Supplier Relationships
- Working with Governments

Our commitment to integrity and open reporting serves as the foundation for GE to deliver on its other commitments and to help build a world that works.

[READ THE SPIRIT & THE LETTER ▶](#)

[READ OUR EHS POLICY ▶](#)

[READ OUR OPEN REPORTING POLICY ▶](#)

[READ OUR RESPECTFUL WORKPLACE POLICY ▶](#)

Within the S&L framework, there are 19 core policies to help employees perform their jobs and navigate key regulatory areas under compliance. As these policies are intended for our entire employee population, we most recently updated all policies in 2021 to be simpler, principle-based and easier to understand and follow. Our policies adopt a practical layout for efficient navigation. The information is organized as follows:

- **What to Know** – states GE's commitments in the specific policy area and provides helpful context on why the policy matters.
- **How to Comply** – covers the specific role and responsibilities employees need to follow to be compliant with GE's expectations.
- **Get Help** – lists valuable, relevant resources for additional guidance on the policy topic and information on how to raise concerns.

## ALWAYS WITH UNYIELDING INTEGRITY GE's Ethics & Compliance program



GE's Ethics & Compliance program focuses on prevention, detection and response. It begins with GE leadership's personal engagement on integrity. GE leaders across the businesses personally drive a culture of integrity everywhere GE operates by leading by example, incentivizing compliance and promoting open reporting. This culture is supported by a robust Ethics & Compliance program. To ensure the program is evolving as new risks emerge, GE relies on a team of legal and functional experts to help us stay ahead of significant compliance risks and a changing regulatory landscape.

### Compliance training & communications

Each GE business uses a focused training and communications plan to educate employees about the risks that are associated with their work. With a broad, global workforce across multiple business segments, plus changing workforce demographics and modes of communication, the GE program requires constant reinvention and customization by each GE business to stay relevant. Salaried new hires across all GE businesses receive a streamlined basic compliance training course.

Additional training on key risk areas is provided to targeted employee groups based on risk. Each GE business also reinforces these learnings through a variety of communications, including leadership messages, newsletters, integrity campaigns, videos, infographics and embedded messaging within various digital tools. We invest in refreshed content on an ongoing basis, and business training and communication plans are adjusted annually based on the output of our enterprise compliance risk assessment.

### Voice of integrity: open reporting

Open reporting is a cornerstone of GE's commitment to integrity. Every employee is responsible for integrity, and GE expects its leaders to foster an environment in which employees are encouraged to raise integrity concerns without fear of retaliation. Employees serve as the best line of defense for the early detection of potential issues, and open reporting activity is one of the best indicators of a culture of integrity and employee engagement on compliance priorities.

GE manages employee concern reporting through its Global Open Reporting & Ombuds Program. Under the program, employees are required to submit concerns regarding potential violations of law, regulation or GE policy through one of the available open reporting channels, including managers, Human Resources, Legal, Compliance,

Internal Audit, Ombuds and anonymously through webform. The program serves as a safe forum for whistleblowers—GE understands that it can be difficult for some employees to come forward with their concerns and the anonymous reporting channel is a critical pillar of the open reporting program. Each business has at least one full-time ombudsperson and, in addition, a network of part-time employees across the globe to whom concerns can be raised. In 2021, 2,355 concerns were raised, 2,275 of which were closed, with the remaining cases pending ongoing investigations and further review.

GE fully examines every integrity concern raised and takes necessary remedial actions where appropriate. During the investigation process, GE:

- Forms an independent and objective investigation team;
- Obtains the facts through interviews and/or reviews of documents;
- Reaches conclusions, whenever possible, from the facts the team is able to obtain;
- Recommends corrective action, if necessary; and
- Provides the person who raised the original concern (if that person is known) with feedback on the outcome, while maintaining the confidentiality and privacy of all involved (to the extent possible).

Certain cases are treated with special care depending on the individuals or content involved. Concerns related to senior executives or Company officers must be escalated, as must be any complaint that could materially impact financial reporting or controls, or that relate to federal securities law matters. Finally, the Significant Cases Committee (SCC) is responsible for performing monthly reviews of high-risk open reporting investigations across the Company. The members of the SCC include the Chief Audit Executive and Vice Presidents of Compliance and Global Investigations. The SCC reviews the significant case criteria annually to ensure both internal and external risks are considered.

GE measures the strength of its open reporting program using a number of metrics, which are reviewed at least monthly throughout the year. The program tracks the average number of days that it takes to close each investigation raised through open reporting, targeting resolution within 60 days of being reported. Businesses are required to escalate to the SCC any cases open for longer than 90 days that come through open reporting channels. The program also measures cases per 1,000 employees, which enables year-over-year comparisons within and across businesses, and enables us to control for any headcount changes. In addition, we track confirmation and anonymity rates, which are important to understand the health of our program.

Retaliation for raising a concern or for participating in an integrity investigation is strictly prohibited, and violations are dealt with seriously and swiftly, up to and including termination.

## Compliance risk mitigation

GE's Ethics & Compliance team runs an annual assessment that focuses on evaluating the inherent risks and the strength of our internal controls across all our businesses. The assessment process asks each business to benchmark its own compliance programs against the 19 Spirit & Letter policies, which the Ethics & Compliance team includes in an overall assessment as to how GE performs in each key policy area. Insights from this process are used in many aspects of the compliance program including by identifying additional training needs, control improvements, and other areas that may need remediation efforts. The compliance risk assessment also feeds into the GE Enterprise Risk Management process, as appropriate.

## Compliance governance

GE has a rigorous compliance governance process, both at a corporate and business level. Each business holds a quarterly review board meeting, which is attended by the most senior business leaders, including the CEO, during which their risk assessment, mitigation efforts, and other compliance issues are discussed. Additionally, each business meets with Company's Chief Compliance Officer twice per year to discuss its risk assessment, any program weaknesses or enhancements, and any compliance trends; and reports its most significant enterprise risks and compliance issues to the Company's Audit Committee on an annual basis.

At a corporate level, the Chief Compliance Officer holds two to three meetings per year with the Company's most senior officers to discuss significant program updates, open reporting trends, significant investigations, and business updates on key risk areas. In addition, the Chief Compliance Officer and Vice President of Investigations report on the same issues to the Audit Committee periodically.

## ANTI-CORRUPTION AND BRIBERY

GE has long taken a leading role in pushing for transparency and integrity in the global marketplace. Our stance against improper payments in business transactions is a key element of our compliance program and represents a core belief in how we do business. In short, GE prohibits bribery in all business dealings, in every country around the world, with both governments and private sector. This prohibition applies to GE employees, as well as external parties who work for or represent GE.

We maintain strong controls aimed at preventing and detecting bribery. GE's approach to compliance in this critical area is *multifaceted*. Among its key features are:

- Corporate policies and procedures that reflect the Company's approach by prohibiting improper payments in every transaction, whether with a government or with a private party
- Extensive controls, including thorough due diligence, careful screening and training on GE policies for third-party intermediaries such as distributors, service providers, and commercial agents and representatives
- Heightened attention to key risk areas such as gifts and entertainment, travel and living expenses, donations, and facilitating payments
- Prompt investigation and remediation of any concerns
- Extensive training of GE employees on improper payments
- Robust internal controls and accounting processes designed to detect and prevent violations of Company policy relating to improper payment risks and to ensure accurate books and records relating to transactions
- Increased emphasis and enhanced due diligence concerning improper risk associated with mergers, acquisitions and joint ventures

## THE IMPORTANCE OF STRONG ANTI-CORRUPTION COMPLIANCE

Greater attention is being paid to the effectiveness of corporate compliance programs in preventing improper payments. The Justice Department and the U.S. Securities and Exchange Commission (SEC) have issued a resource guide on the U.S. Foreign Corrupt Practices Act (FCPA) that endorses a strong compliance program. The UK Bribery Act, the Clean Company Act in Brazil, the Sapin II Law in France, the 231 Decree in Italy and the U.S. Sentencing Guidelines similarly highlight the need for a strong program. As part of the compliance program at GE, operating with a strong anti-corruption program is a critical component in how we do business.

[Anti-Corruption Policy ▶](#)

## Privacy and cybersecurity



*At GE, ensuring the security of our information, systems, products, and network is, and always will be, a top priority.*

GE is committed to protecting information about our employees, our customers, our suppliers and our company, as well as the technology resources GE provides to its employees and contractors. We have adopted a “defense in depth” approach, in which multiple layers of security controls are placed throughout our systems, and a security by design approach, to build security into our products, both of which enable GE to proactively protect against and respond to a dynamic cyber threat landscape. As such, GE has implemented detailed cybersecurity and information protection policies.

### **GE'S CYBERSECURITY FRAMEWORK**

At GE, ensuring the security of our information, systems, products, and network is, and always will be, a top priority. GE has adopted the National Institute of Standards and Technology Cybersecurity Framework and International Organization for Standardization 27001 Framework as the basis for our cybersecurity controls framework. Each cyber function (Identify, Protect, Detect, Respond and Recover) is managed by defined governance, risk assessment, control implementation, control effectiveness monitoring and metrics.

GE has implemented a layered defense approach to security, which combines multiple mitigating security controls to protect our resources and information and improve our cyber resiliency. Our central cybersecurity framework reaches our shared services operations and the businesses to optimize our protection based on industry specific requirements.

We devote substantial resources to maintaining an information technology infrastructure that implements physical, administrative, and technical controls designed to protect information stored on GE's networks, including customer information, personal information, intellectual property and proprietary information. Information that could result in a significant harm to GE if lost, or intentionally or accidentally misused, is subject to enhanced security controls. GE's most sensitive information is identified and included within the scope of GE's crown jewel program through an annual review and analysis of GE's critical business information and programs.

In addition, we have committed resources and implemented processes to more effectively prevent, detect, and respond to cyber threats. GE's central cyber crisis management team exercises, tests and continually improves our cyber crisis management plan through rigorous tabletops

and simulations at the enterprise and business levels. Working with GE legal, communications, privacy, and compliance teams, the central cyber crisis management team also addresses any security concerns or incidents that could present an enterprise risk to GE, which includes third party supplier incidents. These measures reflect GE's long-term commitment to protecting our employees, serving our customers and preserving shareholder value. Despite these measures, GE may not be able to successfully prevent or defend against all cyber-related attacks.

GE's approach to product cybersecurity includes lifecycle management, vulnerability management, customer notifications, incident response, issuing security bulletins and advisories, and a dedicated channel for receiving and responding to vulnerability reports. We have also developed secure development lifecycle design practices to secure our software designs and connected products.

### **PROTECTING GE'S DIGITAL ECOSYSTEM**

The increasing degree of interconnectedness among companies and their affiliates, partners, suppliers and customers underscores the need for companies to evaluate cybersecurity threats not only to their own internal networks, but also to the larger ecosystem in which they operate. We understand that protecting the confidentiality, integrity and availability of information on GE's network necessarily extends to business partners who are afforded access to such information. GE contractually requires its suppliers to appropriately secure and maintain their information technology systems and protect GE's information on their systems. GE performs security assessments on certain suppliers based on a risk assessment and rating process performed by GE's cyber team. Higher risk suppliers are subject to more frequent reassessments and onsite assessments.

GE understands our employees serve an important role in helping to safeguard GE's information and systems. At the enterprise level, we provide comprehensive security awareness training to help our employees understand their information protection and cyber security responsibilities at GE, identify phishing and other cyber threats, exercise vigilance and secure methods when sharing sensitive information with third parties, and practice good cyber hygiene in their personal lives and when using social media. GE businesses provide additional training tailored to their customer requirements, regulatory obligations and industry risks.

We recognize that technology and the nature of its threats and risks are changing, and GE will continue to evolve to meet those changes. GE believes collaboration is important for effective cybersecurity solutions—bringing together the best minds and the best ideas. Global interconnectedness means that no one company or country operates alone. We continuously seek to engage with our regulators, customers, suppliers, employees and industry colleagues to improve cybersecurity collaboratively. In addition, we engage in public private partnerships, such as information sharing and analysis centers, to share actionable cyber threat indicators. These activities have resulted in improved capabilities that are quicker and more effective in responding to dynamic threats.

## CYBERSECURITY GOVERNANCE AND LEADERSHIP AT GE

GE's Global Chief Information Security Officer (CISO) is responsible for developing an information security program that enables business leaders to make risk decisions while protecting the business from security threats and risks. This program is designed to protect GE's products and information resources, and the information contained therein, including employee, customer, and supplier information stored in GE's systems. The Global CISO works collaboratively with business unit CISOs to analyze cybersecurity and resiliency risks to GE; consider industry trends; implement controls, as appropriate, to mitigate these risks; and enable business leaders to make risk-based decisions. As part of its oversight role, the Audit Committee of GE's Board of Directors reviews GE's practices and programs related to cybersecurity periodically throughout the year. The Audit Committee is updated regularly on GE's cyber threats and risk management strategy. GE's Global CISO meets on a recurring basis with our CEO and other senior leadership to review and discuss GE's cybersecurity program, including emerging cyber risks, threats, and industry trends. The business CISOs conduct business level reviews and discuss cyber related issues at regular meetings. In addition, GE periodically engages third-party cybersecurity companies to assess GE's cybersecurity program for maturity, effectiveness, and consistency with prevailing industry standards and GE's regulatory requirements as well as test GE's security posture.

## GE'S PRIVACY PROGRAM

GE employs privacy practices based upon its Privacy Enterprise Standard, which is designed to support its compliance with GE's Privacy Commitment and applicable laws. The GE privacy program includes the appointment of a Global Chief Privacy Officer and a network of privacy leaders, education and awareness programs, incident response protocols, audit routines, and a Privacy by Design approach to process and system development that incorporates privacy impact assessments. The program also includes technical and organizational information security measures designed to protect personal information. Supplier engagements provide for the processing of personal information in a manner consistent with the Commitment and applicable law.



## GE'S PRIVACY COMMITMENT AND APEC CERTIFICATION

GE's Commitment to the Protection of Personal Information (Commitment) outlines standards applicable to its processing of personal information. The Commitment requires GE to adhere to the following principles:

- Process personal information fairly and lawfully.
- Limit the processing of personal information to the fulfillment of GE's specific, legitimate purposes.
- Limit the processing of personal information to that which is adequate, relevant and not excessive.
- Take reasonable steps to ensure personal information is accurate, and only retained for as long as necessary for the purposes for which it is collected.
- Make privacy practices clear to individuals.
- Provide for the exercise of individual rights in relation to personal information processed by GE.

The Privacy Commitment establishes the basis for cross-border transfers within GE, including where operations adhere to relevant parts of the Commitment as processors of personal information. GE also maintains APEC Cross Border Privacy Rules (CBPR) and Privacy Recognition for Processors (PRP) certifications as granted by accountability agent TRUSTe.

### GE'S PRIVACY COMMITMENT

GE respects the privacy rights of individuals and is committed to handling personal information responsibly, in accordance with applicable law, and GE's Commitment to the Protection of Personal Information.

## HUMAN CAPITAL

### Investing in our people

*Developed to improve field execution, Live Outage is a set of digital tools that replaces a more antiquated, paper-based approach and speeds up the outage process for our customers.*



GE's success starts with its people, and we are committed to making sure our employees fulfill their greatest potential. GE's people reflect the strengths of GE—diversity, dedication, and global perspectives, operating with the highest level of integrity and focus to fulfill GE's mission and deliver for our stakeholders. Our focus on building the best team requires regularly investing in the development of our people and ensuring the sustainability of talent and skills to drive individual and company performance. We continue to evaluate our benefit offerings to support our employees and their families. New offerings planned for 2022 include access to caregiver support, legal assistance and consultations, and ID theft protection.

#### PERFORMANCE MANAGEMENT SYSTEM

In 2021, we launched our new performance management system—"People, Performance, and Growth"—which is designed to help employees understand their performance against their priorities, as well as their demonstration of GE's Leadership Behaviors. This performance management system is driving greater responsibility for performance at an individual level. Outcomes are directly linked to incentive compensation. Our executive teams conduct regular assessments, including through business reviews, talent, potential and performance, particularly in the context of critical roles, succession and business goals. We also provide our employees with additional resources for training and strive to create a supportive work environment to help them manage professional and personal priorities.

#### GE'S U.S. FAMILY BENEFITS, INCLUDING FERTILITY, PARENTAL LEAVE AND CHILD CARE

GE provides a variety of benefits to employees and their families, including several options of medical, dental, vision, life and disability insurance, and retirement savings. Specific to family planning and benefits, we also offer personalized guidance and resources through counselors and online services to help manage challenges, money, and stress. These counselors are also able to help employees navigate adoption, pregnancy and preparing for parenthood, childcare, parenting, coping with disability, aging, and preparing for retirement. Both full time and part time employees are offered an Adoption Assistance Program that provides reimbursement for eligible adoption expenses.

Our parental leave is comprised of up to eight weeks of disability for the delivery, plus additional paid leave of up to 10 weeks for maternity, paternity or adoption. Full-time salaried employees also receive

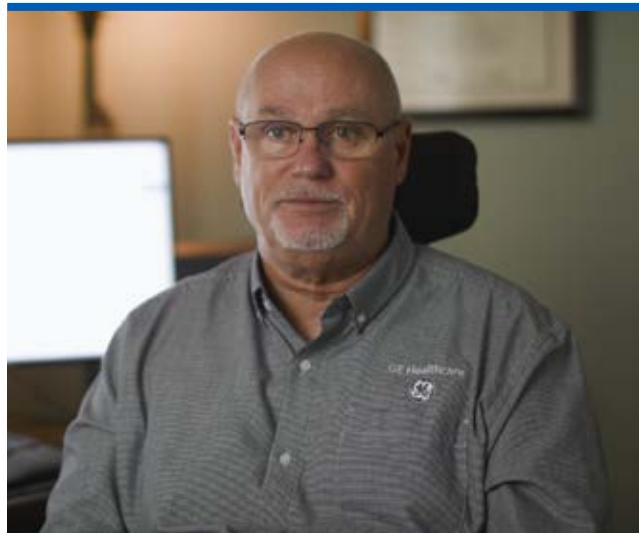
permissive leave, which allows them to take time off when needed with no predefined limits. To support parents, we offer a number of other benefits, including:

- **GE Babies:** On-demand maternity RNs provide personalized advice, tools and resources to guide moms through pregnancy planning to post-partum, infertility support, high-risk pregnancy and premature birth, and resolution of benefits and claims issues.
- **Maternity Care Select:** In certain markets, GE negotiated arrangements provide an enhanced maternity benefit for delivery, inpatient, hospital stays and routine prenatal care.
- **Moms on the Move:** GE moms who are nursing and traveling for business within the U.S. ship milk back to their babies for free. Moms can request milk storage and shipping kits to be sent to their location for use with their pump. Milk is delivered back home, and costs are covered by GE.



## FLEXIBLE WORK ARRANGEMENTS

GE encourages flexible working arrangements that enable employees to individualize their schedules to maximize productivity. Among the options GE offers are **flex time**, part-time opportunities, **job sharing**, reduced hours, telecommuting and remote work.



## GLOBAL WELL-BEING

While our employees are busy building a world that works, GE understands their personal wellbeing is essential to that success. HealthAhead has been GE's global wellbeing program for more than 10 years. Its mission is to support a culture that inspires and encourages GE employees and their families to optimize their health and wellbeing and live a well-balanced life. We are constantly evolving and innovating to meet that mission on a global scale. We carefully measure engagement and use metrics to inform strategies for future campaigns and activities. We partner with GE business globally to deliver high value, sustainable resources and programs under the philosophy of "Plan global, act local" to inspire engagement and reflect local cultures. HealthAhead is moving the needle with our communications and reaching employees with much-needed, supportive messaging.

All employees have access to well-being benefits such as Employee Assistance Programs (EAP), digital tools and mobile apps such as meQuilibrium (resilience and stress management) and Grokker (video-based, holistic well-being and challenge tool). We are currently operational in 107 countries and have a network of more than 300 wellness champions that help us bring the program to life for our diverse workforce, whether they work at manufacturing sites, in an office building or are remote.

The global pandemic has placed an unprecedented level of stress and anxiety among GE employees as they deal with their personal needs and needs of their families as they perform their jobs. Due to these challenges, we provided a variety of COVID-19 support and resources including an internal website, monthly update emails from our CHRO, onsite vaccination clinics in certain locations, expanded caregiving resources, webinars and campaigns to help address change, stress, remote work and safety.

In addition, in 2021 we:

- Launched new branding and structure with a focus on holistic health introducing four pillars—physical, social, emotional—and adding financial well-being as a new pillar.

- Presented two global emotional well-being campaigns (It's OK not to feel OK) with leader support and emotional wellbeing stories from GE employees around the world.
- Hosted more than 30 live webinars for employees throughout the year, covering a range of wellbeing topics.
- Logged more than 1 million well-being minutes during our "Rise to the Challenge" campaign in May.

## RESPECTFUL WORKPLACE

Providing a safe, fair and respectful work environment is embedded in our culture, operations, and policies and procedures. Aligned with our Human Rights Statement of Principles, GE prohibits discrimination or harassment against anyone based on race, color, religion, national or ethnic origin, ancestry, sex, gender, sexual orientation, marital status, genetic information, age, disability, military and veteran status, or any other characteristic protected by law. GE respects workers' rights to freedom of association, privacy, collective bargaining, immigration, working time, wages and hours, as well as prohibiting forced, compulsory and child labor and employment discrimination in our operations and business partnerships.

Our Respectful Workplace Policy in *The Spirit and The Letter* details every employee's responsibility and commitment in treating employees, applicants, customers, suppliers, contractors and anyone we interact with or providing services to GE, with fairness and respect. The Respectful Workplace Enterprise Standard outlines guidance to ensure compliance and prohibition of discrimination, harassment or bullying against any employee or applicant based on any characteristic protected by law. Any employee with compliance concerns can raise that concern through the open reporting and Ombuds Program.



## DEVELOPING OUR PEOPLE

GE is committed to the sustainable development of our people. A GE employee's learning journey is personalized and begins upon joining the organization. In 2021, we complemented on the job learning with targeted leadership development experiences to equip our leaders to shape our culture while leading as lean practitioners.

On-the-job learning is supported by content available on our learning technologies:

- GE Learning provides access to on-demand resources and registered more than **11 million online course completions** from across regulatory required, GE required and elective courses of interest spanning desktop application, soft skills, technical and product topics. On average, over 90,000 employees engage with our learning management platform monthly.

- BrilliantYOU houses our Lean Collection of custom assets (tools, templates, videos, etc.) designed to orient our employees to the Leadership Behaviors and lean capabilities required to drive our cultural transformation. In 2021, **48,547** hours of Lean Lessons were consumed by leaders across all levels and **81,643 distinct** employees engaged with BrilliantYOU resources. The Lean Collection is comprised of 339 custom created lean assets.

Learning through others is enabled in peer-to-peer exchanges, coaching interactions and in communities of practice. Employees work in proximity of others with different perspectives, knowledge levels and development aspirations. This creates a learning environment that is collaborative, creative and informal.



Formal leadership development offerings have been designed to strategically elevate our executive talents' readiness to deliver results while driving efficiencies, eliminating waste and generating value for our customers. These experiences are structured to challenge leaders as they explore complex concepts and the rigorous application of the topics being learned. This curriculum includes:

#### FRONTLINE LEADERSHIP PROGRAM 2021

- Teaches leaders to implement a system to deliver customer value through proper support and leadership to those who are on the front line and closest to the process.
- Guides participants to identify wastes and deploy visual management needed to drive improvements.
- Internally facilitated by GE experts knowledgeable in the topics being taught and supplemented with a leadership behavior simulation.

#### BUSINESS LEADERSHIP PROGRAM 2021

- Prepares leaders to run a business in a lean organization. Participants invest time in live, virtual instruction, simulations, coaching and hands-on practical assignments deployed in the flow of work to ensure their readiness in driving a transformation over time.
- Components include internal leader dialogues, industry thought leaders, executive coaches and external faculty.
- Topics include customers and markets, finance, strategy and innovation, change management, and talent and culture.

#### LEADERSHIP IN ACTION 2021

- Equips senior leaders to lead GE's cultural transformation through a focus on Leadership Behaviors and lean principles/tools with overarching themes of respect for people and continuous improvement.
- Uses peer-to-peer engagement, interactions with customers and teams, 1:1 coaching, and on-the-job activation.



#### 15 MINUTES A DAY OF BRILLIANTYOU

GE Gas Power Principal Engineer of Product Safety Larry Danner is a frequent user of GE's learning opportunities on BrilliantYOU. In 2021, Larry made a point to set aside 15 minutes at the beginning of every day to look at a new piece of content, whether it is lean or safety. Larry finds that "BrilliantYOU helps focus on the things that matter to our business, which can then be translated into focusing my personal efforts in a beneficial way for the company."



#### LEARNING LEAN

Learning is core to any organization that is focused on continuous improvement. As part of his personal development plan around lean, GE Aviation Chief Information Officer David Burns is a regular user of GE's learning resources on BrilliantYOU. These lessons are helping him learn about lean concepts while also spurring thoughts on how to apply those learnings to his role on a day-to-day basis and enable GE's transformation. David has been "setting time aside in the morning to engage with the Lean Lessons on BrilliantYOU over a cup of coffee and take notes to continually refresh myself on the insights in the curriculum."

# Advancing diversity and inclusion

At GE, we know inclusion and diversity make us more competitive and help create value for our customers, investors, and employees. We believe fostering an inclusive culture empowers everyone to do their best work because they feel accepted, respected, and that they belong.

I am eager to continue building on the foundation laid by our former Chief Diversity Officer (CDO) Mike Barber and the business CDOs and leadership teams. I see my role as ensuring our teams more closely reflect the diversity of the communities where we work, instilling a global mindset, and supporting a workplace culture where individual differences are embraced and where the best ideas win, regardless of who they come from.

I am starting as CDO as we begin our journey to become three stronger, more-focused companies in aviation, healthcare, and energy. We will ensure inclusion and diversity are appropriately considered and prioritized as we move forward. I am excited about the opportunity this presents each business to deeply re-examine the aspects of its culture and processes that can be redesigned to better support inclusion and diversity. In partnership with the business leadership teams, we will identify and implement sustainable changes to support progress now and for years to come.



**BRANDI THOMAS**

Chief Diversity Officer & VP,  
Chief Audit Executive  
GE

We are nearly two years into our reinvigorated strategy to generate long-term, sustainable progress on diversity and inclusion at GE. Our investment in identifying root causes and solutions for challenges and barriers to recruiting, retaining and promoting diverse talent has never been more critical.

Our inclusion and diversity priorities are focused on driving transparency, accountability, and community, with an understanding that meaningful change is data driven.

You can read about our progress in our [2021 Diversity Annual Report](#).

## Workforce diversity

In 2021, we added new dimensions of employment diversity to better focus our efforts and be held accountable for their impact—voluntary self-identification data for U.S. veteran status<sup>1</sup> and disability (U.S.).<sup>2</sup> The data shared is representative of GE's workforce on December 31, 2021. We will continuously look to improve the depth and breadth of our diversity data. Following the updates to the voluntary self-identification categories and selections for employees in the U.S., in the future this might include other voluntary self-identification data like sexual orientation and gender identity.

Since 2020, we have seen growth at the leadership level for both women globally (+1.2%) and for total U.S. race and ethnic minority (+1.7%). More than 10% of our U.S. employees are military veterans and 3.7% self-identify as having a disability.<sup>3</sup>

### GE IS A TRULY GLOBAL COMPANY:



68% of our employees are based outside of the United States and our workforce represents nationalities from 169 countries, territories and regions

#### Board of Directors<sup>4</sup>

2 of 4 Board leadership positions are held by women.

Our policy is to build a Board that represents a range of backgrounds.

**5 Female**      **38%**



**2 Ethnically diverse**      **15%**



**5 Born outside U.S.**      **38%**



<sup>1</sup> The data for U.S. Veteran and U.S. Disability reflect responses from employees who voluntarily updated these self-identification fields as of December 31, 2021.

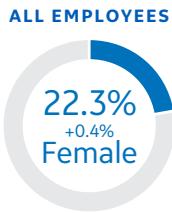
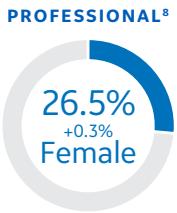
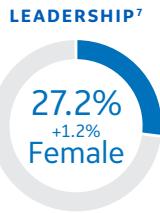
<sup>2</sup> The U.S. Department of Labor defines a disability as having a physical or mental impairment or medical condition that substantially limits a major life activity, or if you have a history or record of such an impairment or medical condition.

<sup>3</sup> Data from our EEO-1 Component 1 Report (EEO-1 Report) is available [here](#). The EEO-1 Report mandates the use of specific job categories, which differ from how our workforce is structured. While we are making data from our EEO-1 Report available, we believe the diversity representation data as presented in our Diversity Annual Report and our website is the most meaningful measure of our diversity progress.

<sup>4</sup> Reflects Board composition as of May 4, 2022.

## GE<sup>5</sup>

GLOBAL DATA



U.S. DATA

**3.7%**  
Disability (U.S.)<sup>9</sup>

**10.1%**  
U.S. Veteran Status<sup>9</sup>

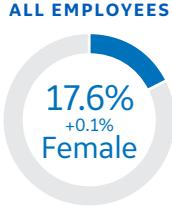
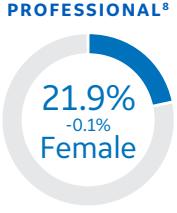
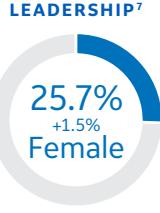
U.S. DATA

	ASIAN	BLACK/AFRICAN AMERICAN	HISPANIC/ LATINX	AMERICAN INDIAN/ ALASKA NATIVE	NATIVE HAWAIIAN/ PACIFIC ISLANDER	MULTIRACIAL	TOTAL RACE & ETHNIC MINORITY
<b>Leadership</b>	11.1%	4.2%	4.0%	0.2%	0.1%	1.0%	20.5%
	<b>0.0%</b>	<b>+0.8%</b>	<b>+0.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>+0.3%</b>	<b>+1.7%</b>
<b>Professional</b>	11.5%	4.6%	5.4%	0.2%	0.1%	1.7%	23.5%
	<b>-0.6%</b>	<b>+0.2%</b>	<b>+0.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>+0.2%</b>	<b>+0.1%</b>
<b>All Employees</b>	8.5%	6.7%	6.8%	0.3%	0.1%	1.7%	24.2%
	<b>-0.2%</b>	<b>-0.1%</b>	<b>+0.3%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>+0.1%</b>	<b>+0.1%</b>

2020 Δ

## Aviation<sup>5</sup>

GLOBAL DATA



U.S. DATA

**4.0%**  
Disability (U.S.)<sup>9</sup>

**11.1%**  
U.S. Veteran Status<sup>9</sup>

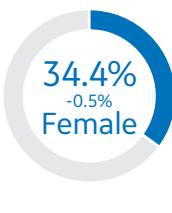
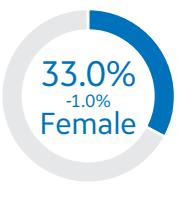
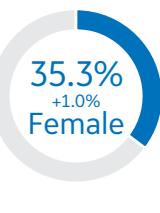
U.S. DATA

	ASIAN	BLACK/AFRICAN AMERICAN	HISPANIC/ LATINX	AMERICAN INDIAN/ ALASKA NATIVE	NATIVE HAWAIIAN/ PACIFIC ISLANDER	MULTIRACIAL	TOTAL RACE & ETHNIC MINORITY
<b>Leadership</b>	7.4%	5.1%	3.1%	0.2%	0.0%	0.5%	16.3%
	<b>+1.0%</b>	<b>+1.2%</b>	<b>-0.3%</b>	<b>-0.3%</b>	<b>0.0%</b>	<b>+0.3%</b>	<b>+1.8%</b>
<b>Professional</b>	7.5%	4.6%	4.4%	0.1%	0.1%	1.7%	18.4%
	<b>+0.1%</b>	<b>-0.1%</b>	<b>+0.2%</b>	<b>-0.1%</b>	<b>0.0%</b>	<b>+0.4%</b>	<b>+0.6%</b>
<b>All Employees</b>	5.3%	6.5%	5.3%	0.3%	0.1%	1.4%	18.9%
	<b>+0.2%</b>	<b>+0.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>+0.2%</b>	<b>+0.5%</b>

2020 Δ

## Corporate<sup>5,6</sup>

GLOBAL DATA



U.S. DATA

**4.5%**  
Disability (U.S.)<sup>9</sup>

**4.3%**  
U.S. Veteran Status<sup>9</sup>

U.S. DATA

	ASIAN	BLACK/AFRICAN AMERICAN	HISPANIC/ LATINX	AMERICAN INDIAN/ ALASKA NATIVE	NATIVE HAWAIIAN/ PACIFIC ISLANDER	MULTIRACIAL	TOTAL RACE & ETHNIC MINORITY
<b>Leadership</b>	13.3%	4.1%	2.1%	0.0%	0.2%	0.9%	20.7%
	<b>+0.1%</b>	<b>+1.7%</b>	<b>+0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>+0.5%</b>	<b>+2.3%</b>
<b>Professional</b>	22.2%	4.4%	4.4%	0.2%	0.1%	1.8%	33.2%
	<b>-2.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>-0.9%</b>
<b>All Employees</b>	19.9%	4.5%	4.5%	0.3%	0.1%	1.7%	30.9%
	<b>-1.9%</b>	<b>-0.3%</b>	<b>0.0%</b>	<b>+0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>-1.2%</b>

2020 Δ

<sup>5</sup> Data representative of GE's workforce as of December 31, 2021, extracted in January 2022. System exports show percentages out to several decimal points. Due to this precision, totals may not sum across due to rounding.

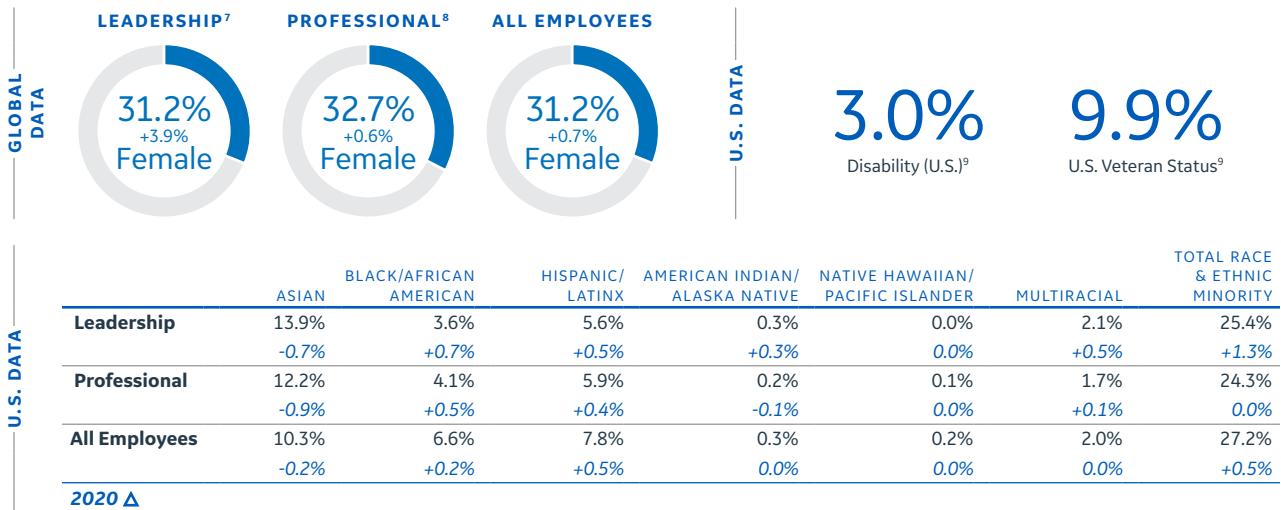
<sup>6</sup> Year-over-year changes shown may not reflect previously reported numbers due to restructuring changes in the business unit in 2021. Corporate is inclusive of Digital, Capital, International Markets, and Global Research.

<sup>7</sup> Leadership encompasses the top 1.5% of all active employees.

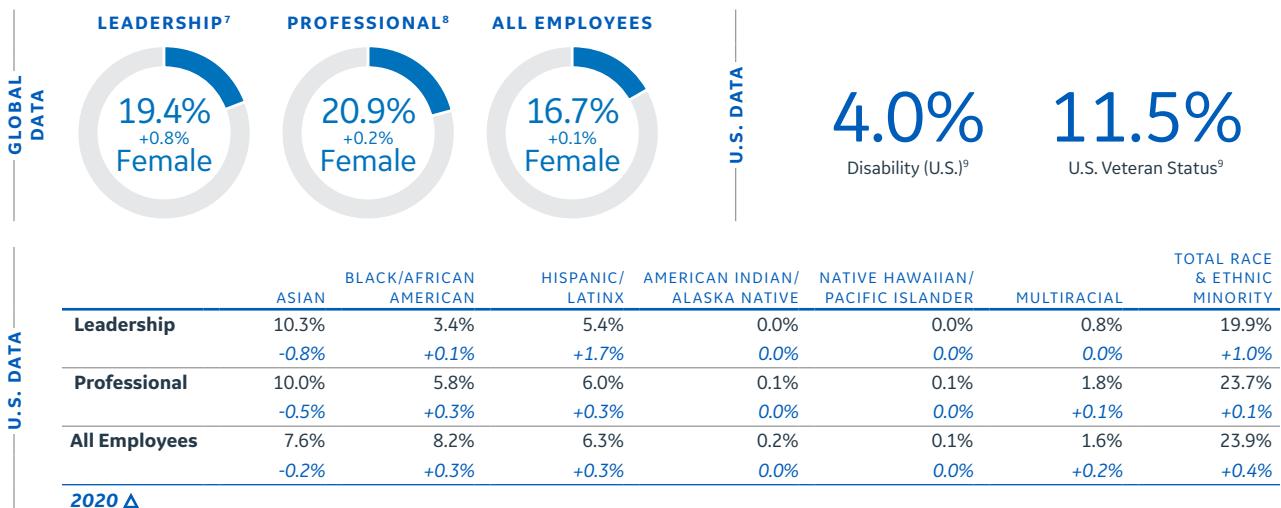
<sup>8</sup> Professional accounts for all active non-production employees, excluding leadership.

<sup>9</sup> 2021 first year reported.

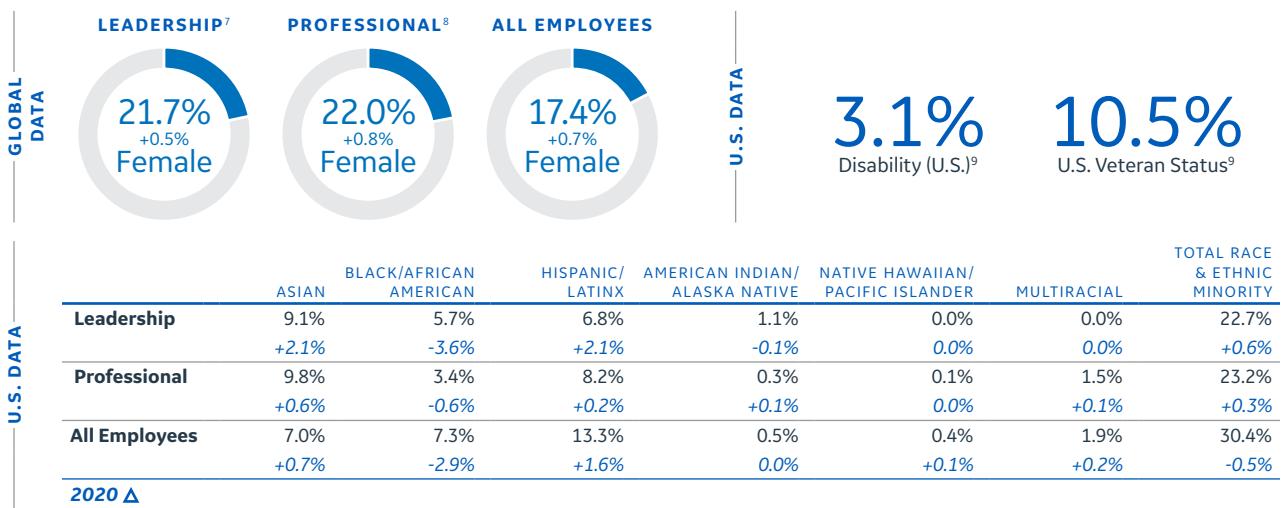
## Healthcare<sup>5</sup>



## Power<sup>5,10</sup>



## Renewable Energy<sup>5</sup>



<sup>10</sup> Year-over-year changes shown may not reflect previously reported numbers due to restructuring changes in the business unit in 2021. Power is inclusive of Gas Power, Steam Power, Power Conversion, Nuclear and other.

## Recruitment and retention

In 2021, we completed several initiatives to help us recruit and retain a more diverse workforce. For example:

- A cross-business team created a standard guide for managers on how to better ensure a more inclusive and equitable experience for each employee.
- GE Gas Power used data and one-on-one discussions to develop a plan to improve retention of underrepresented minority employees in the U.S.
- GE Healthcare analyzed data and leveraged lean tools to establish a number of improvements, including setting up ratios for internal succession plans, increasing the candidate referral incentive for GE Employee Resource Group (ERG) members, establishing additional partnerships with external recruiting partners to source talent at all levels, and ensuring that interview panels themselves are made up of a diverse group of employees. GE Healthcare has committed to increasing underrepresented minorities in executive leadership roles and hopes to reach 13% by the end of 2023 based on its current data and the overall market availability of talent, according to the U.S. Census and the U.S. Bureau of Labor Statistics.

- The GE Foundation expanded its successful Next Engineers into four communities globally—Cincinnati, Ohio; Greenville, South Carolina; Stafford, U.K.; and Johannesburg, South Africa. Next Engineers is a global college-readiness program offering hands-on opportunities that empower the next generation of young, diverse minds to build a better future, wherever their careers take them.
- An accelerator program that introduces middle school-aged girls from diverse backgrounds to STEM concepts in an engaging and relatable way, the GE Girls Initiative celebrated its 10<sup>th</sup> anniversary.

## Commitment to pay equity

We are proud of our long-standing commitment to fair and competitive pay practices. On average, men and women performing similar work are paid within 1% of each other in each GE business. Going forward, **our goal remains 100% pay equity** in each of our businesses.

### PAY EQUITY BASED ON 2021 SALARY DATA

Our pay equity results include gender and U.S. underrepresented minorities. For example, in our Renewable Energy business, women performing similar work make on average 99% of what men make. Furthermore, U.S. underrepresented minority employees performing similar work make on average 102% of what non-underrepresented minority employees make in our Renewable Energy business.

AVIATION	CORPORATE	HEALTHCARE	POWER	RENEWABLE ENERGY
<b>2021 GLOBAL DATA</b> <i>Gender Pay Equity</i>				
100%	99%	100%	99%	99%
<b>2021 U.S. DATA</b> <i>U.S. Underrepresented Minorities Pay Equity</i>				
100%	101%	100%	100%	102%

## Going forward

In 2022, we are developing plans for the creation of three independent companies focused on flight, healthcare, and energy. Diverse teams and perspectives will help accelerate the innovation needed to create a future of smarter and more efficient flight,

develop precision healthcare that personalizes diagnoses and treatments, and lead the energy transition to drive decarbonization. We will ensure inclusion and diversity are appropriately considered and prioritized as each business deeply re-examines the aspects of its culture and processes that can be redesigned to better support inclusion and diversity.

### "STEM FOR THE NEXT 50" INNOVATION CAMP

In celebration of the United Arab Emirates (UAE)'s 50<sup>th</sup> Jubilee, GE partnered with INJAZ Al-Arab to host its "STEM for the Next 50" Innovation Camp in Dubai. More than 200 female students between the ages of 15 and 17 participated in a week-long program preparing them for STEM careers that will drive innovation across various sectors in the UAE. During the camp, students from five schools engaged with industry experts, including more than 50 GE volunteers and guest speakers. As part of the program, students were divided into teams and tasked with submitting a solution to an energy transition challenge. The winning teams participated in a hands-on learning experience with GE leaders at a GE office in Dubai on March 8, 2022, International Women's Day.

[Learn more ▶](#)



## 30 Years of employee resource groups

In 2021, GE's Employee Resource Groups (ERGs) marked 30 years of adding value to our colleagues and businesses by helping to engage and develop the diverse talent needed to build a world that works. These communities are built on common backgrounds and experiences that welcome all employees to learn, connect, advocate and foster a sense of belonging. 2021 was a milestone year for GE's oldest ERG, the African American/Affinity Forum (AAF). Born out of activism and Black excellence, the AAF celebrated 30 years by paying homage to its past and reinvigorating its commitment to drive transformative growth. The AAF is a supporter of local communities, partnering with many organizations that promote Black/African American excellence and minorities in STEM. Since 1995, the AAF has generated funding for scholarships for college students, easing the financial burden for many students.

## Climate Action Challenge

In recognition of Earth Day, GE's Green Team Network launched the Climate Action Challenge. The challenge is a 90-day guided event where employees are getting involved with hands-on projects that benefit the planet and support GE's efforts to become more sustainable. Teams around the globe are working to turn passionate ideas into tangible outcomes through weekly assignments, networking sessions and training opportunities.

## GE NAMED COMPANY OF THE YEAR BY THE SOCIETY OF HISPANIC PROFESSIONAL ENGINEERS

The Society of Hispanic Professional Engineers (SHPE) is the largest association in the U.S. for Hispanics in STEM fields. In 2021, GE was honored to be named SHPE's Company of the Year. The 27-year relationship between GE and SHPE predates the formation of the Hispanic Forum (HF), an ERG within GE aimed at increasing Hispanic and Latinx representation and fostering opportunities for career growth. GE is a member of SHPE's Industry Partnership Council (IPC), which comprises top national companies that are committed to diversity and inclusion. In this capacity, GE has supported SHPE's year-round programs, shared industry perspectives and helped members prepare for professional careers. GE employees also speak on SHPE panels, partake in local events and help recruit SHPE members. In 2021, the GE Foundation announced it would fund \$10,000 STEM scholarships for 22 students through SHPE. These will be awarded over the next two years, further cementing GE's commitment to creating a diverse talent pipeline to propel a more inspirational and inclusive workplace.

## SUPPORTING DURGAPUR'S SUSTAINABLE AND INCLUSIVE DEVELOPMENT

Since 2018, employees at GE's Steam Power facility in Durgapur, West Bengal, India, have been working with the non-profit Swami Vivekananda Vani Prachar Samity to upgrade living conditions within the local community. With funding from GE's Durgapur facility, the team has overseen the building of paved roads, ponds for fish farming, solar grids for streetlights and submersible pumps for clean water, sanitation and hygiene. Past projects also include assistance to families suffering from leprosy, basic education for tribal children, and the construction of a fourth community center of education where more than 200 women receive ongoing skills training in toy making, tailoring, farm productivity and medicine.



## CELEBRATING LGBTQAI+ PRIDE MONTH

In June 2022, GE's iconic sign in Schenectady, New York, was lit up in rainbow colors in honor of lesbian, gay, bisexual, transgender, queer, asexual, and intersex (LGBTQAI+) pride month. The sign was originally installed in 1926 on the roof of Building 37. The Monogram portion is 36 feet in diameter and the sign is 168 feet long, with each letter standing at 10 feet high. Approximately 112 25W LED light bulbs were used to illuminate each color. GE's Pride Alliance is welcoming of employees who identify as part of the LGBTQAI+ community and their allies. The group raises awareness around LGBTQAI+ issues and provides support and advocacy for creating inclusive work environments.



# GE respects our people, our planet and our communities

As a global company that services customers in over 175 countries, we are mindful of the impact our actions have on the world—whether it be the people who make up our global workforce or those of our suppliers, the communities where we live and work, or the planet itself. In line with our sustainability efforts toward continuous improvement for purposeful outcomes, we have prioritized the following commitments:

- Protect the safety of our people and those who do work on our behalf.
- Be responsible stewards of the environment.
- Maintain a strong EHS and environmental compliance program.
- Make progress toward our climate change emission goals and ambitions for Scope 1, 2 and 3 emissions.
- Reinforce our commitment to product quality and safety.
- Pursue environmental stewardship and circular economy in the design of our products.
- Invest in returning contaminated properties to protective reuse for communities with a priority on environmental justice communities.
- Respect the human rights of our own workforce and all of those in our value chain.
- Hold suppliers accountable for an ethical supply chain.
- Respect employee's rights to freedom of association.
- Transform our communities through healthcare and humanitarian support and shape the diverse workforce of tomorrow by leveraging the power of GE through the GE Foundation.

Our commitments start on the shop floor and grow to encompass commitments that reach into our communities and across the planet. With every decision, we seek to lead with integrity in all that we do.



# Safety

## Putting safety first

With approximately 168,000<sup>6</sup> employees and operations in over 175 countries, GE's impact across the globe is immense. Looking after the safety of our people and those who work on our behalf—so that they can fulfill GE's mission of building a world that works—is a top priority for the company.

Over time, we have seen an overall downward trend in our Injury & Illness rates, which compare favorably to [data from the U.S. Bureau of Labor Statistics](#). However, we are not satisfied: because even one injury is too many.

Regrettably, in 2021, four individuals lost their lives doing work for GE. While our number of fatal events has decreased since 2020, each fatality is a tragedy that touches the lives of families, friends and co-workers. There's more we need to do to ensure that those who work for us or do work on our behalf make it home safely each day.

GE leadership has taken significant steps to drive improvement across three areas: resource prioritization, leadership focus and company-wide attention on the importance of safety.

In 2021, GE launched the GE Safety Council to catalyze injury prevention efforts and support the further embedding of safety as a core attribute in each of our businesses. The Council complements our rigorous EHS program and includes EHS leaders from each of our businesses and from Corporate.

Leading the Council is Francisco Benavides, who joined GE in late 2021 as GE's Chief Safety Officer. With three decades of experience across a range of industries including aerospace, mining and utilities, Francisco's mission as Chief Safety Officer is to further the company's safety goals and improve overall performance.

At each of our businesses, there is CEO-level accountability for safety. Further reflecting GE's prioritization of improving health and safety in the workplace, a modifier for safety performance was added to our annual bonus program, in addition to financial metrics.

As the company embarks on its planned transition to three, independent global public companies, our teams remain focused on driving continuous improvement to ensure that safety comes first in all that we do within each business and across the enterprise.



### LEVERAGING LEAN TO IMPROVE SAFETY

Our business teams have been leveraging lean as a critical tool to help prevent events and drive safety as a core operational attribute.

In 2021, the Gas Power team defined their Safety Hoshin breakthrough—a lean tool—as achieving zero serious incidents. The team utilizes standard work to evaluate every Potentially Severe Event (PSE) as a serious incident. This starts with the frontline team openly reporting PSEs, escalating to leadership, completing investigations within 15 days and driving learnings and actions across the business.

A strong partnership between EHS and lean in Healthcare has been instrumental in identifying synergies, embedding standard work and driving process improvements across the business. While in Aviation, each kaizen event is expected to generate at least five safety improvements.

GE Renewable Energy's Vision Safe program continued throughout 2021 for employees and contractors, with a focus on Plan-Do-Review, which helps ensure jobs are completed safely every day. Using lean tools, more than 14,000 EHS Genba Walks have been held globally in 2021 to improve processes and leadership engagement.

#### SAFETY

	2019	2020	2021
<b>Injury &amp; Illness Total Recordable Rate<sup>2</sup></b>	0.60	0.53	0.60 <sup>1</sup>
<b>Days Away from Work Incident Rate<sup>3</sup></b>	0.28	0.29	0.32 <sup>1</sup>
<b>Fatalities - Employees (Count)<sup>4</sup></b>	3	3	0
<b>Fatalities - Contractor Workers (Count)<sup>5</sup></b>	2	4	4

Due to the changing nature of GE's enterprise, figures are periodically updated to reflect changes in scope and as additional information becomes available. For instance, acquired businesses may not have aligned data for the same time periods.

<sup>1</sup> Increase from 2020 to 2021 largely attributable to ongoing impacts of the global pandemic, as well as internal reorganization activities. 2020 data updated to include COVID cases recorded after publishing the 2020 Sustainability Report.

<sup>2</sup> Number of injury and illness cases globally per risk population YTD, based on 100 employees working 200,000 hours annually, as measured against OSHA recordability criteria.

<sup>3</sup> Uses OSHA calculation for days away from work cases (transfer or restricted cases are excluded), based on 100 employees working 200,000 hours annually.

<sup>4</sup> GE employees, leased workers, wholly-owned affiliate employees, and majority-owned joint-venture employees.

<sup>5</sup> Workers under GE EHS coordination, which may include GE-hired contract workers, consortium partner workers, and sub-contractors.

<sup>6</sup> Based on full-time equivalent, active employees as of December 31, 2021.

## Managing safety risks wherever we work

Our safety expectations extend beyond our own operations to all places where we work—customer sites, field services, and at our project installation and construction locations—and to all those who work on our behalf.

Although our safety expectations do not change, managing risks across various operations sites is inherently different.

The four fatal events we regrettably experienced in 2021 were contractor fatalities. As we have evaluated our performance over the past few years, we have identified contractor safety as a key focus area for improvement.

We have implemented a set of standards for contractor prequalification, as well as a system to manage the process globally. We review training and competency expectations, programmatic elements for high-risk operations such as working at heights, electrical work and executing lifts, as well as performance metrics.

Using these standards, we can assess capabilities and help drive safe execution in alignment with our expectations. When we find defects in programs or competency, we may partner with the contractor to provide risk mitigation plans or basic competency in certain areas.

We have also reinvigorated our incident investigation process. Ensuring we are recording and learning from both employee and contractor events, as well as putting mitigation plans in place to prevent them from recurring, is part of our overall commitment to a safe working environment for all.

GE's Life Saving Principles (LSPs) illustrate critical steps to stay safe in certain hazardous situations. These steps are never to be circumvented. All employees and contractors are empowered to stop work if they have any concerns about the task they are performing. These LSP documents, represented visually and in more than 20 languages, are widely available, posted at our operations and are used to orient our contractors and partners, specifically at our project sites, to GE's most fundamental expectations.

Although we believe GE's safety program is a commercial differentiator, we don't believe safety is proprietary. The benefit is greatest when we share our learnings and elements of our program to prevent injuries or events for all.

We will continue working tirelessly to improve the safety performance of our contractors, partner with safe companies and further refine our selection and contractor management processes to make them more proactive and effective.

## SAMPLE OF GE'S LIFE SAVING PRINCIPLES POSTERS, AVAILABLE IN SEVERAL LANGUAGES

**LIFTING OPERATIONS**

Follow the Lift Plan, and stay clear of suspended loads

**DO**

- 1 Follow the lift plan
- 2 Perform a daily pre-use visual inspection and operational check
- 3 Check that load does not exceed equipment load capacity

**DON'T**

- 1 Don't allow yourself or anyone else to be under a suspended load
- 2 Don't position yourself between the load and a fixed object you might hit by it
- 3 Don't use any damaged lifting equipment or accessories

**STOP WORK**  
You are the last line of defense.

**WORK AT HEIGHT**

Hook on where there is a risk of falling

**DO**

- 1 Use appropriate personal fall protection
- 2 Review, understand and follow the fall protection instructions
- 3 Make sure it is in good condition
- 4 Make sure it is attached to a suitable anchor point

**DON'T**

- 1 Don't work on a vertical ladder if anyone else is on the same line

**STOP WORK**  
You are the last line of defense.

**CONFINED SPACE**

Obtain authorization and check atmosphere before entering a confined space

**DO**

- 1 Only enter a confined space if you are authorized to do so and have a valid permit
- 2 Make sure emergency rescue capability are clearly defined and emergency teams will be present at all times
- 3 Have emergency equipment in place
- 4 Know and be prepared to follow rescue plan
- 5 Monitor ventilation and gas detection before, during and after work
- 6 Make a confined space identified and restrict access at all times

**STOP WORK**  
You are the last line of defense.

**OPERACIONES DE IZAMIENTO**

Observe el Plan de Izamiento y manténgase alejado de las cargas suspendidas

**DO**

- 1 Respete el plan de levantamiento
- 2 Realice una inspección visual y comprobación operativa diaria activa del uso
- 3 Verifique que la carga no excede la capacidad de carga del equipo

**DON'T**

- 1 No permanezca debajo de una carga suspendida ni permita que otros lo hagan
- 2 No se coloque entre la carga y un objeto fijo que podría aplastarlo
- 3 No use equipos de levantamiento defectuosos

**STOP WORK**  
You are the last line of defense.

**TRAVAUX EN HAUTEUR**

Toujours s'attacher quand un risque de chute est présent

**OBLIGATION**

- 1 Utiliser une protection contre les chutes
- 2 Vérifier l'équipement de protection contre les chutes
- 3 Fixer correctement l'équipement de protection contre les chutes au point d'ancrage

**INTERDICTION**

- 1 Ne pas travailler sur une échelle verticale si une autre personne travaille sur la même ligne

**STOPPEZ VOTRE ACTIVITÉ**  
Cessez dès la dernière ligne de défense.

**受限空间**

进入受限空间前，先获得授权并检测气体

**务必**

- 1 只有当受限空间及进入受限空间的许可时才可进入受限空间
- 2 在有人进入受限空间时，必须在受限空间外有人监护，且监护人应是专业人员（如：监护人、安全员）
- 3 应当设置警戒线
- 4 监测数据应立即开始监测执行
- 5 入受限空间、中止、结束受限空间作业后，必须清场并确认

**禁止**

- 1 未经许可不得进入受限空间
- 2 在受限空间内工作时，必须佩戴适当的个人防护装备，包括呼吸器、面罩、通风管等

**如不安全，停止作业**  
您是安全的最后一道防线。



### IMPROVING ERGONOMICS IN GE'S FACTORIES

GE Aviation's engine-manufacturing plant in Lafayette, Indiana, has been assembling CFM International's\* fuel-efficient LEAP engines.

Reflecting on the assembly of LEAP's compressor module, a team of technicians at the plant focused on the repetitive work of installing 48 thumbnail-size nuts on a component that requires a blind installation. Leveraging lean principles and tools, a new tightening tool was designed.

The technicians decided to add a small mirror to the wrench, allowing them to see into the module. The new, longer extension also allowed them to keep their arms and shoulders in a more neutral position. In addition to being more ergonomic, the new tool has reduced the time it takes to complete the task.

A similar story unfolded at a GE Healthcare site in Beijing, where technicians improved the final stretch of the manufacturing process for C-arms, semi-circular imaging systems used during surgery. An ongoing ergonomic hurdle was the installation of wheel covers on the machines, often requiring technicians to lie on the floor to complete the task.

A team of local operators and supervisors held a kaizen event, at which they proposed designing a jig that could improve the work. Within a few weeks, they had come up with a new design: a device that consisted of a 3D-printed mounting base sporting two screwdrivers that were pre-aligned with the thread holes. Through testing, the team found the new setup helped to shave around 15 minutes off the job, no lying down required. But there was still room for improvement and one team member made a suggestion—bringing in a lifting platform from another area in the plant. This would allow them to install the wheel covers at waist height.

With the elimination of squatting, they had reduced the task's REBA score, an ergonomic assessment tool that evaluates the risks to the body associated with certain jobs, by 86%.

Both the Aviation team and the Healthcare team were named finalists in the Ergo Cup, a prestigious competition run by the Applied Ergonomics Society and the Ergonomics Center of North Carolina. In March 2022, it was announced the Aviation team was named an Ergo Cup winner in the workplace solutions category.

\* CFM International is a 50-50 joint company between GE and Safran Aircraft Engines



## HOW WE WORK FOR SAFETY AND THE ENVIRONMENT: OUR EHS PROGRAM

At GE, we are committed to EHS excellence to protect people, our communities and the environment. We manage our environmental performance and compliance by holding ourselves to the same high standards globally, often in places where the expectations we set and enforce exceed local regulations.

GE's EHS program is built on a spirit of transparency, data and continuous improvement. Our EHS principles include:

- Complying with EHS laws and GE standards.
- Managing and reducing risk.
- Reducing our environmental footprint.
- Monitoring and evaluating performance.
- Driving operational accountability.

We maintain a Global EHS Policy and an EHS Enterprise Standard, which set expectations for the GE businesses with responsibility for day-to-day environmental risk mitigation, compliance assurance and EHS culture. Layered on this foundation are the Core Requirement and Technical Standard documents that cover specific safety risk areas such as work at height, confined space, electrical safety and environmental risk areas, including air emissions; spill and release management, prevention and response; and waste and water management.

Our employees complete more than one million EHS courses annually covering regulatory and non-regulatory topics and translated into appropriate languages. The courses are designed and maintained centrally by a team that ensures accuracy, accessibility, and compliance with EHS regulations and GE's standards. The assignments are done locally by EHS professionals who are able to develop targeted, roles-based training for relevant employees.

We assess the EHS impacts of our businesses globally using an enterprise-wide system of record for the majority of our EHS data, allowing for robust analysis and trending to be done in order to learn and improve. We track industry standard key performance

indicators (KPIs), such as injuries, illnesses, significant environmental events, training completion, and regulatory findings and closures. Framework 2.0, a key element of our EHS management system, measures individual operations against a series of self-assessment questions on environment, health and safety topics. In the environmental defenses element of our framework, organizations are evaluated on air emission sources, air pollution control equipment, water sources and discharges, wastewater treatment equipment and operating conditions, and hazardous and industrial waste collection, management and shipping practices.

The implementation of these expectations is carried out by a robust network of professionals supporting our sites, services and projects across the globe. Compliance is monitored by these teams of EHS professionals and through a robust reporting and metrics structure.

GE drives an open-reporting culture across compliance and controllership functions, including EHS, in order for issues to be elevated and addressed. Our EHS data is published internally at least quarterly and is available real-time through a system of dashboards maintained at the company and business levels. This proactive use of KPIs and data underscores GE's commitment to transparency and continuous improvement. EHS performance is reviewed by senior leaders across the company, by our CEO in strategy sessions and by the Board of Directors through the Governance committee. This layering of review ensures visibility and accountability, cornerstones of our EHS program. Audits are conducted at a frequency that reflects the inherent risk and performance of the operation. We also report our performance on key metrics such as spills and releases, air exceedances, and wastewater exceedances to our public stakeholders on our ESG website no less than annually. Our commitment to continuous improvement and risk reduction drives us to analyze EHS events in order to identify corrective actions and prevent recurrence.

# Environment

## Our environmental program

A Renewable Energy onshore wind field technician at work.



As with safety, our environmental compliance assurance program includes multiple levels of assessment, including self-inspections, environmental program reviews and audits, and permit reviews, which are conducted jointly by operations and EHS professionals. Operations are expected to review all environmental permits annually

and confirm compliance with all permit conditions. In addition to ongoing management of change, each operation is also expected to confirm permit coverage, applicability decisions and exemption criteria, if applicable, at least every three years. In addition to the self-assessments and inspections, governance audits are conducted at a frequency determined by the risk and performance of each operation. Environmental inspections or investigations by regulatory agencies are reported as “events” and any findings are tracked to closure. Key environmental metrics are reported and tracked at the site, business and company level for the purpose of monitoring performance and ensuring compliance.

Reporting and escalation are required in the event of exceedances of permit limits or other emission/discharge standards; failure to obtain, modify or renew existing permits; or discovery of a GE operation, process or source that should be, but is not, covered by a permit. Environmental key performance indicators (KPIs) include framework scores, regulatory finding closure rate, regulatory training completion, severe environmental events, notices of non-compliance, penalties paid, and spills and releases.

### ENVIRONMENT

	2019	2020	2021
<b>ISO 14001 sites</b>	107	97	111
<b>Global Penalties Paid (in \$ thousands)</b>	25	25	63
<b>Spills &amp; Releases (Count)<sup>7</sup></b>	31	24	27
<b>Air Exceedances (Count)</b>	1	10	1
<b>Wastewater Exceedances (Count)<sup>8</sup></b>	17	11	35

<sup>7</sup> Increase from 2020 to 2021 largely attributable to ongoing impacts of the global pandemic, and re-opening operation growth.

<sup>8</sup> Increase from 2020 to 2021 largely attributable to single physical parameter in stormwater runoff from construction project.

Due to the changing nature of GE's enterprise, figures are periodically updated to reflect changes in scope and as additional information becomes available. For instance, acquired businesses may not have aligned data for the same time periods.

# Climate change



Climate change is an urgent global priority. As a company that helps generate one-third of the world's electricity, we are committed to decarbonizing the energy sector while increasing access to more reliable, sustainable and affordable electricity, including for the 750 million people who lack access.

## GE's climate change performance

Having met our 2020 emissions reduction targets ahead of schedule, in 2019 we set a new goal to achieve carbon neutrality within our own operations (i.e., Scope 1 and 2 emissions) by 2030. To achieve this goal, our businesses are making operational investments in energy efficiency, reducing emissions from the grid through smart power sourcing and using lean practices to eliminate energy waste. See examples that follow. While we are focused on driving absolute reductions to achieve carbon neutrality, where necessary, we will balance remaining emissions with carbon offsets. GE internally tracks progress to established targets versus a 2019 baseline.

In 2021, we set an ambition to be net zero by 2050, for the Scope 3 emissions associated with the use of our sold products. We are collaborating closely with our customers, suppliers, policymakers and other companies to turn net zero engineering challenges into business opportunities. For GE Aviation, and GE Power and Renewable Energy, their efforts toward the Scope 3 ambition for their sold products are described in detail on pages 50-53 and 33-35, respectively. GE Healthcare's efforts are described on page 41.

To learn more about our Greenhouse Gas Inventory and Energy Inventory process methodology see Appendix I in [our 2021 Sustainability Report Appendices](#).

### GE'S CLIMATE CHANGE COMMITMENTS

- Carbon neutrality for Scope 1 and Scope 2 emissions by 2030
- Ambition to be a net zero company by 2050 for the Scope 3 emissions from use of sold products



In February 2022, GE was proud to join the U.S. Department of Energy (DOE) Better Climate Challenge, committing to reduce Scope 1 and Scope 2 greenhouse gas emissions by at least 50% within 10 years. As a partner in DOE's Challenge, GE is one of more than 80 organizations across the U.S. driving real-world action toward a low-carbon future. [Learn here ▶](#)

### CLIMATE CHANGE AND ENERGY<sup>9</sup>

	BASELINE	2019	2020	2021
<b>GE Operational GHG Emissions (million metric tons of CO<sub>2</sub> equivalent) (market based).<sup>10</sup></b>	2.29	2.39	1.90	1.81
<b>Scope 1 Emissions (million metric tons of CO<sub>2</sub> equivalent)</b>	1.00	0.73	0.74	
<b>Scope 2 Emissions (million metric tons of CO<sub>2</sub> equivalent) (market based)</b>	1.39	1.16	1.07	
<b>Direct SF6 Emissions (thousand metric tons CO<sub>2</sub> equivalent)</b>	164	138	131	
<b>Scope 3 net emissions from sold products (million metric tons of CO<sub>2</sub>) (net, new units, absolute)</b>				
<b>GE Aviation</b>				28
<b>GE Power</b>				477
<b>GE Operational Energy Use (million GJ)<sup>9</sup></b>	26.8	27.1	21.1	21.5
<b>Total Electricity (MWh)</b>	3,420,000	3,040,000	3,030,000	
<b>Renewable Energy Used (MWh)</b>	31,800	53,000	63,100	

<sup>9</sup> Per the WRI/WBCSD GHG Protocol. GE adjusts its 2019 base year GHG and energy data annually to reflect changes in structure or calculation methodology, improvements in accuracy of emission factors or activity data, and discovery of error. Interim years are not adjusted except upon discovery of significant error. 2020 operational GHG emissions, Scope 1 emissions, Scope 2 emissions, operational energy, and total electricity were recast to reflect corrections identified from audit.

<sup>10</sup> Scope 1 & 2 emissions may not sum to total due to rounding.

## Scope 1 and 2 efforts by business

### AVIATION

In 2021, GE Aviation continued to measure, track and progress toward decarbonizing its facilities and operations to align with the 2030 carbon neutral pledge for Scope 1 and Scope 2 emissions.

GE Aviation's long-term strategy to meet its 2030 carbon neutral commitment is focused on the following areas:

- Energy-efficient infrastructure investments and optimization.
- Facility energy contracts derived from lower carbon and renewable-sourced energy.
- Using lean practices to identify and eliminate waste.
- Exploring the use of Sustainable Aviation Fuel and other low carbon fuels at engine testing operations.

Also in 2021, GE Aviation identified short-term and long-term carbon reduction goals, created action plans, and measured and tracked monthly progress toward those goals. Through internal efforts of the global teams across the business, GE Aviation facilities and operations have reduced their Scope 1 and Scope 2 emissions by more than 20% since 2019.



GE Aviation, Wales,  
United Kingdom

### RENEWABLE ENERGY AGREEMENT FOR FACILITIES IN THE UNITED KINGDOM

In April 2021, GE Aviation obtained a new energy agreement that included the purchasing of 100% renewable energy supplied to all its facilities located in the United Kingdom. The renewable energy sources included in this contract are wind, biomass, solar power, gas converted from landfills and biodegradable materials. The successful execution of this contract in Q2 2021 avoided approximately 18,000 tons of Scope 2 CO<sub>2</sub> indirect emissions at the facilities described above when compared to 2019 levels. The program meets greenhouse gas protocol set by the World Resources Institute for measuring and managing Scope 2 emissions.



### ENERGY EFFICIENT INFRASTRUCTURE INVESTMENT IN LYNN, MASSACHUSETTS

Lynn's power plant was first built in the 1940s and has been simultaneously supplying electrical and thermal energy through a process called co-generation. The power plant's four boilers and three steam turbine generator sets were de-commissioned at the end of March 2020. A new central heating plant opened in a refurbished building with new, natural gas boilers, providing steam for heating, manufacturing processes and test operations. By right-sizing the power generation facility for current site needs, it's more efficient and uses less natural gas and electricity. Since 2020, the Lynn site has decreased its site-wide GHG emissions by 52% by not only investing in the new steam plant system, but also by installing onsite solar panel arrays and partnering with the local utility to take advantage of energy efficiency rebate projects.



A new chip compactor was installed after the lean event in Pune, India.

### USING LEAN TO REDUCE COSTS AND ENERGY

In 2021, select GE Aviation locations participated in developing Green value stream maps at their respective sites. Green value stream mapping assessments are targeted kaizen events that assess the current state of a process of operation and seeks to identify green "waste" opportunities. These opportunities are focused on energy consumption, water usage, waste generation, material waste, transportation and biodiversity. Our Pune, India, team was able to identify over 106 opportunities to reduce its environmental impact by reducing waste in their auto cleanline, Ipsen furnace and flat belt grinding operations. Since the event was held in October 2021, the site has implemented several of the opportunities identified, including optimizing the loading pattern and batch sizes in the Ipsen furnace, saving 20% energy usage on the equipment.

## HEALTHCARE

GE Healthcare has an ESG governance structure that develops and leads its business sustainability strategy. One team within that structure is a carbon working group, led by the Chief Supply Chain Officer and focused on delivering on our commitment to an absolute reduction of Scope 1 and 2 (market-based) emissions by at least 50% by 2030, versus a 2019 baseline.

Our carbon reduction strategy includes reducing greenhouse gas releases from our facilities, shifting to renewable energy sources and transitioning to an electric or hybrid fleet. As part of our drive to eliminate energy waste,



### SUPPORTING CARBON REDUCTION PROJECTS AT OUR SITES

GE Healthcare set up an internal instant-access fund to support the highest impact carbon reduction projects approved by leadership. In 2021, this mechanism financed projects that we anticipate will reduce our greenhouse gas emissions by over 11,000 metric tons, which is equivalent to charging more than 1.4 billion smartphones.<sup>10</sup> Funded projects included a chiller optimization project at our Madison, Wisconsin, site in the U.S., which resulted in a greenhouse gas reduction of 1,181 metric tons; an HVAC upgrade project in Cleveland, Ohio, which resulted in a greenhouse gas reduction of 200 metric tons; and installation of a rooftop solar (PV) unit, which resulted in a greenhouse gas reduction of 50 metric tons in Zipf, Austria. This funding process has been extended to run through 2022 and is open for everyone in the Healthcare business to apply.

we carried out eight-week energy reduction workshops for 42 of our larger sites and sites reported on their carbon reduction roadmaps as part of an annual governance review. In 2021, we also developed a roadmap to reduce emissions from our fleet of over 10,000 vehicles and started the process of transitioning vehicles in Europe to electric and hybrid options. We're also exploring mobility and other efficiency options to further reduce the environmental footprint of our fleet.

As part of our strategy to transition to renewable energy, in 2021 we transitioned several sites, including our four U.K. sites, five U.S. sites and sites in Bengaluru, India, and Zipf, Austria.



### GOING SOLAR

Staff at our site in Zipf, Austria, have been going on what they call “treasure hunts,” looking for changes they can make around the facility. The modifications started small: switching off lights when they’re not in use, using less paper, installing waterless urinals, and setting up smart meters to monitor electricity consumption. More recently, their efforts grew. The team installed a rooftop solar (PV) unit, which resulted in a greenhouse gas reduction of 50 metric tons per year. In 2022, the team installed a heat pump that would replace their gas heat with electric heat, generating it in an energy-efficient manner. The current setup has the potential to reduce greenhouse gases from the heating system by 50 percent.

[Learn more ▶](#)

<sup>10</sup> According to U.S. EPA's Greenhouse Gas Equivalencies Calculator.

## RENEWABLE ENERGY

GE's Renewable Energy businesses have levered business engagement over the past couple of years and implemented dozens of impactful emission reduction projects in pursuit of its Scope 1 and 2 emission reductions goals. Supported by a central team and with energy managers in its most energy-intensive operations, the Renewables businesses have deployed and maintained two key green lean workstreams. The first focuses on reducing emissions and optimizing energy use in its global manufacturing facilities worldwide, for example, through the installation of newer, more efficient equipment or by

*The Grid Solutions site in Paddapai, India, has worked on getting onsite solar generation for a few years, until completion in November 2021. The site now receives 25% of electricity from onsite solar photovoltaics technology.*



changing processes to emit less or require less energy overall. Very frequently, the upfront investment in these projects is paid back in less than two years. The second core workstream is the green electricity drive that paces and pushes the adoption of green tariffs, the pursuit of onsite solar opportunities, signing of Power Purchase Agreements from new renewable energy assets, and purchasing Energy Attribute Certificates where no other options are available. Local site engagement is very high, and the business benefits from valuable experience and enthusiasm for sustainability across its facilities worldwide.

*LED lights installed in our Hydro site in Taubate, Brazil.*



### RENEWABLE ELECTRICITY PURCHASE PLAYS

The continuous effort to bring onsite solar generation to as many GE sites as possible brought a new solar installation to our offices in Barcelona, Spain in 2021. Supplementing the local supply, the panels generate approximately 10% of the local energy consumption. 2021 was also the first full year of generation from the new onsite solar installations at the Grid Solutions manufacturing sites in Hosur and Pallavaram, India. The relatively small installations cover 8% and 5% of the sites' total consumption respectively. Our third Indian Grid Solutions site in Paddapai also implemented an onsite solar project that went online in November 2021, covering 25% of the plant demand with green electrons and securing significant cost savings on the local electricity bills through the associated Power Purchase Agreement. India has been one of the most successful regions for cost-effective decarbonization, and the renewable energy team continues to pursue larger scale projects in the states with significant operations.

### ENERGY EFFICIENCY AND DIRECT EMISSION REDUCTIONS

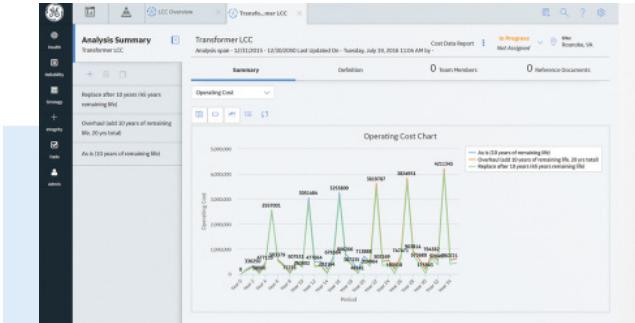
In 2021, GE's renewable energy businesses completed over 30 energy efficiency and decarbonization projects at 15 sites across three continents. One of the most impactful projects for the year was an SF<sub>6</sub> reduction effort by the Grid Solutions team in Clearwater, Florida. SF<sub>6</sub> is an extremely potent greenhouse gas according to the Kyoto protocol, with 22,800 times the comparative global warming potential of CO<sub>2</sub> and a lifetime of 3,200 years in the atmosphere. While preparing a capital-intensive upgrade of equipment onsite, the team took the opportunity to look at the handling of SF<sub>6</sub> onsite with fresh eyes and challenge themselves to redesign the process with a focus on reducing SF<sub>6</sub> use altogether. Their efforts paid off with an impressive SF<sub>6</sub> reduction equivalent to more than 10k tCO<sub>2</sub>e compared to the previous year. In another part of the business, the Hydro team in Taubate, Brazil focused on improving energy efficiency onsite with a project to install LED lighting in all buildings, putting them on track for an annual emissions reduction of approximately 251 tCO<sub>2</sub>s annually.

### SUSTAINABLE PROCUREMENT AT GE RENEWABLE ENERGY

Responding to customer and market drivers, GE's renewable energy businesses took on a new initiative to prepare for decarbonization beyond operations and engage suppliers to embed sustainability further into their core business processes. To strengthen the ability to drive sustainable progress across the value chain, the business partnered with EcoVadis, a leading global company in business sustainability ratings and performance. EcoVadis facilitates individual sustainability performance assessments of the largest suppliers, starting in the Onshore Wind business with the aim of gradually rolling out the program to the other businesses in the portfolio. Looking at the supply chain through a sustainability lens is expected to surface both challenges to address and opportunities to leverage, building resilience and supporting business development. Transparency and baselining are critical components to a robust continuous improvement program and the business sees the supply chain sustainability effort as a critical piece of the evolving supplier partnership strategy.

## POWER

In support of GE's carbon neutral commitment described on previous pages, Gas Power has set a target to reduce its operational (Scope 1 & 2) absolute carbon emissions by at least 50% by 2030, based on a 2019 baseline year. Approximately two-thirds of Gas Power's operational emissions are Scope 2, arising from purchased electricity used in manufacturing. The remaining third is mainly related to natural gas used in the testing of gas turbines, gas for heating, and liquid fuel use.



### HOW SOFTWARE IS ACCELERATING SUSTAINABILITY AT GAS POWER

As part of our efforts to eliminate energy waste and associated emissions and to streamline our environmental reporting, Gas Power is launching an automated energy management (E-meter) system at 13 of our largest sites across 10 countries. The GE-developed digital solution, "Distributed Energy Solution Platform", enables our facilities to monitor energy use and carbon emissions in real time using industrial Internet of Things (IOT) capabilities. GE engineers are planning to install data measuring points in 2022 and collect data from electricity, gas, water and industrial sensors to build up the detailed energy consumption profile. The submeters will be pushing consumption data into the cloud every minute. Thanks to the exhaustivity of the data processed by the platform, the GE team will get the immediate and accurate fleet view of the energy efficiency from, for example, the heavy machinery in main workshops, to allow quick performance comparison between similar equipment and allow immediate remediation actions. It has potential to translate into millions in savings and mega tons of GHG emissions reductions.

In 2021 our focus has been on reducing our overall energy demand. Energy champions at 13 of our largest sites completed an intensive series of training and treasure hunt workshops, resulting in the identification of over 40 energy reduction projects that could reduce our total operational emissions. More than half of these projects are under implementation, including investment in our E-Meter system that will enable sites to track and manage their energy and carbon performance in real time. The workshop series has been further extended in 2022 through our Carbon and Energy Savings Kaizen Week, which involved 21 site-specific energy assessments.



Mike Benson and Nick Willard participated in Kaizen Week at GE Gas Power's manufacturing facility in Schenectady, NY, USA.

### ELIMINATING WASTE: ENERGY AND CARBON KAIZEN

Our Carbon and Energy Savings Kaizen Week was carried out early 2022 with some impressive results. By taking a lean approach to cutting energy consumption, more than 50 teams across 21 sites focused on energy outputs from lighting, HVAC, compressed air, welding, large equipment, transport and recycling, as well as the culture of energy savings. At the end of the Kaizen Week, we achieved an average saving of 7% energy usage per site, with combined savings of 35 million KWH of energy, which equals \$3 million in energy costs saved per year. To put it in perspective, over the course of a week, our teams found energy savings equivalent to 25,000 metric tons of CO<sub>2</sub>, which can power nearly 3,000 U.S. homes and charge more than 3 billion smartphones.\*

\* According to the U.S. Environmental Protection Agency

## SCOPE 3 AMBITIONS

- GE Aviation's actions toward its 2050 Scope 3 net zero ambition, see pages 33-35
- GE Power & Renewable Energy's actions toward its 2050 Scope 3 net zero ambition, see pages 50-53
- GE Healthcare's approach to Scope 3 greenhouse gas emissions, see page 41

# Policy engagement and thought leadership on climate action

As described in this report, GE's focus on sustainability is to innovate technology to lift up the quality of life for people everywhere. While our focus is on technology and innovation, we know that strong policy, engagement and partnership are critical to success of these shared goals.

## CLIMATE POLICY ENGAGEMENT

GE's efforts on climate change and the energy transition start with GE's strong support for the Paris Climate Agreement commitments and other ambitious targets to reduce greenhouse gas emissions (GE's climate change goals). Below we describe GE's direct and indirect policy engagement and lobbying on climate change, which we believe are in alignment with the Paris Climate Agreement goals. We have been proud to play a visible role in advancing policy and action for climate change, energy transition and sustainability solutions. 2021 was a landmark year for climate change commitments and we see 2022 as a critical year for stronger emphasis on action and partnership.

To this end, we know that it will take much more than any one company, government or entity to succeed with these climate goals. We are working with peers from a variety of sectors including sustainable finance to implement a 2022 roadmap to translate global commitments into action.

Throughout 2021, we engaged in the public domain to advance thought leadership on how to achieve climate goals for the energy sector through strong policy, technology and investments. For example, GE

*"I think there's a bipartisan consensus... that we need to do something not only with respect to wind and the production tax credit, but frankly a range of other incentives, including 45Q... We just need to have that policy certainty."*

CNBC's Power Lunch, May 2022

[Watch here ▶](#)



sponsored a series of events with **Axios** and **Washington Post Live** focused on collaboration between the private and public sectors to succeed in the energy transition and decarbonization efforts. These events featured speakers from businesses, government and NGOs to highlight how collaboration is required to address climate change and reduce carbon emissions globally. [Learn more ▶](#)

Our heightened engagement has continued throughout 2022 to help formulate and support policies that advance a just transition and sustainability goals globally. We will continue to offer constructive input to the leaders charged with translating ambitious climate targets into laws, regulations and policies. We know details matter at this stage and we will bring our deep technical experience to educate and join governments and others in the pathways to these climate goals.



## INVESTING IN AMERICAN ENERGY

GE supports clean energy tax credits to ensure success in decarbonization efforts and continued U.S. leadership in energy manufacturing and jobs—both today and in the future. In addition to the wind production tax credit (PTC) and 45Q tax credit for carbon sequestration, a comprehensive package of clean energy tax credits would support diverse generation sources, such as wind, solar and nuclear, while creating new incentives for storage (including pumped hydro storage), hydrogen, transmission, as well as manufacturing credits. GE launched a public advocacy campaign to urge Congress and the Biden Administration to enact these policies as soon as possible to provide the U.S. energy industry with certainty and support. [Learn more ▶](#)



## BUILD BACK BETTER CLIMATE PROVISIONS

In February 2022, we joined 26 other companies, in a letter calling on the U.S. Congress to refocus on **Build Back Better** climate provisions to help grow renewable energy, a strong U.S. supply chain and breakthrough technologies including carbon capture and hydrogen. [Read more ▶](#)



## CONNECTING CLIMATE ENTREPRENEURS

GE is proud to support the U.S. State Department, along with Salesforce and LinkedIn, to launch the Connecting Climate Entrepreneurs (CCE) program and help address climate change challenges on local and global scales. GE is leveraging networks and expertise from GE Research across energy, health and flight to support CCE programming. [Read more ▶](#)



## BREAKTHROUGH TECHNOLOGIES REDEFINING OUR ENERGY FUTURE

Larry Culp, Chairman and CEO, GE, and CEO, GE Aviation, discussed how GE's breakthrough technologies are redefining the future of energy with CNBC's Brian Sullivan as part of **The Milken Institute's Global Conference**. Larry also joined a panel discussion with experts in energy production, investment, research and public policy. [Watch here ▶](#)



## ATLANTIC COUNCIL GLOBAL ENERGY FORUM

GE leaders joined this premier international gathering of government, industry and thought leaders to set the energy agenda for the year. This year's forum was focused on pathways to net zero. **Roger Martella**, GE's Chief Sustainability Officer, spoke on a panel focused on the global challenge of meeting the hydrogen supply chain. Dr. Abdurrahman Khalidi, Chief Technology Officer for GE Gas Power, Europe, Middle East and Africa, spoke on a panel dedicated to discussing the resilience and reliability needed to secure the energy transition. [Watch here ▶](#)

## COP26

At the 26th Conference of the Parties meeting in November 2021 (COP26), global leaders in government, non-profits and industry gathered in Glasgow, Scotland, to commit to increasing climate action. GE leaders were honored to be invited to join discussions at events organized by the U.S. State Department, the U.S. Congress, the European Union and a variety of non-governmental organizations to discuss the crucial role companies, especially GE, play in promoting sustainability, accelerating decarbonization, driving economic growth and achieving positive climate outcomes.

### ROLE OF COMPANIES IN DECARBONIZATION AND INCREASING RESILIENCE AND AFFORDABILITY

Roger Martella, GE's Chief Sustainability Officer, joined a co-sponsored event with the Center for Climate Change and Energy Solutions (C2ES) and Edison International to discuss how to balance resilience and affordability with the global push for decarbonization.

[Watch here ▶](#)

### ENERGY PATHWAYS: TOWARDS A LOW CARBON FUTURE IN THE GULF COOPERATION COUNCIL

Alongside COP26, **HRH Prince Abdulaziz bin Salman Al-Saud**, Minister of Energy, Kingdom of Saudi Arabia; **Scott Strazik**, CEO, GE's Global Energy Business Portfolio; and other industry leaders joined **The Economist** for a discussion on the real opportunities for meaningful climate action within the region. [Watch here ▶](#)

### ADDRESSING CLIMATE CHANGE

**John Slattery**, Executive Vice President and Chief Commercial Officer, GE Aviation, joined an event to share how breakthrough engine technologies, enabling faster adoption of Sustainable Aviation Fuels, and digital tools help airlines maximize efficiency.

### NUCLEAR FOR A NET ZERO CENTURY: OPPORTUNITIES FOR DEEP DECARBONISATION

**Lisa McBride**, Country Leader, Small Modular Reactors, GE Hitachi Nuclear Energy, joined leaders from Canada, the U.K., and the U.S. to discuss the role of nuclear power in the energy mix.

[Watch here ▶](#)

### TIME FOR NET ZERO, ARE YOU IN?

**Jérôme Pécresse**, CEO, GE Renewable Energy, joined the Global Wind Energy Council for an event titled to share our efforts to innovate technology to succeed in the energy transition with renewable energy, gas, and a modernized grid, as well as our future-forward innovations like sustainable aviation, advanced nuclear technology and hydrogen. [Watch here ▶](#)

### FROM PLEDGES TO PROGRESS: DECARBONIZING TODAY TO MEET TOMORROW'S AMBITION

**Sheri Hickok**, CEO, Onshore Wind International, GE Renewable Energy, joined an event with C2ES and Edison International to discuss renewable energy's role in the energy transition.

### MANAGING MANUFACTURING CHALLENGES IN PURSUIT OF CLIMATE ACTION

**Lene Mi Ran Kristiansen**, Sustainability Leader for GE Renewable Energy, joined CSOs and sustainability executives during a panel discussion to share actions they are taking to address emissions across complex supply chains. [Watch here ▶](#)

## COP27

COP27 presents an unprecedented opportunity for the world to work towards achieving two important goals simultaneously—decarbonizing the energy sector while at the same time growing energy resiliency to ensure everyone has access to reliable, affordable and sustainable energy. GE continues to work closely with government, international organizations, NGOs, and industry in the lead up to COP27 to highlight the importance of these goals.

### BUILDING MOMENTUM TO UN COP27

GE's Chief Sustainability Officer, Roger Martella joined Egypt's Minister of Electricity and Renewable Energy Dr. Mohamed Shaker El-Markabi, Ambassador Stuart Jones and Khaled Hashem to discuss how to support Egypt's success at doing both simultaneously at a joint event with the U.S. Chamber of Commerce and AmCham Egypt. [Watch here ▶](#)

### SUPPORTING EGYPT'S CLIMATE CHANGE AGENDA

GE Digital joined a coalition of energy transition leaders—Baker Hughes, Bechtel, Enppi, HSBC, the National Bank of Egypt, and Petrojet—under the auspices of Tarek El Molla, Egyptian Minister of Petroleum and Mineral Resources—to support decarbonization of select downstream facilities in Egypt, aligning plans with the country's leadership of the COP27, UN Climate Change Conference 2022. [Learn more ▶](#)

### PARIS-ALIGNED LOBBYING REPORT

Consistent with the policy advocacy previously discussed, GE focuses its climate lobbying efforts on being a constructive voice in advancing policies that further a successful energy transition—the decarbonization of energy while growing access to reliable, sustainable and affordable energy. Our lobbying activities are in furtherance of GE's climate change goals, including the science and goals expressed in the Paris Agreement and the United Nations Framework Convention on Climate Change, and we support policies that reduce greenhouse gas emissions and promote sustainable development. For example, GE has worked closely with the International Civil Aviation Organization (ICAO) to establish the first-ever CO<sub>2</sub> emissions standards for aircraft. GE has been on the record in support of both President Biden's infrastructure initiative and clean energy tax credits, including launching a public advocacy campaign on the latter.

GE engages in public policy discussions that impact our company, our workers and our communities in areas such as aviation, energy, healthcare, international trade and investment, tax, data governance, rule of law and government procurement. These areas overlap with climate goals and we seek to inform discussions by promoting thoughtful civil discourse grounded in strong, fact-based and reasoned analysis. We work in partnership with governments because we know that tackling the world's biggest challenges is only possible if governments and industry work together as partners.

GE employees engage with public officials at all levels of government in the United States and in some countries outside of the United States. GE conducts lobbying activities in compliance with applicable laws governing such activities and files appropriate reports. For example, in 2021, we engaged with the Biden administration and members of Congress in more than 120 meetings where we discussed various aspects of the energy transition. Of these, we had more than 20 meetings with staff of the U.S. Congress that included the full scope of GE's businesses, presenting a "One GE" position on the importance of reducing carbon emissions while promoting sustainable development.

### OVERSIGHT OF PUBLIC POLICY AND LOBBYING

The Governance Committee, composed solely of independent directors, oversees the Company's public policy and government relations activities, including policies and guidelines regarding political contributions and lobbying activities, and external reporting on such activities. This includes political and campaign contributions as well as any contributions to trade associations and other tax-exempt and similar organizations that may engage in political activity, including climate-related public policy. For more information on Board oversight of public policy, see page 57.

In addition to robust board oversight, GE has significant management-level oversight over environmental and political activities. Our climate change and energy transition programs and policies are overseen by GE's Chief Sustainability Officer (CSO). The CSO has day-to-day responsibility for climate change and sustainability matters and works closely with the Head of Government Affairs and Policy, GE's International Market team, and representatives in relevant businesses—allowing for even greater synergies and alignment of our lobbying activities with our climate strategy. As described elsewhere, the CSO also works closely with environmental NGOs, think tanks, industry coalitions, trade associations and other stakeholder to advance these policies.

*Solving the world's greatest challenge with the industry's leading portfolio of technologies.*  
Photo Credit: Rich Crowder



GE's Chief Sustainability Officer and GE's Head of Government Affairs and Policy are regularly briefed on and help develop our policy priorities and activities; and our Governance Committee also receives formal reports on our political activities. To proactively develop and advance climate change policy positions and related strategy consistent with GE's climate change goals, we leverage the experience of a broad cross-functional team, inclusive of representatives from our Sustainability, Legal, Government Affairs, Risk, Financial and Investor Relations groups as well as advice received in consultation with outside specialists. We leveraged this cross-functional team in the preparation of this report on Paris-aligned lobbying, which was supervised by our Chief Sustainability Officer and Head of Government Affairs and Policy, and reviewed by the Governance Committee.

## ADVOCACY THROUGH ORGANIZATIONS AND ASSOCIATIONS

We support associations that are leading on climate change solutions, policies and technologies, including nonprofit organizations and trade associations. We partner formally and informally with numerous associations and NGOs around the world that share the mission of addressing climate change, decarbonizing industrial sectors and promoting sustainable development. For example:

- GE is one of the founding strategic partners of the non-profit Center for Climate and Energy Solutions (C2ES), an original member of its Business Environmental Leadership Council, and a member of its Board of Directors. GE participates in C2ES research and supports C2ES' mission to "advance strong policy and action to reduce GHGs, promote clean energy and strengthen resilience to climate impacts."
- GE is an active member of the American Clean Power Association (ACP) and sits on its Board of Directors. ACP is the leading federation of renewable energy companies expediting the advancement of clean energy in the United States.
- GE is a member of the Carbon Capture Coalition, a nonpartisan collaboration of more than 80 businesses and organizations building federal policy support to enable economywide, commercial-scale deployment of carbon capture technologies.

Examples of collaboration with diverse public and private stakeholders in 2021 and 2022 are summarized on pages 31, 40 and 49.

## TRADE ASSOCIATIONS

As one of the largest and most diverse companies in the world, GE belongs to many associations in which we work with our industry partners. These associations engage in advocacy at the state and federal levels in key jurisdictions around the world on a range of policy topics including energy and climate. Consistent with our direct lobbying, we believe our work with trade associations is in furtherance of, and consistent with, GE's climate change goals, including the goals of the Paris Climate Agreement.

As a general proposition, we are seeing our trade associations increasingly move in constructive directions toward rallying their members toward climate change and energy transition solutions. For example, we are pleased that, to the best of our knowledge, none of our trade associations with key roles on climate (as discussed below) argued against EPA's regulatory authority to address climate change before the Supreme Court in *West Virginia v. EPA*, and that certain GE associations filed briefs in support of EPA.

GE's policy team works with our trade associations on a regular basis to influence constructive action toward these goals. Annually, we meet with our major U.S. trade associations to review our policy priorities, including stressing the importance of each to align with the Paris Climate Agreement goals and be a force for positive action toward decarbonization and sustainable development goals.

This is not to say that all trade associations are moving at the same pace, that we expect them to necessarily agree on all policy positions set forth, or that GE agrees fully on all views and positions. There is room for a reasonable divergence of views on various policies

and approaches while still constructively advancing efforts toward decarbonization. GE's role in these circumstances is to be a force of positive direction and to express the views of a multinational industrial company in promoting constructive engagement by the trade associations on these issues. To be clear, GE does not and will not use trade associations as a cloak for climate change policies inconsistent with our own positions detailed above.

Where we see trade associations potentially advocate for a position different than ours with regard to climate policy, including if a position were misaligned with the goals of the Paris Climate Agreement, in the first instance we reach out to the trade association to assert influence toward alignment. Our goal is to communicate in real time and express our positions toward positive change. On these occasions, we have typically found fair reception of our input by the relevant trade associations. We believe this is the better approach to withdrawing membership when disagreements arise as our continued membership in the trade association usually positions us to influence the trade association's policy positions in ways that better align with our objectives, or because we believe that our continued work with the trade association will help advance other important policy objectives aligned with our interests. At the same time, we would reserve the option of terminating our membership and/or withdrawing financial support if the misalignment with a particular position the trade association supports outweighs the overall benefits to GE of being a member.

## GE'S POSITION ON CLIMATE DISCLOSURE REGULATIONS

GE is monitoring emerging climate and ESG disclosure regulations in the United States, the European Union, and other jurisdictions. GE supports efforts to improve disclosure in these areas that focus on material information, help align existing reporting frameworks, and recognize the evolving maturity of this type of information and reporting across companies broadly. GE aspires to be a constructive and positive voice toward disclosure that is effective and meaningful for our stakeholders while promoting consistency in various regimes to reduce confusion and undue burdens. GE has also expressed these views to several of our trade associations engaged in these rules.

## POSITIONS OF GE TRADE ASSOCIATIONS WITH KEY ROLES ON CLIMATE

As part of this ongoing engagement, GE during the past year undertook an effort to centrally compile a global inventory of trade associations and other relevant organizations that GE was a member of in 2021 and that engaged in policy advocacy related to climate change. For each of those, we conducted analysis of how much work GE does with the organization and the organization's level of policy engagement in this space.

From this broader list, we identified several trade associations with key roles on climate where we conducted a deeper analysis of each trade association's specific positions on climate change, and how well those positions aligned with GE's own policy positions and with the goals of the Paris Climate Agreement. We chose these trade associations, listed below, as the most relevant to consider for a more detailed climate position analysis based on factors such as the association's level of activity or influence on climate-related topics, the relevance of the association's work to particular GE businesses or markets, and our judgment about the association that would be of greatest interest to stakeholders regarding potential Paris Climate agreement alignment or misalignment. The table below provides a summary of the alignment analysis, based on reviews of available policies and positions published by the trade associations.

	CLIMATE CHANGE POSITION	ALIGNMENT TO THE PARIS CLIMATE AGREEMENT AND GE'S CLIMATE POSITIONS
<b>THE AEROSPACE INDUSTRIES ASSOCIATION (AIA)</b> is a leading voice in the aircraft, space and defense industries. The organization advocates for effective federal investments; accelerated deployment of innovative technologies; policies that enhance the aviation industries global competitiveness; and recruitment and retention efforts that support a capable and diverse 21st century workforce.	<p>AIA is committed to playing its part in reducing the climate, noise and air quality impacts of the aviation industry. Last year, AIA announced a net zero-by-2050 target for the U.S. aviation sector's carbon emissions.</p> <p>Additionally, AIA aims to play a role in decarbonizing aviation by:</p> <ol style="list-style-type: none"><li>1. Expanding investments in leading-edge technology like advanced and zero-emission propulsion</li><li>2. Advocating for policies that facilitate the increased use of sustainable aviation fuels across the globe</li><li>3. Partnering with the government to enable and accelerate advancements in technology</li><li>4. Collaborating with the government to develop the proper regulatory framework to enable commercialization of new technologies</li><li>5. Partnering with other stakeholders to realize efficiency improvements through the modernization of our airspace</li><li>6. Advancing climate action under the ICAO, which relies on a global approach to address aircraft emissions</li><li>7. Working with international partners toward our common goal by sharing information and resources and coordinating with governments around the world</li></ol>	<p>AIA has set a target to be net zero by 2050 and has committed to decarbonize through investing in technology, advocating for SAF, promoting global standards and international agreements on aviation emissions. We believe these commitments are consistent with the goals of the Paris Climate Agreement.</p> <p>AIA is also aligned with GE, as GE continues to develop technologies to reduce CO<sub>2</sub> emissions for the future of flight through current advancements in engine architecture, aerodynamics and materials, along with the next suite of engine technologies—including open fan architectures, hybrid-electric and electric propulsion concepts, and advanced thermal management concepts. GE Aviation is also supporting industry initiatives to approve and adopt 100% Sustainable Aviation Fuel (SAF) and investigating hydrogen as the zero-carbon fuel of the future. GE's efforts to innovate toward a net zero 2050 ambition for aviation are further described on page 50.</p>
<b>BUSINESS ROUNDTABLE (BRT)</b> is an association of chief executive officers of America's leading companies working to promote a thriving U.S. economy and expanded opportunity for all Americans through sound policy.	<p>BRT believes addressing climate change and its impacts demands a robust, coordinated effort with a sound policy portfolio.</p> <p>BRT believes, to avoid the worst impacts of climate change, the world must work together to limit global temperature rise this century to well below 2 degrees Celsius above preindustrial levels, consistent with the Paris Climate Agreement, and that the U.S. and the international community must aggressively reduce GHG emissions and create incentives for developing new technologies to achieve this goal.</p> <p>BRT notes that in 2018 the IPCC reported that limiting warming to no more than 1.5 degrees Celsius compared to preindustrial levels will be necessary to avoid some of the most severe risks associated with climate change.</p> <p>BRT supports a goal of reducing net U.S. greenhouse gas emissions by at least 80 percent from 2005 levels by 2050.</p>	<p>We played an active role with BRT at the working group level to update its climate position in 2020, which brought it more closely aligned to GE's climate policy position and the Paris Climate Agreement.</p> <p>BRT has set a goal of reducing net U.S. GHG emissions by at least 80% from 2005 levels by 2050. The Paris Climate Agreement includes a similar goal.</p> <p>GE continues to work with BRT to ensure that U.S. business leaders advocate for ambitious policies in line with the U.S. commitment to the Paris Climate Agreement, including how clean energy tax incentives will help keep the U.S. a leader in clean energy technology.</p>

## ALIGNMENT TO THE PARIS CLIMATE AGREEMENT AND GE'S CLIMATE POSITIONS

CLIMATE CHANGE POSITION		ALIGNMENT TO THE PARIS CLIMATE AGREEMENT AND GE'S CLIMATE POSITIONS
<p><b>THE CANADIAN CHAMBER OF COMMERCE</b> represents over 200,000 businesses with a mission to drive change, partner broadly, and be the undisputed champion and catalyst for the future of business success in Canada.</p>	<p>The Canadian Chamber of Commerce supports the need for Canada to adopt an efficient and cost-effective approach to climate change. The organization has stated the 2050 net zero target is a necessity.</p>	<p>In August 2021, the Canadian Chamber of Commerce created the Net Zero Council (NZC). GE Canada President and CEO, Heather Chalmers, is co-chair of the NZC. The NZC meets monthly to support research and advocacy to shape Canada's pathway to net zero. Membership on the Council is for businesses, like GE, that have made public declarations to achieve net zero in their operations by 2050 or sooner.</p> <p>The NZC is dedicated to advancing business leadership on climate change and intends to release a report on effective cross-sectoral pathways to net zero in 2022.</p>
<p><b>EUTURBINES</b> is a gas and steam turbine industry association aimed at integrating all European manufacturers of the sector, covering all relevant applications. The organization promotes the role of turbine-based power generation in a sustainable, decarbonized European and global energy mix.</p>	<p>EUTurbines supports a sustainable transition of the energy system aiming at decarbonizing the energy sector and has expressed its support of the European Green Deal. EUTurbines advocates for solutions such as renewable-based turbines to help achieve a well-functioning energy system in a future climate-neutral economy, and believes that all economics sectors need to swiftly adapt and drastically reduce their greenhouse gas emissions, starting the energy sector.</p>	<p>EUTurbines supports dramatically reducing greenhouse gas emissions and swiftly transitioning to sustainable energy. We believe these commitments are consistent with the goals of the Paris Climate Agreement.</p> <p>EUTurbines is aligned with GE policy, as GE agrees that the world must act quickly to decarbonize every aspect of modern life and that lower-carbon solutions, such as switching gas turbines from natural gas to hydrogen can lead to low or near zero carbon emissions. GE offers the industry's most experienced gas turbine fleet in hydrogen and similar low-BTU fuel operations and continues to invest in research and development into hydrogen pathways towards zero-CO<sub>2</sub> emissions. GE was involved in the development of EUTurbine's H2-readiness definition, which provides a common understanding of hydrogen readiness for new gas power plants.</p> <p>GE's efforts to innovate toward a net zero 2050 ambition for aviation are further described on page 50.</p>
<p><b>THE GAS TURBINE ASSOCIATION (GTA)</b> is an association comprised of large and small gas turbine manufacturers, associated equipment manufacturers, and leading research universities. GTA's primary focus has been on technology programs designed to increase turbine efficiency. GTA advocates for public policies and regulations that support and promote the expanded use of gas turbine technology in all relevant sectors of the economy.</p>	<p>GTA supports developing and implementing a strategy for ensuring reasonable and responsible environmental practices for gas turbines, as well as environmental policy recommendations for communication to regulators and legislators. GTA conducts dialogue regarding the development of a regulatory climate that encourages the use of clean efficient gas turbine applications in new and retrofit installations.</p> <p>GTA's advocacy focus is on federal research and development funding to drive carbon emissions out of gas turbines. GTA is currently taking a broader look at hydrogen and carbon capture funding opportunities that allow further decarbonization of gas turbine technology.</p>	<p>GE believes when it comes to gas power, coal-to-gas switching can represent a fast and effective approach for emissions reduction in many regions around the world. In addition, switching turbines from natural gas to hydrogen, and introducing carbon capture solutions, can lead to low or near zero carbon emissions. GE Gas Power is currently the Committee Chair of GTA's Environmental Affairs Committee, a position we use to encourage GTA to advocate for policies that make continued progress on carbon capture and hydrogen, which will decarbonize gas turbines in the future.</p> <p>GE's efforts to innovate toward a net zero 2050 ambition for power are further described on page 33.</p>

**ALIGNMENT TO THE PARIS CLIMATE AGREEMENT AND GE'S CLIMATE POSITIONS**

CLIMATE CHANGE POSITION	ALIGNMENT TO THE PARIS CLIMATE AGREEMENT AND GE'S CLIMATE POSITIONS	
<p><b>THE NATIONAL ASSOCIATION OF MANUFACTURERS (NAM)</b> represents 14,000 member companies, both large and small, across industry sectors to advocate around the four values of free enterprise, competitiveness, individual liberty, and equal opportunity.</p>	<p>The NAM believes an environment and climate change agenda for the future must recognize manufacturers as the solution to emerging environmental challenges and build on the strong steps manufacturers have already taken to become more sustainable and tackle climate change; apply sound science and evidence-based approaches in new proposals; and appropriately balance the United States' economic and environmental interests so that achieving one goal does not mean ignoring the other.</p> <p>The NAM recommends commencing negotiations to improve on the Paris Climate Agreement and achieve a binding global climate treaty that keeps post-industrial warming of the planet to "well below 2 degrees, and approaching 1.5 degrees."</p>	<p>The NAM supports a binding climate treaty to keep post-industrial warming of the planet to well below 2 degrees, and approaching 1.5 degrees. We believe these ambitions are consistent with the goals of the Paris Climate Agreement.</p> <p>GE plays an active role on NAM's environment committee and worked to update the NAM's policy on climate in 2020, which brought it more closely aligned to GE's climate policy position and the Paris Climate Agreement. Roger Martella, GE's Chief Sustainability Officer, is the NAM's Sustainability &amp; Environmental Quality Committee Chair and Pat Byrne, CEO of GE Renewable Energy Onshore Wind, serves on the NAM's Board of Directors. We continue to engage with the NAM on our key energy transition priorities, including onshore wind production tax credits, 45Q enhancements, and supporting production incentives for sustainable aviation fuel. For example, GE supported the clean energy tax incentives being discussed in Congress and we believe it is important for the NAM to recognize these provisions support manufacturers of clean energy power generation equipment.</p>
<p><b>THE U.S. CHAMBER OF COMMERCE</b> is the world's largest business organization representing all sizes of businesses to advocate, partner, and network on a range of topics. The U.S. Chamber advocates for policies that help businesses create jobs and grow the United States economy.</p>	<p>The U.S. Chamber engages on climate change policy approaches that acknowledge the cost of inaction and the competitiveness of the U.S. economy and advocates for durable solutions that leverage innovation. The U.S. Chamber has stated it supports the Biden Administration's decision to rejoin the Paris Climate Agreement.</p> <p>The U.S. Chamber's climate policy principles are:</p> <ul style="list-style-type: none"> <li>• Support a market-based approach to accelerate greenhouse gas emissions reductions across the U.S. economy</li> <li>• Leverage the power of business</li> <li>• Maintain U.S. leadership in climate science</li> <li>• Embrace technology and innovation</li> <li>• Aggressively pursue greater energy efficiency</li> <li>• Promote climate resilient infrastructure</li> <li>• Support trade in U.S. technologies and products</li> <li>• Encourage international cooperation</li> <li>• Inaction is not an action</li> </ul>	<p>We believe the U.S. Chamber has progressed on its climate change position. This includes putting forth a comprehensive climate position that includes supporting U.S. participation in the Paris Climate Agreement as well as calling on policymakers to act on climate. Additionally, the Chamber has launched a Task Force open to its membership to inform the organization's climate policy.</p> <p>In 2019, GE joined the U.S. Chamber's Task Force on Climate Action. This group was focused on helping the U.S. Chamber understand the impact of existing and future policies on businesses and how to proactively address climate change.</p> <p>The U.S. Chamber has made progress in recognizing the Paris Climate Agreement and being a convenor of companies and governments in pursuit of solutions to climate change at global venues such as COP27, where the Chamber is facilitating engagement between American companies and the Egyptian government. GE routinely engages with the U.S. Chamber policy experts to underscore the importance of supporting the transition to renewable energy, the need for policy support for decarbonizing gas power generation and aviation through carbon capture and alternative fuels, and how clean energy tax incentives will help build a stronger U.S. supply chain.</p>

In addition to the trade associations discussed above, the following trade associations and other relevant organizations were considered as part of our global inventory of groups engaged in policy advocacy related to climate change. As noted above, we conducted analysis for each of these organizations related to their climate positions and GE's level of engagement with them.

## ORGANIZATION

Airlines for Europe (A4E)	CNI (National Industry Confederation) - Brazil	Gridwise Alliance
Associação Brasileira da Infraestrutura e Indústrias de Base (ABDIB)	Comex - Peru	Hydrogen Europe
Aerospace Environmental Group (IAEG)	Comité de prospective de la CRE (Prospective Committee of the Energy Regulation Commission) - France	Institute for Business Development of Argentina (IDEA)
Aerospace Industries Association (AIA)	Confederation of Indian Industry (CII)	Keidanren (Japan Business Federation)
American Clean Power	Consumer Energy Alliance	National Association of Manufacturers (NAM)
Associated Chambers of Commerce and Industry of India (ASSOCHAM)	Council of American Enterprises (CEA) - Colombia	National Foreign Trade Council
Australian Energy Council	Energy Solutions	Nuclear Energy Institute
Australian Industry Group	Energy Storage Association	Ohio Business Roundtable
Business Council of Canada	ETN (European Turbine Association)	Overseas Investors Chamber of Commerce and Industry (OICCI) - Pakistan
Business Europe	EurElectric	Roundtable for Europe's Energy Future
Business Roundtable	European Association for Storage of Energy (EASE)	Russian Union of Industries and Entrepreneurs
Business Unity South Africa (BUSA)	European Suppliers of Waste to Energy Technology (ESWET)	SER (Syndicate for Renewable Energies)
California Energy Storage Alliance	EUTurbines	Singapore Business Federation
Canadian Chamber of Commerce	Federation of Indian Chambers of Commerce & Industry (FICCI)	T&D Europe
Canadian Council for Sustainable Aviation Fuel	The Federation of Industries of the State of São Paulo (FIESP)	Thai Wind Energy Association
Canadian Manufacturers & Exporters	Gas Turbine Association	The National Hydropower Association
Canadian Nuclear Association (CAN)	General Aviation Manufacturers Association (GAMA)	Turkish Wind Energy Association
Carbon Capture Coalition	Global Wind Energy Council (GWEC)	U.S. Global Leadership Campaign
Carbon Utilization Research Council	Greater New Orleans, Inc	United States Council for International Business
Consejo Coordinador Empresarial (CCE) - Mexico		U.S. Chamber of Commerce
Consejo Ejecutivo de Empresas Globales (CEEG) - Mexico		WaterPower Canada
Clean Energy Council - Australia		WindEurope
Clean Hydrogen Future Coalition		

## Product stewardship

In response to increasing scarcity of resources and the expectations from customers, investors and regulators for producers to take heightened responsibility for the impacts of products across their full lifecycle, we have developed product stewardship and circularity goals to strengthen our efforts going forward.

Product stewardship is already a central part of GE's strategy and culture and ingrained across safety and quality processes, policies and initiatives globally. Our strategy includes continuous improvement via lean principles, which are key to identifying and eliminating waste (see pages 64-65) and employing a sharp focus on product safety (see pages 66-70) across our sites. This includes consistently reviewing and strengthening our policies and practices to improve

performance and reduce product-related risks across environment and safety. As today's technologies evolve, GE is rethinking its approach to product stewardship and embracing the circular economy, for both our own operations and our products. By building on existing circularity programs and product stewardship ambitions to deliver sustainable and responsible products, we continue to rise to the challenge of building a world that works.

### GE'S PRODUCT STEWARDSHIP STRATEGY

Going forward, GE's businesses will pursue the safety, environment, and external engagement goals identified on these pages in furtherance of a holistic product stewardship strategy.

#### SAFETY

**Goal:** Build on our existing safety culture to manage and mitigate product safety risks, meet or exceed compliance and contribute to evolving more ambitious industry standards.

We consistently aim to raise the standards and performance across our businesses and in the industries in which we operate. Our commitment to safety at all levels, including the safety of our products, will continue to be a top priority at GE. Product safety is a core pillar of product stewardship, from production through use and eventual disposal, reclamation or decommissioning at end of life. It is our ambition to extend current initiatives in how we approach and set product safety standards throughout the life cycle of our products.

[READ MORE ▶](#)

#### CIRCULAR ECONOMY

**Goal:** Increase the circularity of our products through reclamation, refurbishment and recycling initiatives, and evaluate the design of our products to incorporate circular thinking.

We think about product stewardship and circularity standards with a holistic end-to-end view of products, considering their full life cycle and the implications of the deployed energy, materials and water on the environment and product safety. We will align these standards with our decarbonization goals. Product design will play a pivotal role in supporting the transition away from our traditional linear models. Our ambition is to increasingly design our products based on the circularity principles of reducing material, enabling reuse and securing recyclability at end of life.



## WHAT DO PRODUCT STEWARDSHIP AND CIRCULAR ECONOMY ENTAIL FOR GE?

Product stewardship represents the responsibility borne by GE for the environmental and safety impacts of our products across their lifecycle. Product stewardship focuses on managing the energy, water and materials that are deployed in the production, use and disposal of a product, along with managing product safety, at all stages of the product life cycle.

In relation to product stewardship, circular economy is the enabling methodology to manage resources efficiently in a regenerative and restorative way across the product life cycle by viewing waste streams as inputs, reducing dependency on virgin materials by recapturing lost materials and resources, and redirecting them back into the economy.



### PARTNERSHIPS

**Goals:** Leverage our market position to build partnerships within and across industries to deliver innovative solutions.

Over the many years since our inception, we have become well accustomed to playing a critical role in collaborating and convening strategic partnerships to solve some of the systemic and most pressing challenges facing our industries. We intend to pilot circularity initiatives with our customers and partners to test what is feasible.

### COMMUNICATION

**Goals:** Continue to strengthen our communication and demonstrate clear progress towards meeting our goals.

By sharing our improvements and learnings in product stewardship and circular economy, we aim to activate conversations and contribute to industry-wide progress towards the United Nations Sustainable Development Goals (SDGs), particularly with regards to SDG12 for responsible consumption and production.

### WATER

**Goal:** Establish a defined strategy to minimize the water footprint of our products and build on our approach towards water conservation throughout our operations.

Water is a critical resource in the production of our products. We strive to reduce water usage across our direct operations to protect the world's water reserve. In 2020, we met our goal of reducing water use by 20% compared to our 2011 level, and we know we can do more. As we strengthen our current efforts, we will seek to evaluate direct water consumption to identify opportunities to implement circular principles that minimize the water footprint of our products and report against progress. [Read more ▶](#)

### MATERIALS

**Goal:** Develop a deeper understanding of the environmental impacts of our products through mapping material flows, volumes and composition to inform strategy and actions.

We intend to minimize the environmental footprint of our products, whether it is through redirecting waste materials and packaging destined for landfill or increasing control of hazardous or harmful substances to eliminate adverse environmental impacts.

## EXAMPLES OF PRODUCT STEWARDSHIP AT GE

The following are some examples of how we incorporate product stewardship and circularity into our products and those of our customers.



### PARTNERING TO DESIGN RECYCLABLE BLADES

Within GE Renewables, LM Wind Power is part of the ZEBRA consortium, which aims to develop a 100% recyclable turbine blade. As of March 2022, GE announced a major step in the industry's transition to a circular economy, with the first prototype of the wind turbine blade being produced. Within the project, LM Wind Power has designed and built the world's largest thermoplastic blade at its production plant in Ponferrada, Spain. The components of the blade, as well as waste created in the production, can be recycled by a process of compounding or chemical recycling. After shredding, the material can be compounded to make pellets. The pellets can be used to produce calibrated 3D filament for FDM printer or can directly be used on a robotic arm with a mini extruder. Another option is chemical recycling, which enables the resin to depolymerize, whereby the monomers are separated from the fibres and used to make recycled resin again. From this breakthrough in recycling technology, the materials from the blades can be reused in new blades, therefore 'closing the loop' and bringing circular solutions to the industry (photo credit: Veolia).



### GE HEALTHCARE'S GOLDSEAL PROGRAM

The global refurbished medical equipment market plays a critical role in helping improve access to affordable quality healthcare. High-quality refurbished medical equipment is a viable diagnostic imaging option for hospitals seeking to stretch their budgets to purchase still exceptionally good equipment. There are environmental benefits of refurbishing medical imaging equipment as well. By extending the useful life of medical imaging equipment, refurbishment is a form of reuse and waste prevention, contributing to a circular economy. Refurbishment also saves the energy and the materials required to produce new equipment. For more than 20 years, GE Healthcare's GoldSeal program has played a vital role in reducing medical imaging equipment waste by promoting and enabling the reuse of equipment and parts from de-installed imaging systems. After undergoing an extensive inspection and testing process, GoldSeal equipment is refurbished to meet the original system specifications. Buyers of GoldSeal MRI, CT, or PET/CT products can save on acquisition costs associated with buying new equipment. Machines deemed not suitable for GoldSeal refurbishment are dismantled at end of life, and after successfully passing acceptance testing criteria, specific parts are harvested for reuse. After desirable components are harvested, as much of the residual material as possible is recycled. Depending on the system, anywhere from 82 to 100% of a system may be recyclable.

[Learn more ▶](#)

### SKJERN PAPER USES AI TO IMPROVE PRODUCT QUALITY AND REDUCE WASTE

The only paper mill in Denmark, Skjern Paper started production in 1967 with the idea of manufacturing paper exclusively from old newspaper, becoming an innovative leader in sustainability. Today, Skjern Paper is owned by Buur Invest A/S and manufactures 75,000 tons of paper and board products each year from 100% recycled fiber. Through the implementation of GE Digital's Proficy CSense software solution, the team has been able to decrease scrap and chemical usage while increasing production capability. In addition to the environmental benefits, Skjern has been able to lower costs as well. Skjern's environmental and societal commitments extend to the circular economy and membership in the UN Global Compact and its Nordic network. [Learn more ▶](#)

### GE AVIATION PARTS RECLAMATION

Toward a more circular economy, we consider the lifecycle of our engines. Currently, there are more than 21,000 total repairs in our catalogs to restore worn GE and CFM engine parts to serviceable conditions. Additionally, GE and CFM industrialized more than 1,500 repairs in 2021, increasing repair capability. As a result, GE maintenance, repair and overhaul facilities globally repaired approximately 2.5 million engine components in 2021 using these industrialized processes. Additionally, our used serviceable materials business purchases used engines and parts, performs necessary inspections and repairs, and facilitates return of serviceable parts into the aviation industry. When metal parts are no longer repairable, they are recycled when possible.

### RECLAIMING WASTE AND SCRAP MATERIALS TO IMPROVE END OF LIFE SOLUTIONS

GE Power works with ELG Utica and its main investment casting supplier to reuse scrap parts with high-temperature alloys. The scrap generated in the manufacturing shops, repair shops, external machining suppliers' shop and customers sites for end of life engine parts are collected and segregated. The materials are then cleaned and processed for reuse. The circular recycling solution allows GE Power to reduce the portion of virgin materials it uses by capturing value from the manufacturing reverts. In 2021, over 700,000 pounds of were collected for reuse.

### RECYCLING IODINE – KEEPING CONTRAST MEDIA IN THE CIRCULAR ECONOMY

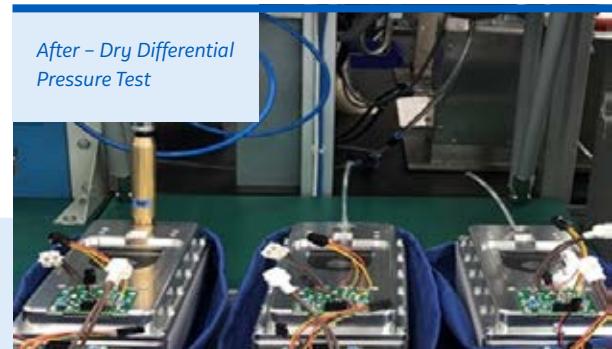
Contrast media is a substance injected into the body to enhance medical imaging. Iodine is commonly used in contrast media for both CT and X-ray imaging. GE Healthcare has been recycling iodine-based contrast media for European healthcare facilities since 2006, but it's begun to expand its geographic reach and now offers this recycling program in 11 European countries, and last year expanded it into Canada and the United States. In the U.S., over 40% of computed tomography (CT) procedures utilize contrast media.

## Water

In 2020 GE met its goals to reduce freshwater use by 20% compared to 2011. GE has continued this trend in 2021. Water usage captured includes potable, process and sanitary water, as well as once-through cooling water from freshwater sources.

To track GE's water usage, GE facilities use a robust, global database to manage our reporting, including quantities of water withdrawn from each of the following source categories:

- Public/commercial
- Fresh surface water
- Rainwater
- Brackish surface water or seawater
- On-site groundwater well



Beijing has been subject to water scarcity in recent decades.<sup>11</sup> At present, 73% of municipal water in Beijing comes from the South-to-North Water Diversion Project, which involves drawing water from southern rivers and supplying it to the dry north. The cost of municipal water in Beijing is also higher than many other cities.<sup>12</sup> In 2021, GE Healthcare's manufacturing site in Beijing investigated water reduction opportunities in its production process. One of the production steps when manufacturing surgery tubes is to verify the air tightness by a leakage test. This involves submerging the surgery tube in a water tank. After several attempts, the team successfully replaced the previous leakage test with a dry differential pressure test, reducing fresh water usage by about 21.7 tons per year. This project also helped reduce noise in the factory and improve production efficiency.

### WATER

	2019	2020	2021
<b>Total Freshwater Use (billions of gallons)</b>	4.93	5.12	4.93
<b>Once-Through Cooling Water (billions of gallons)</b>	1.64	1.85	1.69

To learn more about our Water Inventory methodology please see Appendix III in our 2021 Sustainability Report Appendices.

<sup>11</sup> <https://iopscience.iop.org/article/10.1088/1755-1315/94/1/012132>

<sup>12</sup> China's South-to-North Water Diversion Project: An ecological masterpiece | china.org.cn.

## Environmental justice

GE implements its commitment to environmental justice in several ways.

First, we are committed to ensuring all communities where we operate realize the strongest environmental protection from our activities. Thus, we work to achieve environmental protection standards for all communities to the same extent regardless of the scope of applicable local regulations, if any.

Second, we strongly believe access to affordable, reliable and sustainable electricity is critical to reducing poverty and hunger and promoting access to education and healthcare for all people. As described on page 22, we are passionate about succeeding in the energy transition in a way that brings reliable electricity to everyone in a sustainable way. Our technology plays a key role in helping governments reach their Paris Agreement goals, while also promoting the UN SDGs, which we believe are the blueprint to achieving a better and more sustainable future for all. (See pages 7-10).

Third, we support policies to clean up and redevelop idle contaminated properties into new hubs of economic growth and job creation. As described below, we are implementing an initiative to invest in remediating brownfields—contaminated vacant properties that could serve better purposes once cleaned up—particularly for public benefit in impacted and underserved communities.

## Brownfields

As with any long-standing industrial company, GE owns many former manufacturing properties that are no longer core GE assets. These properties can be found anywhere from thriving manufacturing hubs to small towns and rural areas. GE has committed to stewarding these unused properties responsibly back to productive reuse in a way that stimulates economic growth and community development, avoids blight and redirects GE's financial assets back to GE's operations. For certain parcels with lengthy operating histories, this commitment can prove costly and time-consuming due to obsolete infrastructure and environmental impacts.

Beginning in 2012, GE founded its Brownfields Program to focus on repurposing the company's former industrial assets. The team categorizes its sites for action into two groups—those properties with minimal impact that can be repurposed quickly, and those properties requiring demolition, remediation, regulatory engagement or other substantial work to promote meaningful reuse. Using these categories, the team takes strategic action and makes investments following a Brownfields pipeline to ensure that all sites move successfully through the process.

GE's Brownfields Program has advanced GE's property stewardship while bringing value to GE and local communities. Since 2012, GE has sold more than 350 properly prepared industrial sites, double GE's pace before the program. Almost 70% of these sites required substantial work to allow appropriate reuse, compared to 52% pre-program. By coupling a data-driven approach to site preparation with an increased sales rate, GE Brownfields has repurposed 1.9 times more challenging sites than GE's previous approach. Simultaneously, the team has

increased average property sales values by 18%, allowing the team to recoup \$1.4 billion in sales proceeds. This is more than 2.5 times the sales value received over a comparable prior timeframe. Moreover, by repurposing these idle assets, GE has shifted approximately \$40 million that would have been paid annually to maintain these vacant properties back into core business operations, freeing up \$235 million over the life of the program.

## GE'S ENVIRONMENTAL JUSTICE INITIATIVE AND FOCUS ON BROWNFIELDS

Beginning in 2019, GE enhanced its Brownfields Program to prioritize cleanup and redevelopment of idle contaminated properties in environmental justice (EJ) communities. The White House and the U.S. Environmental Protection Agency (EPA) have defined EJ neighborhoods as those with disadvantaged populations that are most heavily impacted by historic industrial activity and least able to bear this burden. In many EJ communities, financial investment falters and commercial opportunities lag despite property cleanup. This leaves neighborhoods with vacant buildings or empty parcels that create blight and reduce further investment.

GE is committed to remediating and repurposing its contaminated vacant properties in EJ communities to help establish new hubs of economic growth that create jobs and to assist EJ communities to remove barriers that hamper realization of community benefits. Using EJSCREEN (developed by the U.S. EPA) and the Climate and Economic Justice Screening Tool (released by the Council on Environmental Quality), GE reviewed its full inventory of more than 100 owned, underused properties in the U.S. to identify the 53 parcels that are located in EJ communities. Focusing on these parcels, we have worked to define those barriers that discourage reinvestment and meaningful reuse, seeking community partners to help define local needs.

Local EJ community leaders have shared one of their most pressing needs is financial investment to remove obsolete buildings and infrastructure. In response, GE has committed more than \$40 million to demolish its obsolete structures in EJ neighborhoods. Demolition is complete in Goldsboro, Kansas City, and St. Louis, Missouri, and is underway in Memphis, Tennessee. Remaining projects will continue through 2023.

EJ community leaders also identified site remediation and real estate repurposing as primary community needs. GE has undertaken environmental investigation and cleanup at more than 45 of its highest priority EJ properties. GE will work hand-in-hand with local governments, private groups, property experts and technical resources to define reuse plans that buttress community goals and catalyze sustainable economic development. Strategies under consideration include improved neighborhood drainage and flood relief; green energy/electric car infrastructure; industrial repurposing; and community solar installations.

Outside the U.S., GE is also screening its underutilized properties to target cleanup and redevelopment investments in disadvantaged communities. Several potential properties were identified for action in 2021. We are now identifying community collaborators to work with GE to target cleanup and infrastructure investments that will help achieve local goals.

*Clean interior in North Bergen, New Jersey.*



*Mercury line removal and restoration in Lexington, Kentucky.*



#### **NORTH BERGEN, NEW JERSEY** **Disadvantaged community** **(EJScreen)**

GE acquired the 7-acre GE NY Service Center in 1956 to operate as the consolidated regional electrical equipment support facility for GE and its customers. Through 2010, this location serviced electric motors, steam and gas turbine components, railroad components, switch gear and motor generators. Operations resulted in the unintended release of polychlorinated biphenyls and solvents, both inside and outside the building. Beginning in 2018, with the approval of federal and state regulators, GE cleaned and refurbished the building and remediated soil to prepare the site for future commercial or industrial reuse. GE sold the property in 2021 to a local company that distributed industrial cleaning and disinfection supplies regionally to support COVID-19 workplace safety.



#### **ALBUQUERQUE, NEW MEXICO** **Disadvantaged community** **(EJScreen)**

For more than 40 years, beginning in 1967, GE Aviation fabricated military and commercial aircraft engine components at Former Air Force Plant 83, a 34-acre parcel in Albuquerque, New Mexico. After local officials detected solvent contamination in a city drinking water well, Plant 83 and another industrial facility were identified as potential sources. In 1983, USEPA added the site to Superfund's National Priorities List (NPL) as the South Valley Superfund Site. In cooperation with regulators, GE demolished buildings, treated site soils and remediated groundwater impacts. In September 2019, the U.S. EPA determined that "all appropriate response actions...have been completed," and delisted Plant 83 from the NPL. GE sold the North Plant area in 2021 to a local construction firm to manage building materials and is planning to sell the South Plant area in 2022.



#### **LEXINGTON, KENTUCKY**

Beginning in 1946, GE constructed and operated the 200,000 square-foot Lexington Lamp Plant on 17 acres in Lexington, Kentucky. The plant manufactured sealed beam automotive and specialty headlamps along with incandescent bulbs. After the plant ceased operating in August 2017, GE decommissioned equipment, thoroughly cleaned the building and voluntarily investigated site soil and groundwater conditions. GE identified elemental mercury within vacuum lines, industrial sewers and cooling water return lines as a significant concern for building reuse. From November 2018 through March 2019, GE removed overhead process lines and below-ground industrial sewer and cooling water lines. Soils surrounding lines were also removed if mercury was detected. These extensive cleaning efforts allowed GE to restore the building for appropriate reuse. In 2021, GE sold the facility to a regional business to expand its growing commercial property management operations.

## Cleaning up legacy sites

We are committed to managing sites that are, or may be, impacted with legacy contamination arising from current or former manufacturing operations with the utmost care, ensuring the health and safety of our workers, the communities in which these sites are located and the environment. Further, we manage our remedial actions at these sites in compliance with applicable environmental laws and regulations, as well as applicable federal financial reporting and reserve requirements. In most cases, we work in collaboration with the appropriate federal, state or global environmental regulatory authorities charged with management of these sites, and also work with other key stakeholders (e.g., local municipalities, the public, etc.) to encourage dialogue and communications that can be factored into our remedial decision making.

We employ a matrixed resource approach to remedial site management, utilizing a wing-to-wing team of in-house and external environmental professionals and other subject matter experts (i.e., technical, legal, finance and communications personnel) to manage the full life cycle of a remedial project, from investigation to remedy implementation, to potential maintenance and monitoring obligations. We draw upon the experience and expertise of this team of experts to develop strategies

that utilize state-of-the-art technologies and best management practices necessary to remediate and, in some cases, redevelop these sites and return them back to the local communities for productive reuse. From a program management perspective, we utilize lean principles to drive long-term solutions for the environment and company, in addition to helping identify process and programmatic issues requiring improvement, and helping to drive more accountability across the team.

GE recognizes contaminated sites can be concerning and controversial issues for surrounding communities. GE works to develop solutions in consensus with key regulators and the public to the fullest extent possible. For a certain subset of GE-owned legacy contaminated sites (i.e., Brownfields), GE is also focused on cleaning up those sites to facilitate redevelopment and repurposing in the communities where those sites are located. Once a remedy is decided, GE aims to exceed expectations on timing of implementation and efficacy of the outcome. Some of our most significant projects that were designed and implemented in close collaboration with government agencies and other stakeholders are reflected below.

### HOUSATONIC RIVER: REMEDY DESIGN UNDERWAY

Twenty years ago, GE committed to work with the U.S. EPA, Massachusetts and Connecticut, and local communities to clean the first 2 miles of the Housatonic River, as well as to develop a process that would govern remedy selection for the Rest of River. In 2020, we reached an agreement with the EPA and local communities that makes good on our longstanding commitment to a comprehensive cleanup of the Housatonic River that protects the environment.

In addition to the more than \$500 million of environmental projects that we've completed in the Pittsfield area over the years, GE has recently pivoted towards the next phase of river cleanup following the 2020 agreement. GE is currently working to design the "Rest of River" remedy by submitting various site-wide work plans as well as reach-specific sediment, riverbank, and floodplain soils sampling plans.

In 2022, EPA's administrative court, the Environmental Appeals Board, upheld the 2020 agreement and the final permit became effective in March 2022. GE is committed to moving forward with the work required to address the environmental condition of the river and the surrounding areas. [Learn more ▶](#)



*"It's a settlement that supports health and restoration and sustainability... (and) ensures the Housatonic River is enjoyed by future generations, not just through the history books."*

— SEN. EDWARD MARKEY,  
D-MASSACHUSETTS

## HUDSON RIVER

Environmental conditions in the Upper Hudson River in New York State continue to improve since GE's completion of a historic dredging project in 2016. PCB levels in water have dropped at every monitoring station. PCB levels in sediment have dropped as much as 96% and in samples representing all fish species by as much as 59%. The U.S. Environmental Protection Agency has said it expects these improvements will continue. In 2021, GE removed the former manufacturing buildings at its Fort Edward, N.Y., property, as it did previously at its nearby Hudson Falls, N.Y., property, and is working with New York State on additional remediation there. GE and EPA are also assessing Upper Hudson shorelines to determine whether, where and what form of remediation may be appropriate.

[Learn more ▶](#)

*"The Hudson River PCB Superfund dredging project has been a success... This project is the most extensive dredging project undertaken in the nation and its success is a historic achievement for the recovery of the Hudson River."*

— U. S. ENVIRONMENTAL PROTECTION AGENCY



## Our global impact



### MAKATI, PHILIPPINES

GE is remediating its former incandescent and fluorescent lighting products manufacturing site in Makati, Philippines. Following remediation, the site, which began operating in 1947, will allow beneficial redevelopment. Early facility operations generated a waste stream composed of broken glass and lighting components, some containing mercury, which was placed in selected areas of the site to fill low spots. A comprehensive environmental investigation confirmed widespread shallow soil contamination consistent with the historic production of lighting products on the property.

Following approval of the Remedial Action Plan by the Department of Environment and Natural Resources (EMB), National Capital Region, the demolition of all structures and the removal of contaminated materials at the Site began. Non-contaminated demolition debris is crushed for reuse on site, which reduces



off-site transport and minimizes the effect of the remediation on traffic in this densely populated area as much as possible. Wherever possible, metal building materials were segregated for recycling. Materials containing mercury and other contaminants were excavated and bagged under controlled conditions (dust and vapor suppression). Prior to disposal, contaminated material had been treated at a licensed waste management facility to immobilize contaminants. Excavation of contaminated materials began in February 2021 and is anticipated to be completed in July 2022.

# Human rights

People are at the heart of GE's operations and strategy. We released our [GE Human Rights Report in 2022](#) to provide greater transparency into how we run our human rights program, from our suite of governance documents to our due diligence program. This report details our program with respect to our own workers, those of our suppliers and the communities affected by GE operations and business relationships. Read our GE Human Rights Report [here](#).

In 2006, GE was among the first American companies to issue a [Human Rights Statement of Principles reflecting our commitment, among other things, to respect fundamental labor rights including the prohibition of forced and child labor in GE operations and those of our suppliers](#). It is the cornerstone of our global program, grounding our commitment to human rights in the United Nations Guiding Principles on Business and Human Rights, the OECD Guidelines for Multinational Enterprises and the Ten Principles of the United Nations Global Compact. Driven by those standards, we strive to respect the fundamental dignity of everyone we might affect directly through our operations, products and services, and indirectly through our business relationships across the globe. Our ideals flow from the International Bill of Human Rights, the International Labor Organization Declaration on Fundamental Principles and Rights at Work and the UN Sustainable Development Goals. We seek to treat everyone affected by our business and value chain—including employees (see [Respectful Workplace](#)), workers, customers and communities—with fairness and dignity.



*"At GE, we're also focused on improving our impact on our people, communities and planet. Respecting human rights around the world has long been a part of our culture of unyielding integrity and is embedded in our environmental, social, and governance priorities."*

## LARRY CULP

Chairman and CEO, GE  
CEO, GE Aviation

*"A strong sustainability and human rights program is critical to our mission. It is also professionally and personally important to our employees, communities, customers, investors, and business partners. We strive for transparency with our stakeholders to hold ourselves accountable and to drive continuous improvement."*

## TRAN CHE

Global Human Rights Counsel, GE

## GE JOINS FRIENDS OF THE GLOBAL FIGHT

In 2022, GE joined the Friends of the Global Fight, an organization dedicated to ending the epidemics of AIDS, tuberculosis (TB) and malaria. Friends of the Global Fight works in partnership with the Global Fund, a public-private partnership, advocating for U.S. investment and programming to eradicate AIDS, TB and malaria. Recently, the Global Fund expanded its scope to include U.S. and other donor support for the fight against COVID-19 by providing critical medical equipment and supplies such as diagnostic tests, personal protective equipment and medical oxygen. GE is proud to support Friends of the Global Fight in its mission.

## GE HUMAN RIGHTS ENTERPRISE POLICIES AND STANDARDS

For our employees, directors and officers, GE's *The Spirit & The Letter* (S&L) details our human rights expectations within the GE Human Rights Policy along with other related policies and procedures such as our Environment, Health and Safety Policy and Respectful Workplace Policy. These policies are embedded throughout GE's business operations through enterprise standards and policy documents and implementation.

GE has implemented operational requirements for businesses known as the Human Rights Enterprise Standard, which helps businesses identify and understand the salient human rights risks across the company and how they are expected to respond to those risks. The Enterprise Standard sets out minimum requirements that businesses must adhere to regarding risk assessment and identification, due diligence of third parties and escalation and remediation of any concerns related to human rights. It provides practical guidance and best practices for business implementation to mitigate human rights risk within our operations.

The Human Rights Working Group, led by our Global Human Rights Counsel, meets regularly to discuss the implementation of the standard and the evolving landscape of human rights issues and risks in the communities we serve. To read more about our governance process, please see our [GE Human Rights Report](#).

### SALIENT RISKS

A recent company-wide global human rights assessment conducted by a leading human rights advisory firm identified four priority issue areas for salience and impact: **climate and energy; product stewardship; worker welfare; and community welfare.**

Both worker welfare and community welfare capture the rights of stakeholders upstream and downstream throughout the value chain; they each also capture the potential to shape the world for good through the lens of the UN SDGs.

The analysis of worker and community welfare across our value chain resulted in seven salient rights:

1. Modern Slavery
2. Child Labor
3. Freedom of Association
4. Just Working Conditions
5. Right to Health: Environment
6. Right to Security of the Person
7. Indigenous Rights

We detail our salient risks in our [GE Human Rights Report](#).



Tian Zongjie,  
Healthcare,  
Beijing, China

### STAKEHOLDER ENGAGEMENTS

GE engages with external stakeholders to identify human rights risks throughout our value chain and collaborates with peers, experts and civil society groups to seek practical solutions. As a founding member of the Global Business Initiative on Human Rights, GE works with multinational corporations through a cross-industry peer learning platform to embed respect for human rights into business operations, drive improvements with peer learning, bring focus to emerging challenges and identify solutions.

Based on our engagement with the Leadership Group for Responsible Recruitment (LGRR), GE adopted and implemented the Employer Pays Principle with respect to any recruitment fees and prohibits the types of actions associated with the most common forms of modern slavery, including the withholding of immigration documents and misleading recruitment tactics. As one of its initiatives, LGRR works with GE and member companies to create demand for responsible recruitment by raising awareness about the benefits of ethical practices and developing tools to help companies implement the Employer Pays Principle.

Since 2008, GE has been an active participant in the United Nations Global Compact aligning with the Ten Principles of the UNGC around human rights, labor, environment and anti-corruption. Over the years, GE partnered with the UNGC on initiatives such as the Human Rights Dilemmas for Multinational Corporations in Emerging Markets and most recently participated in its Young Sustainable Development Goals Innovators Program.

Our human rights program depends on the practical understanding of our people and business partners. Taking a multi-faceted approach helps to address the human rights challenges GE faces in the various markets we serve and operate in. We provide employees with learning modules on human rights and forced labor; company-wide policies and programs; the causes and global footprint of forced labor; and, most importantly, how they can serve a role in identifying and reporting possible signs of human rights issues when they are at GE operations, supplier facilities or customer sites. GE strives to continuously improve our procedures to identify, prevent, mitigate and remedy our salient human rights impacts. To learn more about our program, see our [GE Human Rights Report](#).

## Ethical supply chain and responsible mineral sourcing

GE is committed to unyielding integrity and high standards of business conduct in our dealings with suppliers. Since 2002, GE has implemented an extensive supplier responsibility governance (SRG) program to build and strengthen an ethical, sustainable and transparent global supply chain and establish clear social and environmental responsibility requirements for suppliers.

All suppliers must contractually commit to the [GE Integrity Guide for Suppliers, Contractors and Consultants](#), which requires suppliers to strictly comply with laws, provide a safe and healthy work environment and meet GE's standards of ethical conduct relating to human rights, the fair treatment of workers, environmental protection and resource conservation. GE explicitly prohibits suppliers from using child, prison, forced or indentured labor and subjecting workers to any form of compulsion, coercion or human trafficking. We further require that our first-tier suppliers cascade the requirements of the GE Integrity Guide to their sub-tier suppliers. Under this multi-faceted ethical supply chain program, suppliers are prioritized for detailed pre-engagement and periodic follow-up, onsite assessments based on country risks (including human trafficking risk), supplier past performance and other factors, such as media reports or supplier employee complaints.

The SRG program uses a systematic approach for assessing risks in our supply chain, monitoring and improving supplier performance.

Our approach includes:

- A country risk assessment, updated every two years, incorporating manufacturing risk along with human rights risk assessments lifted from third-party data and risk indices.
- Clear risk assessment criteria to prioritize suppliers for audits depending upon factors such as their location, if they are producing parts that will be incorporated into GE products and/or if they use labor brokers to recruit migrant workers.
- A rigorous auditing program using trained and certified SRG auditors, to assess conformance with our requirements prior to onboarding.
- Monitoring the continued compliance and improvement of existing suppliers using thorough on-site audits at a typical frequency of one to five years based upon the supplier's risk profile.
- Recorded, tracked and monitored, all SRG audit findings must be in our proprietary reporting tool. The supplier must rectify issues in a timely manner. We track all issues to closure, with verification of the elimination or appropriate mitigation of such risks. GE will suspend all purchase orders under the contract, should the supplier not mitigate or eliminate issues as required by the corrective action plan.
- Continual evaluation of new methods to assess and manage risk in our supply chain and effectively address the evolving challenges and risks. For example, following the pandemic restrictions in 2020 and

2021, GE allowed the option of desktop remote audits for suppliers so our auditing program could continue. Applying the same scope and questionnaire used in the on-site audits, our remote audits relied on digital tools to allow suppliers to provide supporting documentation and to verify the closure of audit findings. GE continues exploring options to improve our virtual auditing capabilities performed internally and externally.

## AUDITING GE'S GLOBAL SUPPLY CHAIN

Our goal is to work with suppliers to bring them into compliance and drive sustainable improvements in their operations and practices. However, in the event of a serious violation of law, human rights or GE's code of conduct, GE will act to immediately cease the business relationship.

The SRG program drives GE's ability to continuously assess, monitor and drive improvement in its supply chain. More importantly, through our regular communication and engagement with our suppliers, we can build their capability to improve their compliance, environment, health and safety practices and respectful workplace practices and reduce human rights and modern slavery risks.

## RESPONSIBLE MINERAL SOURCING

Aligned with GE's SRG program, GE strives to assure our supply chains are ethical and sustainable when obtaining products containing tin, tantalum, tungsten, gold (known collectively as "3TG"), cobalt and mica, which are common constituents of many of our products from aircraft engines to wind turbines. GE is committed to working to eliminate from our products all "conflict minerals" that potentially finance armed groups in the Democratic Republic of Congo (DRC), its adjoining countries or other conflict-affected and high-risk areas (CAHRAs). [GE's Responsible Mineral Sourcing Principles](#) outline GE's commitment to respecting human rights through responsible sourcing practices when it comes to sourcing products containing these minerals.

GE prohibits use of forced or child labor in its operations and supply chain and proactively addresses these concerns through its [Ethical Supply Chain Program](#). We recognize conflict is just one of the risks related to mineral sourcing where critical issues such as poverty, environmental degradation, child labor and general inequality must be addressed as well.

Each year, we undertake reasonable due diligence to determine if any of our products containing 3TG originated in the DRC or other CAHRAs. We then file a report with the U.S. Securities and Exchange Commission on the use of 3TG in our products and the outcome of our 3TG sourcing due diligence. For additional information, see our most recent Conflict Minerals Report [here](#).

## AUDITING GE'S GLOBAL SUPPLY CHAIN



[Learn more ▶](#)

	2020 <sup>13</sup>	2021
<b>Total Global Audits</b>	1,286 <sup>14</sup>	1,115 <sup>15</sup>
<b>Total Suppliers Approved (new, existing, and from acquisition)</b>	1,039 <sup>16</sup>	966
<b>Total Suppliers Rejected (new, existing, and from acquisition)</b>	71 <sup>16</sup>	26
<b>Total Findings</b>	7,348	6,031

<sup>13</sup> Beginning with the 2020 metric year, our supply chain metrics reflect changes and improvements in GE's Supplier Responsibility Governance (SRG) program.

<sup>14</sup> The number of Total Global Audits is greater than total suppliers reviewed as some suppliers were audited twice (i.e., desktop audit due to COVID-19 restrictions followed by on-site visits) or there were return visits to confirm corrective actions were completed.

<sup>15</sup> The number of Total Global Audits decreased from 2020 to 2021 largely due to Covid restrictions on travel, closure of facilities during lockdowns, and GE's divestiture of Baker Hughes.

<sup>16</sup> New metric reported in 2020 from SRG program and audits.

# Freedom of association

GE Renewable Energy, hydro facility in Grenoble, France.



*Respect for freedom of association is one of GE's core commitments to all employees.*

In the U.S., GE has 21 collective bargaining agreements throughout its businesses that represent over 5,700 employees. GE has a long history of industrial peace and comity with its unions, in part because freedom of association is a core value. Consequently, GE has enjoyed respectful and successful negotiations with its labor unions for many years. Here are some of the labor unions representing U.S. employees: the International Union of Electronic, Electrical, Salaried, Machine and Furniture Workers—Communications Workers of America; the International Association of Machinists and Aerospace Workers; the United Auto Workers; the International Brotherhood of Electrical Workers; the International Federation of Professional and Technical Engineers; and the United Association of Journeymen and Apprentices of the Plumbing, Pipefitting and Sprinkler Fitting Industry of the United States and Canada.

GE's relationship with employee-representative organizations outside the U.S. takes many forms, especially in the EU. We estimate our employees are represented by approximately 200 representative bodies throughout the EU. Social dialogue is a key component of doing business in Europe and a driver of sustainable business growth for GE in the region. GE values a positive and constructive relationship with its social partners. Information exchange and consultation occur through works councils, trade unions and employee-representative bodies at various levels of the business organizations in accordance with national laws.

For transnational matters, in 2018 we put in place a new GE European Works Council (EWC) structure; it comprises a Central Committee focused primarily on enterprise-wide issues, together with four business-specific committees in respect of our GE Renewable Energy, Power, Healthcare, and Aviation divisions. Those committees enable the exchange of information and inputs between senior leaders of the company and European employees' representatives. Together, GE EWC now covers approximately 99% of our European workforce, providing a voice to more than 53,000 employees.

In China, 21 of our 43 GE legal entities have unions representing nearly 13,000 employees, all affiliated with the All-China Federation of Trade Unions, including our China headquarters in Shanghai. In Latin America, nearly 12,000 of our employees are represented by unions.

# The GE Foundation

## Next Engineers: Increasing the diversity of young people in engineering

*"As I see engineers who look like me, I know I do belong. I want to be that inspiration for others."*

These encouraging words are from Kyla W., a high school student in Greenville, South Carolina, and a member of the GE's Next Engineers Engineering Academy, a three-year transformative learning experience to help students learn to think and act like engineers.

At GE, we're tackling some of the world's biggest challenges. I have a front-row seat to watching GE engineers wrap their minds and hands around what it means to create towering offshore wind turbines, ultrasounds that fit in the palm of your hand and jet engines that are more fuel-efficient. Engineers are critical to building a world that works and to do it, we'll need a diversity of voices and perspectives.

That's why the GE Foundation was excited to launch Next Engineers a global college- and career-readiness program in four cities where GE employees live and work: Cincinnati, Ohio, and Greenville, South Carolina, in the U.S., along with Johannesburg, South Africa and Stafford, U.K. Next Engineers is committed to increasing the number of diverse innovators and leaders who will make what's next for the world even better.

In the first six months alone, we've made quick progress. We've held 34 Engineering Discovery events, engaging more than 2,800 students to build awareness about what engineers do. These sessions are led by GE employees to inspire young people and expand their understanding of what engineering is all about. We launched the Engineering Academy with up to 50 students in each city to equip them with the skills they need to build an engineering identity and career. We are thrilled that nearly 60 percent of applications came from students from diverse backgrounds. And we're gearing up to host our first Engineering Camps to help immerse students in the engineering process through a week-long experience.

Next Engineers is showing students in these four communities that there's an engineer in everyone and I can't wait to meet the builders, dreamers and innovators who will join us along the way.

From our hometown of Boston to cities around the globe, the GE Foundation is achieving its mission of transforming our communities and shaping the diverse workforce of tomorrow. I am grateful to our partners and our employees for making lasting changes in locations worldwide.



**LINDA BOFF**

President, The GE Foundation and  
Vice President, GE



Engineering Discovery in  
Cincinnati, Ohio.



Engineering Discovery in  
Johannesburg, South Africa.



Engineering Academy in  
Staffordshire, United Kingdom.



Engineering Academy  
in Greenville, South Carolina.

## DEVELOPING ENGINEERING AND OTHER TECHNICAL SKILLS



*Next Engineers provides hands-on activities in the classroom to expand understanding of what engineering is all about.*

### NEXT ENGINEERS

Next Engineers is a global college- and career-readiness program to increase the diversity of young people in engineering. The program provides students ages 13 to 18 with first-hand experiences in engineering concepts and careers, and ultimately awards partial scholarships to pursue higher education in engineering. In 2021, the GE Foundation launched Next Engineers in four cities: Cincinnati, Ohio, and Greenville, South Carolina, in the U.S., along with Johannesburg, South Africa and Stafford, U.K.

Next Engineers offers three inspiring programs to engage students on their paths to engineering studies:

- **Engineering Discovery** for students ages 13 to 14 and their guardians with the goal of increasing awareness through multiple one-hour exploratory experiences and hand-on activities connecting students to real engineers. Sessions are delivered by volunteers in the classroom or in the community to inspire youth early and highlight the broad array of engineering careers.
- **Engineering Camp** for students ages 14 to 15 with the goal of developing engineering identities through a week-long immersive camp experience over school break where students interact with experienced engineering faculty and staff, complete design challenges solving real-world problems, and interact directly with professional engineers and business leaders.
- **Engineering Academy** for students ages 15 to 18 with the goal of guiding and encouraging students to pursue engineering degrees. Engineering Academy is a three-year college readiness program for upper secondary students that helps them learn to think and act like engineers and prepare them to select and succeed at an engineering major at the university level. Students accepted to higher education engineering programs will also receive a scholarship from the GE Foundation.

Given GE's plan to form three industry-leading, global public companies in the next few years, the GE Foundation will only deploy Next Engineers in these four communities. We are proud of the impact the program is having and remain committed to inspiring the next generation of engineers and innovators, wherever their careers

take them. We look forward to seeing the strategic direction each of the three companies will develop and launch, including their own philanthropic and community engagement program. [Learn more ▶](#)



*Engineering Academy in Johannesburg, South Africa.*

### OPPORTUNITIES TO EXPLORE AND DISCOVER

Engineering Discovery builds awareness about what engineers do through a variety of short, exploratory sessions led by GE engineers. Meet some of our Next Engineers volunteers.

[Learn more ▶](#)

### NOW I KNOW I BELONG

Kyla W., a member of the Greenville Engineering Academy's first cohort, is passionate about diversity in science, technology, engineering and math (STEM). "Diversity matters. Representation matters," she said. [Learn more ▶](#)

### REPRESENTATION MATTERS

Mya L., a student from outside Cincinnati, Ohio, says representation is about making people feel comfortable in different spaces. She is one of about 200 high school students around the world taking part in the Engineering Academy.

[Learn more ▶](#)

### PROGRAM HIGHLIGHTS

2,800+

students engaged in  
Engineering Discovery events

198

Engineering Academy students in year one

60%

Engineering Academy applications from  
diverse backgrounds

## STEM EDUCATION IN BOSTON

Through a \$25 million commitment, the GE Foundation is investing in STEM education in Boston Public Schools through a series of in-school initiatives to help today's students explore career opportunities and prepare for the jobs of the future. From mobile STEM labs to coding bootcamps and STEM Internships and scholarships, GE Foundation connected more than 6,100 Boston Public School students to STEM career paths for a technology-driven workforce. Programs continuing in 2021 and beyond include:

- **Science Education:** Funding was aligned to support high-quality science education by expanding access to standards-aligned curricula across the district and building educator capacity by deploying a coaching model dedicated to science instruction. In 2021, the program provided access to digital learning platforms for 54,000 students. More than 250 educators were trained on expanding science curricula in 15 elementary schools serving more than 5,000 students.
- **COVID-19:** Funding was aligned to support academic learning loss due to closure of schools to in-person learning during the 2020–2021 academic year. The initiative will offer grant funding to schools to provide targeted interventions and acceleration academies during out-of-school time to help close academic learning gaps caused by the pandemic. To date, the acceleration academies have been held in 66 schools with over 8,000 students attending.



GE Innovation Lab at  
Milwaukee Public Schools.

### RIBBON-CUTTING

Milwaukee Public Schools (MPS) and the GE Foundation unveiled the GE Innovation Lab, marking the in-person opening of six digital fabrication labs within the district (photo credit: MPS). [Learn more ▶](#)

## WORKFORCE DIVERSITY AND ECONOMIC INCLUSION

Education is a significant driver of economic inclusion. With a long history of education and workforce diversity programs, the GE Foundation made a \$2 million commitment in October 2020 with initial support to five organizations focused on training and education.

**National Society of Black Engineers (NSBE), Jackie Robinson Foundation (JRF), Advancing Minorities' Interest in Engineering (AMIE) and National Action Council for Minorities in Engineering (NACME)** were initially funded by the GE Foundation to provide

scholarships, leadership development and mentoring programs to help diverse high school students pursue higher education in STEM fields. In 2021, these organizations awarded 20 scholarships to students studying engineering, ranging from \$5,000 to \$40,000.

In late 2021, GE Foundation included two more organizations—the **Society of Hispanic Professional Engineers (SHPE)** and **Society of Woman Engineers (SWE)**—that will be providing 42 students \$10,000 scholarships over the next two years.

The GE Foundation is also supporting an innovative development program with the **National Minority Supplier Development Council (NMSDC)** called CyberReadyMBE™. The cyber program will help prepare minority business enterprises (MBEs) for contract opportunities with the U.S. government and with corporations across the U.S. The cyber program aims to improve MBEs' capabilities in a growing industry by helping companies get designated as cyber ready, provide them with cyber readiness pathways and connect designated MBEs to contract opportunities.

The program launched with a Chicago pilot in late 2021 with 23 MBEs. The program invited the MBEs to attend the National Cyber Summit sessions on cyber awareness and readiness and conducted cyber and a workforce gap assessment. The MBEs who are cyber ready will be designated by National Minority Supplier Development Council (NMSDC), boosting their ability to operate, be competitive and win contracts.

## ENABLING HIGHER EDUCATION

GE Foundation established the GE STAR Awards program in 1984 to provide competitive scholarships to children of eligible GE employees around the world. Since then, almost 15,000 awards have been given worldwide, totaling more than \$20 million. The winners are chosen based on their academic record, extracurricular activities and community service, and personal experiences and goals as described in personal essays.

*"Small acts when multiplied by millions of people, can transform the world,' this quote is my inspiration for all things in life. To make a change for the better you have to start small, no matter how big your goal might be. In the future, I hope to help underdeveloped countries with their healthcare system. The pandemic has shed light on the need for a change to occur in many countries' healthcare systems. To achieve my goal, I'm starting small by volunteering for our local hospital, setting up blood drives at my school, committing for the pre-med track at the University of Pittsburgh and keeping myself informed on the issues at hand regarding healthcare system."*

### NISHI

GE STAR Award recipient  
Child of Shilpakala Totawat,  
GE Power Portfolio

## ADVANCED MANUFACTURING IN MASSACHUSETTS

While advanced manufacturing is one of the largest economic and employment sectors in Massachusetts' economy, there remains a skills gap across the state with the number of open jobs exceeding the availability of skilled workers. In November 2019, the GE Foundation announced a \$2.5 million grant to launch the **Advanced Manufacturing Training Expansion Program (AMTEP)** in Lynn and Massachusetts' North Shore. In October 2021, GE Foundation announced a \$4.4 million grant to extend funding through 2025. The multi-year program complements the Massachusetts Baker-Polito administration's Workforce Skills Cabinet and will triple the region's training footprint, reaching more than 900 high school students and adult learners and building a more diverse, sustainable, "ready-to-work" pipeline in Lynn and across Massachusetts' North Shore. The GE Foundation also contributed \$1 million to support the expansion of the state-of-the-art Advanced Manufacturing Center at Lynn Vocational Technical Institute (LVTI), which was bolstered by a match from the Baker-Polito administration. To date, AMTEP has reached 205 participants for the adult programming and is supporting 130 youth in machining pathways at LVTI, Essex North Shore Agricultural & Technical School and Gloucester High School.

*"Coming into the program, I had absolutely no background in manufacturing. In nine months, I was able to interview for a job that I really wanted and being able to have the confidence to go in there and get the job is life changing."*

**CHAD**

AMTEP Graduate

The program has enrolled an additional 106 adult learners in the 2021-2022 programming and has expanded capacity by adding six certified trainers to deliver advanced manufacturing programming across the three locations. The program is also enabling more diverse community members to enter the advanced manufacturing workforce, with women comprising 13% of participants and over 60% being racially and ethnically diverse.

### STUDENT HIGHLIGHTS

13%	61%	81%
are women	are racially and ethnically diverse	have secured employment

During COVID-19, AMTEP pivoted between remote learning and hybrid models to continue enrollment, program completion and transition to employment for AMTEP candidates. Throughout the pandemic, the program hosted virtual job fairs with local employers and, to date, more than 80% of program graduates have secured employment in advanced manufacturing positions.



### ADVANCED MANUFACTURING GRADUATION

25 adult learners graduated from the Advanced Manufacturing Training Expansion Program at Essex North Shore Agricultural & Technical School. [Learn more ▶](#)



### LYNN VOCATIONAL TECHNICAL INSTITUTE

The GE Foundation contributed \$1 million to support the expansion of the state-of-the-art Advanced Manufacturing Center in Lynn, Massachusetts, which was bolstered by a match from the Baker-Polito administration (photo credit: Joshua Qualls/Governor's Press Office). [Learn more ▶](#)

## Developing health

The GE Foundation's signature programs, Developing Health Globally™ (DHG) and Developing Health U.S. (DH), have a long history of increasing access to quality healthcare in underserved communities around the world. These programs have been funded and managed by the GE Foundation in collaboration with national ministries of health, public and private health facilities, non-governmental organization and academia.



### INCREASING ACCESS TO SAFE SURGERY

Since 2015, the GE Foundation has led a multi-sector effort to improve surgical capacity and training with its Safe Surgery 2020 initiative. Access to safe, affordable surgical and anesthetic care is a pressing issue in global health. There are currently 5 billion people across the world who lack access to the safe surgical care they need. The \$25 million commitment has supported a five-year initiative that focuses on transforming the accessibility, quality and safety of surgical care in low- and middle-income countries, leading to reductions in maternal and trauma-related mortality and stronger health systems. Safe Surgery 2020 launched in Ethiopia and Tanzania in partnership with their ministries of health, global organizations as well as local partners from the surgical society, local teaching institutions and district hospitals. In 2018, the initiative expanded to South East Asia, with programs starting in Cambodia. This GE Foundation funding for Safe Surgery 2020 has resulted in several outputs that will carry forward sustainably for years to come. These outputs include:

- A deep body of literature to inform others about the work and how to deploy similar programs (24 peer-reviewed papers, 46 conference presentations, and 9 policy documents, chapter and case studies);



#### SAFE SURGERY IN CAMBODIA

Close to 900 Cambodian surgical experts, clinicians and nurses have improved their surgical, anesthesia, caesarian procedure skills and more, thanks to training provided by the Safe Surgery 2020 program that drew to a close in 2021 (photo credit: Assist International). [Learn more ▶](#)

- An extensive network of local trainers and mentors, including 67 anesthesia trainers in Ethiopia alone and a global network of resources through Project ECHO (Extension for Community Healthcare Outcomes);
- The deployment of the Safe Surgery Organizational Readiness Tool (SSORT) enable facilities to assess their readiness to deploy the changes required for implementation of safety and quality improvements; and
- Development of a detailed program to enable nations to create and implement their own National Surgical, Obstetric and Anesthesia Plans (NSOAP) to change policy, build surgical workforce capacity, test and implement new innovations and contribute evidence to further improvements in surgical access and quality. [Learn more ▶](#)

### REDUCING HEALTH DISPARITIES

Access to specialty health care in rural and medically underserved areas around the world is limited. Project ECHO is an innovative model that builds the capacity of and reskills primary care providers to treat more patients with chronic, complex conditions, exponentially expanding access to care. Through a \$14 million, multi-year commitment made in 2015, the GE Foundation, as one of the largest funders of Project ECHO, has supported global replication and scale of this model. By leveraging technology, primary care providers are linked with multi-disciplinary teams of specialists who share their expertise. As the primary care providers expand their knowledge and skills, they can begin to treat more patients. With The GE Foundation's support, Project ECHO has grown to over 4,500 programs operating in 190 countries. ECHO also saw continued expansion in Africa with 70 training centers in 21 African countries.

### CHANGING THE FACE OF MEDICINE

Launched in 2012, the National Medical Fellowships Primary Care Leadership Program (PCLP) is an innovative service-learning program. PCLP provides health professional students from diverse backgrounds with an opportunity to learn first-hand about the challenges and rewards of primary care practice at community health centers (CHC) across the United States. PCLP was conceived as an opportunity to create a rich and immersive experience that would expose scholars to both clinical and non-clinical aspects of primary healthcare delivery. PCLP's mission is to develop a pipeline of future primary care professionals from diverse backgrounds who are committed to serving underrepresented communities and to building capacity at partner CHCs. Since inception, the program has supported 634 scholars, 92% are racially and ethnically diverse, and 84% are choosing to focus their careers in primary care.



*"The highlight of my week was my first day in clinic at Lynn. It was amazing meeting everyone in person and learning about the center and all the services they provided."*

**ISAIAH WILLIAMS**

PA Candidate, Rutgers University  
PCLP Scholar 22

## ATTACKING THE OPIOID CRISIS

In 2016, the GE Foundation announced a \$15 million, multi-year commitment to community health in Boston and greater Massachusetts to expand care in behavioral health and addiction medicine with a focus on the opioid crisis. The health initiatives in Massachusetts focus on expanding access to evidence-based treatment through primary care provider capacity building and reskilling and on driving awareness and advocacy to combat the stigma associated with the disease of substance use disorder. Ongoing programming includes:

- **Community Care in Reach®:** With support from the GE Foundation, the Kraft Center for Community Health, Massachusetts General Hospital and Boston Health Care for the Homeless, this pilot mobile health van has supported almost 19,000 encounters with at-risk and homeless individuals in downtown Boston and surrounding neighborhoods. Recognizing the program's success, the state of Massachusetts awarded additional funding to replicate the model in up to six communities in Massachusetts.
- **Project HERE:** In partnership with the Massachusetts Attorney General Maura Healy, Project Here provides free resources to educators across Massachusetts to teach substance use prevention to middle school students (sixth to eighth grade) in order to empower students to make healthy decisions and promote social-emotional learning. Project Here was designed to address an unmet need for prevention education and has three main components: an online toolkit, which centralizes existing trusted resources; Project Here Games, an innovative educational game; and a grant program, which funds evidence-based curricula.

In 2021, Project Here continued to adapt its resources and provide training and technical assistance to support teachers in a remote learning environment. In the spring of 2021, the Attorney General's Office and the GE Foundation announced an additional funding commitment and

launched new features to Project Here Games, focused on making it more accessible and inclusive. To date, Project Here has over 360 Massachusetts middle schools registered with the program and has provided trainings to hundreds of educators. The online toolkit has over 700 users, Project Here Games has over 17,000 users and the grant program has provided funding to over 100 schools.

## Disaster and humanitarian relief

GE's Disaster and Humanitarian Relief program responds to major global disasters and humanitarian crises, drawing on GE's people, technology and other resources to reduce suffering and hasten recovery. In 2021, the GE Foundation's philanthropic contribution to disaster relief totaled \$2 million, which continued to support our ongoing response to the COVID-19 pandemic as well as fund support for disaster and humanitarian crises around the world. GE Foundation made a grant to the [German Red Cross](#) for relief, specifically providing access to water, food and shelter, as well as sewage disposal, due to the devastating floods in July 2021. In August, Haiti suffered another powerful and catastrophic earthquake. The GE Foundation supported the relief work by partnering with Health Equity International, the largest healthcare provider in the region which owns and operates St. Boniface Hospital, to support the deployment of mobile clinics into the hardest hit communities to provide essential primary care and follow-up services. From August through December, the GE Foundation also worked with the International Rescue Committee and [Team Rubicon](#) to support Afghan refugees coming to resettle in the U.S. These partnerships provided immediate health and daily needs support, as well as legal support for resettlement. In December 2021, we partnered with [CARE](#) to provide \$500 cash cards to the victims of the devastating tornados in communities in and around Madisonville, Kentucky.



### YOUTH PREVENTION EDUCATION

The Massachusetts Attorney General's Office and the GE Foundation, in collaboration with FableVision Studios, launched new updates to make the program's educational app, Project Here Games, more accessible and inclusive. [Learn more ▶](#)



### REBUILDING SCHOOLS IN VIETNAM

Following historic floods and landslides in 2020, Habitat for Humanity Vietnam and GE Foundation renovated 10 damaged classrooms at two schools, providing better learning facilities for nearly 900 children and teachers. [Learn more ▶](#)

Following devastating flooding and mudslides in Petrópolis, Brazil, earlier this year, the GE Foundation partnered with [Ação da Cidadania](#) (Citizenship Action), a Brazilian non-profit organization, to support emergency relief and reconstruction efforts. The funding provided an estimated 40 tons of emergency food and hygiene kits for approximately 2,500 residents, as well as supply 500 families with refrigerators and ovens during the rebuilding process.

Additionally, the GE Foundation's Matching Gifts Program enabled employees to contribute to crisis relief efforts in their local communities, doubling their impact by matching their donations. GE remains committed to preparing for and responding to future natural disasters and humanitarian crises, maximizing the impact of our financial, technological and human resources.

*"Twenty years ago, I was living in my first Colorado apartment when our country first went into this war. Twenty years later, I'm part of a crew helping move an Afghan family into their first Colorado apartment. Talk about coming full circle."*

**JORDAN DANIEL**

Team Rubicon volunteer



Since 2014, GE has sent a delegation to the annual One Young World (OYW) summit. This global forum convenes young talent from every country and sector working to accelerate social impact. Delegates from more than 190 countries are counselled by influential political, business and humanitarian leaders, such as Justin Trudeau, Paul Polman, Muhammad Yunus, Meghan Markle, among many other global figures.

**IMPACTING THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS**

Inspired by the OYW summit, a group of GE delegates recognized that employees in the corporate world had difficulty in finding avenues to make a sustained impact. Out of this need, the grassroots organization Generation Impact was created and the team serves as matchmakers, connecting skilled and passionate individuals with projects from non-profits, NGOs and social enterprises impacting the United Nations Sustainable Goals for Development (UN SDGs). Generation Impact has mobilized 200 employees globally across all GE businesses to volunteer their skills in information technology, finance, supply chain and engineering to aid organizations such as Assist International, Partners in Health, Catie's Closet, ChildFund and WholeForest. Between 2020-2021, the organization has connected 77 volunteers to 25 projects which impacted 14 out of the 17 UN SDGs.

## GE Foundation matching gifts program

The GE Foundation created the concept of a corporate matching gift program in 1954. The program supports employees in their personal philanthropy/charitable giving by providing a 1:1 match. Today, the GE Foundation Matching Gifts Program continues to serve as an important element of the Foundation's portfolio, with gifts matched totaling over \$1.5 billion since inception.

MATCHING GIFTS  
**\$6.2 million**

in Matching Gifts in 2021

### GE GIVING

Dollars in millions

	2019	2020	2021
<b>GE Company Contributions via GE Businesses and GE Foundation</b>	\$55.4	\$44.9	\$34.9
<b>Employee and Retiree Contributions</b>	\$24.6	\$16.8	\$ 9.4
<b>Total GE "Family" Giving</b>	\$80.0	\$61.7	\$44.3
<b>Total Contributions as a Percentage of GE Revenue</b>	0.06%	0.08%	0.06%



GE Girls celebrates 10 years.

### TEN YEARS OF GE GIRLS

GE Girls is a program sponsored by GE designed to encourage girls to explore the world of science, technology, engineering and math (STEM) and STEM-based careers. The traditional GE Girls program is co-hosted by a GE business and a local university and includes a week-long, hands-on, STEM-based learning experience designed around a dynamic curriculum including physics, additive technology, construction, math, computer science, electronics and chemistry, in addition to learnings specific to the respective local GE business. Ten years ago, we created GE Girls to capture the hearts and minds of talented young women early in their life journeys with the possibilities of STEM. From its inaugural program in 2011 at MIT to more than 21 locations, GE Girls has encouraged thousands of girls across the U.S. and around the world to dream big for their future careers. [Learn more ▶](#)



### GIRLS GET SET

In 2021, GE's GirlsGetSET (GGS) program in the U.K. celebrated its 10<sup>th</sup> birthday. GirlsGetSET began with a simple aim to give more girls the chance to develop a passion for STEM. Ten years later, we are proud that more than 8,500 girls have taken part, with seven going on to work for GE. This milestone was marked in June with a series of events for girls, teachers and GE employees, hosted in conjunction with the Engineering Development Trust (EDT). Content ranged from GGS alumnae sharing their career journeys to discussions about unconscious bias and how to address it.

[Learn more ▶](#)

## Sustainability frameworks

We routinely and purposefully analyze and revisit our sustainability programs, commitments and targets. For disclosure purposes, in addition to the UN SDGs, we have considered three key sustainability reporting frameworks as we developed this report:

- (1) the Task Force on Climate-related Financial Disclosures (TCFD) framework,
- (2) industry-specific standards from the Sustainability Accounting Standards Board (SASB), and
- (3) the Global Reporting Initiative (GRI) Standards (Core).

TCFD, SASB and GRI indices can be found [here](#).

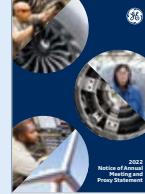
We are informed by these standards and frameworks, as well as our engagement with key stakeholders as we determine sustainability priorities and goals. Of course, building a more sustainable world requires us to revisit and reassess our goals frequently, and we intend to continue mapping our progress against these frameworks to further develop our sustainability strategy.

**WHERE YOU CAN FIND MORE INFORMATION**



**2021 Annual Report**

<https://www.ge.com/investor-relations/annual-report>



**2022 Proxy Statement**

<https://www.ge.com/proxy>



**2021 Sustainability Report**

<https://www.ge.com/sustainability>



**2021 Diversity Annual Report**

<https://www.ge.com/diversity>



**2021 Human Rights Report**

<https://www.ge.com/sites/default/files/2021-human-rights-report.pdf>

**EXECUTIVE OFFICES**

General Electric Company  
5 Necco Street, Boston, MA 02210  
+1 (617) 443-3000

**REGISTERED OFFICE**

General Electric Company  
1 River Road, Schenectady, NY 12345

©2022 General Electric Company.

GE is a trademark of the General Electric Company. LinkedIn, the LinkedIn logo and the IN logo are trademarks of LinkedIn Corporation. Other marks used throughout are trademarks and service marks of their respective owners.

**GE IS A WORLD-LEADING CORPORATION:**



**Forbes**  
World's Best Employers



**Forbes**  
Green Growth 50



**Interbrand**  
Best Global Brands



**Boston Business Journal**  
Top Charitable Contributor



**Society of Hispanic Professional Engineers (SHPE)**



General Electric Company

5 Necco Street

Boston, MA 02210

[www.ge.com](http://www.ge.com)