

# Focusing on sustainability in cardiovascular ultrasound



Vivid™ Pioneer

# Creating a more sustainable future requires us to care for the planet and its inhabitants

It is essential that we continue to drive progress toward early, precise, and accessible diagnosis and treatment of more patients. For the planet, it is critical that we do so with a reduced impact on precious and rare resources that are imperative to life. We believe that the advancement of precision medicine, greater digitization of healthcare, and increased access to quality care are fundamental to accomplishing this goal.

We support carbon policies that reduce greenhouse gas emissions and promote sustainable development. GE HealthCare has a goal to achieve net zero by 2050. An interim goal is to reduce our operational emissions (Scope 1 and 2) by 42%\* and our Scope 3 emissions from purchased goods and services, upstream transportation and distribution, business travel, and use of sold products by 25%\*\* by 2030 compared to a 2022 baseline. In 2024, we received validation on our updated goals from the Science Based Targets initiative (SBTi), a group of visionary corporate leaders taking ambitious climate action. As a result of these efforts, we want to enable a more sustainable health system by addressing not only the environmental impacts of our products but also the challenges healthcare professionals and their patients face with resilient, digital solutions.



**We have a goal to achieve net zero emissions by 2050.**

**We've set interim goals to reduce Scope 1 and 2 emissions by 42% and Scope 3 emissions by 25%\* by 2030\*\*.**

\* from a 2022 baseline year.

\*\* includes purchased goods and services, upstream transportation and distribution, business travel, and use of sold products from a 2022 baseline year.

# Leading a new era in sustainability for a more resilient tomorrow

We're creating a world where healthcare has no limits, helping to improve access to care and enable better patient outcomes.



## **Environmental**

Using fewer resources  
for a healthier planet.

## **Digital**

Transforming healthcare  
through innovation.

## **Resilience**

Building flexibility and  
dependability across  
healthcare systems.

# Helping to create a more sustainable tomorrow

Our Vivid Pioneer Cardiovascular Ultrasound and its services help ensure that clinicians, and the patients they serve have the technology necessary to create a more sustainable and resilient tomorrow.

## Reducing environmental impact

- Vivid Pioneer is designed to be refurbished, reused, or recycled at the end of its product life to minimize unnecessary waste.
- Inverted B/W background printing, helping to prevent waste of ink and paper.
- eDelivery remote software update solution decreases our service field engineers' carbon emission footprint and use of USB flash drives.

## Improving care

- AI features reduce exam time and increase accuracy and consistency.
- The next generation cSound™ imaging platform and XDclear™ probe technology deliver deep penetration and high sensitivity while maintaining high spatial resolution.
- A simplified ergonomic design and user interface support intuitive and natural interactions.



# Contributing to a healthier planet

**More than half of the healthcare sector's climate footprint, approximately 53%, is attributable to energy use.**<sup>1</sup> As a result, we have strengthened our commitment to environmentally conscious design and we are implementing more sustainable practices across our product manufacturing, sourcing, distribution, installation, and service operations. This includes improving energy efficiency, optimizing the use of limited or rare materials, providing digitally enabled service throughout the product lifespan, and offering refurbishment and recycling options at the end of product life.

**GE HealthCare environmental management system is ISO 14001 certified**

Our production and service operations align to ISO 14001 standards

**We're committed to environmental product design**

Vivid Pioneer conforms with IEC 60601-1-9.

<sup>1</sup> Health care climate footprint report | Health Care Without Harm (noharm-uscanada.org), based on 2019 report

## Materials

GE HealthCare reviews the environmental aspects of the material supply used within our products to increase recyclability and decrease the use of hazardous substances, when possible.

### Recyclability

We're committed to high recyclability of our products and reuse.

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This product is demountable and recyclable (material recycling) to at least 85% of its total weight.

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### Reduce the use of hazardous substances

EU RoHS directive 2011/65/EU

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REACH (EC) 1907-2006

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Including Commission Delegated Directive (EU) 2015/863.



## Packaging and distribution

GE HealthCare imaging equipment has a robust and multi-sourced supply chain for systems and spare parts across our product portfolios.

### Product packaging

Packaging material is recyclable and FSC certified.

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Ultrasound console packaging cardboard for Vivid Pioneer is made of about 75% recycled material.

## Manufacturing

Through our environmental reviews, we also focus on implementing more renewable energy and reducing waste.

### Reducing electricity

Vivid Pioneer ultrasound systems are manufactured in our Zipf, Austria, facility which uses 100% environmentally friendly and renewable energy.

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Various energy reduction projects are ongoing in our Zipf facility.



## Product utilization

Our imaging products are designed to help enable energy efficiency through dedicated features and advanced applications to reduce the environmental impact. Ergonomic design can help to enhance health and potentially reduce environmental impacts, such as reducing waste and saving energy.

### Ergonomically designed

#### Patient setup and positioning

Remote Diagnostics: Allows GE HealthCare's technical experts to diagnose and fix issues remotely, reducing equipment downtime.

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eDelivery (option): Allows software to be delivered directly to devices or downloaded from the eDelivery portal. Provides fast and secure access to updates, bug fixes, and associated items, ensuring systems are always up-to-date and secure. Depends on Insite™ Connectivity.

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Imaging Insights: Ability to connect and provide system utilization data to GE HealthCare's Imaging Insights offering.

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#### Reduce staff burden

Ergonomic features include a highly portable user-adaptable design with adjustable height and monitor that can swivel to any viewing direction and a keyboard with lightweight transducers.

Width: 56 cm (22.0")

Depth: 89 cm (35.0")

Height: 119 cm–181 cm (46.9"–71.3") (adjustable with electrical motor)

Weight: no peripherals: 104 kg (229 lbs.) 4 probes, B/W printer, DVD drive, battery: 110 kg (242 lbs.)

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The probes have been ergonomically designed to handle and manipulate with ease, and an optional foot switch can be used for hands-free system control.



## Product utilization

### Reduce noise

Typical audible noise:  $\leq 35$  dBA (measured at normal user-location in standard working mode)

Maximal audible noise:  $\leq 60$  dBA

### Guidance for product utilization

Instructions are provided for use of the equipment to minimize the environmental impact during installation, use, and operation.

### Reduce energy consumption during use

The system is designed to auto freeze after time of inactivity determined by the user.

### Power consumption

Off mode: 12W

Standby/Idle (no scan): 285W

Scan mode:

2D scanning: 327 W

4D scanning: 465 W

### Reduce consumable energy utilization

The system is designed to auto freeze after time of inactivity determined by the user.

Auto Freeze (tissue detection) on 4Vc-D probe will automatically enable freeze mode when the probe is not in use.

Automatically entering freeze from 4D scans reduces energy consumption by 100 W.

# End of product life

We are increasingly putting our retired products' materials back into the supply chain to maximize efficient use and minimize unnecessary waste. This circularity model enables our imaging products to extend their clinical impact through longer lifespans while reducing the environmental footprint. Additionally, we offer our customers support for upgrades and services throughout a product's lifespan, when available, to maintain optimal performance and help drive better patient outcomes.

Our refurbishment programs involve an extensive inspection and testing process, designed to bring equipment back to its original certified manufacturing specifications. If the system is not suitable for refurbishment, eligible parts are harvested for reuse after quality and performance testing, while the remaining parts are returned to dedicated recycling facilities.

## Product utilization

**Guidance for end of lifecycle**

Equipment instructions are provided to minimize the environmental impact for disposal or recycling.

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**Upgradeable hardware and software options are provided as a solution to extend the product lifespan**

Upgrades are available for Vivid Pioneer.

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**Parts harvesting and refurbishment options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions**

Cardiovascular ultrasound system parts are eligible for assessment through the refurbishment program, in which they are assessed for refurbishment, harvesting, or recycling at the appropriate time in the lifespan.<sup>2</sup>

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94–96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product.<sup>2</sup>

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100% of Vivid Pioneer systems are eligible for refurbishment.

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**Waste reduction**

This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

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EU directive reference 2012/19/EU

<sup>2</sup> System parts are eligible for refurbishment, although whether a system is actually refurbished versus harvested for parts or otherwise recycled or reused, is dependent on the state of the system when GE HealthCare takes possession of it.

# Digitizing healthcare through transformative innovations for a more resilient tomorrow

We are committed to investing in digital capabilities that help accelerate clinical decision making, optimize imaging operations, and drive efficiencies in exam workflows, all of which can improve patient outcomes. Enabling digital transformation will further enhance our predictive and maintenance service operations for the life of your products.

We are also dedicated to driving a more resilient and sustainable future in healthcare. Many factors, including the pandemic, climate-related weather disasters, and supply-chain issues amplified this need. Managing operations through these challenges requires resilience and perseverance.

## Helping clinicians advance patient outcomes

Advanced applications and cutting-edge AI tools provide personalized data to drive actionable insights, helping healthcare professionals make fast, accurate clinical decisions for care pathways.

### Gain actionable clinical insights for quicker decision making

Automated Functional Imaging (AFI) leads to earlier diagnosis and improved outcome.

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The AI Auto Measure 2D (option) tool eliminates up to 80% of clicks.<sup>3</sup>

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AI-based AI Auto Measure—2D Measurement (option) enables semi-automated quantification of the most common distance measurements performed on parasternal long axis 2D images with minimum user guidance.

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Obtain ejection fraction and strain measurements in just one click with results in 8.8 seconds, on average.<sup>4</sup>

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AI Cardiac Auto Doppler automatically provides Doppler measurement results for the most common parameters with minimal user guidance.

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### Keep your imaging equipment up to date with advanced clinical applications

Vivid Pioneer is designed to download software updates when they are available using InSite™. Software download monitors, notifies, delivers, and installs available system software updates. Remote update options via eDelivery are available in some markets.

<sup>3</sup>Applicable to the AI Auto Measure 2D algorithm. Results based on GE HealthCare internal data (DOC2361011).

<sup>4</sup>Time to strain measurement result may vary with heart rate, frame rate and Vivid system. Verification of performance done by GE HealthCare clinical application specialists using Vivid system (DOC2739637rev2)



## Helping clinicians advance patient outcomes

**Help improve patient outcomes with improved image quality**

Our cSound platform uses advanced software image reconstruction and state-of-the-art graphics technology to deliver exceptional image quality on the Vivid Pioneer.

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The Vivid Pioneer also features Clarity+ filtering, HD Imaging (optimal resolution, penetration, and image uniformity), and Adaptive Contrast Enhancement (ACE) for superior images.

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Clarity+ applies spatial filtering to suppress noise and graininess (speckles), typical for ultrasound imaging, while sharpening boundaries and tiny structures and thereby giving a more pleasing presentation of the tissue structures while maintaining true tissue architecture.

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HDlive™, FlexiLight and Silhouette enhance 4D tissue visualization and have the potential to increase understanding of complex cardiac structures and/or catheters and implantation devices.

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**Drive advancements with precision health**

AFI has been shown to be more sensitive than traditional parameters like ejection fraction. This may result in earlier diagnosis and improved outcome.



## Optimizing imaging operations

Our AI-based and advanced digital solutions are designed to increase efficiencies across the cardiology spectrum without increasing the administrative and training burden on cardiologists and sonographers.

### Increase productivity and consistency

Instant Store: No pause of real-time imaging while storing

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Stream Server: Streaming of raw data over the network connection to enabled 3rd-party devices to utilize live data from the system.

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AI-powered applications automate common clinical measurements.

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### Reduce downtime

iCenter™ analytics track metrics and deliver data on equipment status, maintenance history, and performance to help reduce downtime.

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The remote service platform InSite™ connects you with a GE HealthCare Online Service Engineer or Applications Support Engineer. It has remote diagnostics capability as well as the ability to request service.

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Software updates are available for download via eDelivery, reducing the need for a service visit to ensure system is secure and up to date with necessary fixes.

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The battery option features a transportation mode that keeps the system ready to scan within a few seconds of being connected to a power outlet.

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### Cybersecurity

GE HealthCare's Design Engineering Privacy and Security (DEPS) process follows GDPR, HIPAA, NIST 800-53, NIST 800-30, ISO 27001, and NIST CSF requirements.



## Enabling intelligent exam workflows

Intelligent automation features help to drive consistency, enable fast, easy exams, and improve workflow with fewer resources.

### Reduce setup time

Our QuickApps offer both factory and user programmable sub-preset features that keep 2D and geometry settings while adapting color flow or contrast parameters. QuickApps can be added as shortcuts on touch panel for quicker access by user.

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Vivid Pioneer has pre-programmable M&A and annotation categories.

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### Reduce exam time

Instant Store: No pause of real-time imaging while storing.

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AI-powered applications, such as AI Auto Measure—2D, AI Cardiac Auto Doppler, and Easy AutoEF, automate common clinical measurements.

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AI Auto Measure Spectrum Recognition enables automated recognition of the most common Doppler spectra and automatically starts the Auto Doppler measurement (where commercially available).



## Enabling intelligent exam workflows

**Help improve patient outcomes with improved image quality**

In addition to delivering auto optimized superb 2D images, our cSound technology requires little manipulation. Vivid Pioneer also features cSound ADAPT (correction of ultrasound wave distortions) for Color Flow imaging, resulting in sharper jet delineation and improved penetration.

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Many of our other optional automated tools are also designed for ease of use, including 2D Auto EF 3.0 and AFI 3.0 Productivity Package with AI-based View Recognition, Cardiac Auto Doppler with AI Auto Measure—Spectrum Recognition, AI Auto Measure—2D, and Scan Assist Pro.

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Likewise, many of our 4D imaging tools are engineered with ease-of-use in mind. These include Single Beat 4D, 4D Views, Advanced 4D User Toolbox including FlexiSlice, Advanced 4D User Quantification Package, 4D Auto LHQ, 4D Auto MVQ, 4D Auto AVQ, FlexiViews, 4D Markers, and View-X.

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### Cleanability

Our equipment is designed to be cleaned and disinfected easily. We continue to test and approve new cleaning and disinfecting agents. Visit [Cleaning.GEHealthCare.com](https://www.gehealthcare.com/cleaning) for updates.



# Creating a healthy world to help enable better patient outcomes.

[GEHealthCare.com/about/sustainability](https://GEHealthCare.com/about/sustainability)

*Not all products or features are available in all geographies. Check with your local GE HealthCare representative for availability in your country. Commercial availability of GE HealthCare medical systems is subject to meeting local requirements in a given country or region. Not all features are included in the standard system configuration. Contact a GE HealthCare representative for more information. Intended for healthcare professionals only.*

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