Focusing on sustainability in computed tomography

Revolution™ Maxima

GE HealthCare

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 is committed to achieving net zero by 2050 and we have signed up to the Science Based Targets initiative (SBTi) business ambition for 1.5C, a group of visionary corporate leaders taking ambitious climate action, and we have committed to implementing science based targets. This includes a public goal to reduce operational emissions (scope 1 and 2) by 50% by 2030 against a 2019 baseline. 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 are committed to achieving net zero emissions by 2050.

We've set a public goal to reduce operational emissions (scope 1 and 2) by 50% by 2030.

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.

Revolution™ Maxima helps create a more sustainable tomorrow

Our CT, Revolution™ Maxima, and its services help ensure clinicians and the patients they serve have the technology necessary to create a more sustainable and resilient tomorrow.

Reducing environmental impact

- Reduce energy consumption up to 15% when using Energy Savings Mode.[1]
- Reduced indirect carbon emissions by 68% when using Energy Savings Mode (ESM) and by 62% when not using ESM.[2]
- 88% of materials used in the system are recyclable.[3]

Improving care

- A cornerstone platform is setting a new standard in CT operations with AI-based Auto Positioning to elevate what you can expect from every exam.
- Building upon the powerful platform with core imaging technologies is at the heart of Revolution Maxima with full 40mm detector coverage and 0.28mm high spatial resolution enabled by the leading iterative reconstruction algorithm ASiR-V™.
- A powerful, high-performing, reliable CT designed to maximize every step of the CT workflow, from referral to report.

[1] Compared to the same system not using Energy Savings Mode.
[2] Compared to the predicate product. Data on file.
[3] Data on file.

Contributing to a healthier planet

More than half of the healthcare sector's climate footprint, approximately 53%, is attributable to energy use.[4] 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.

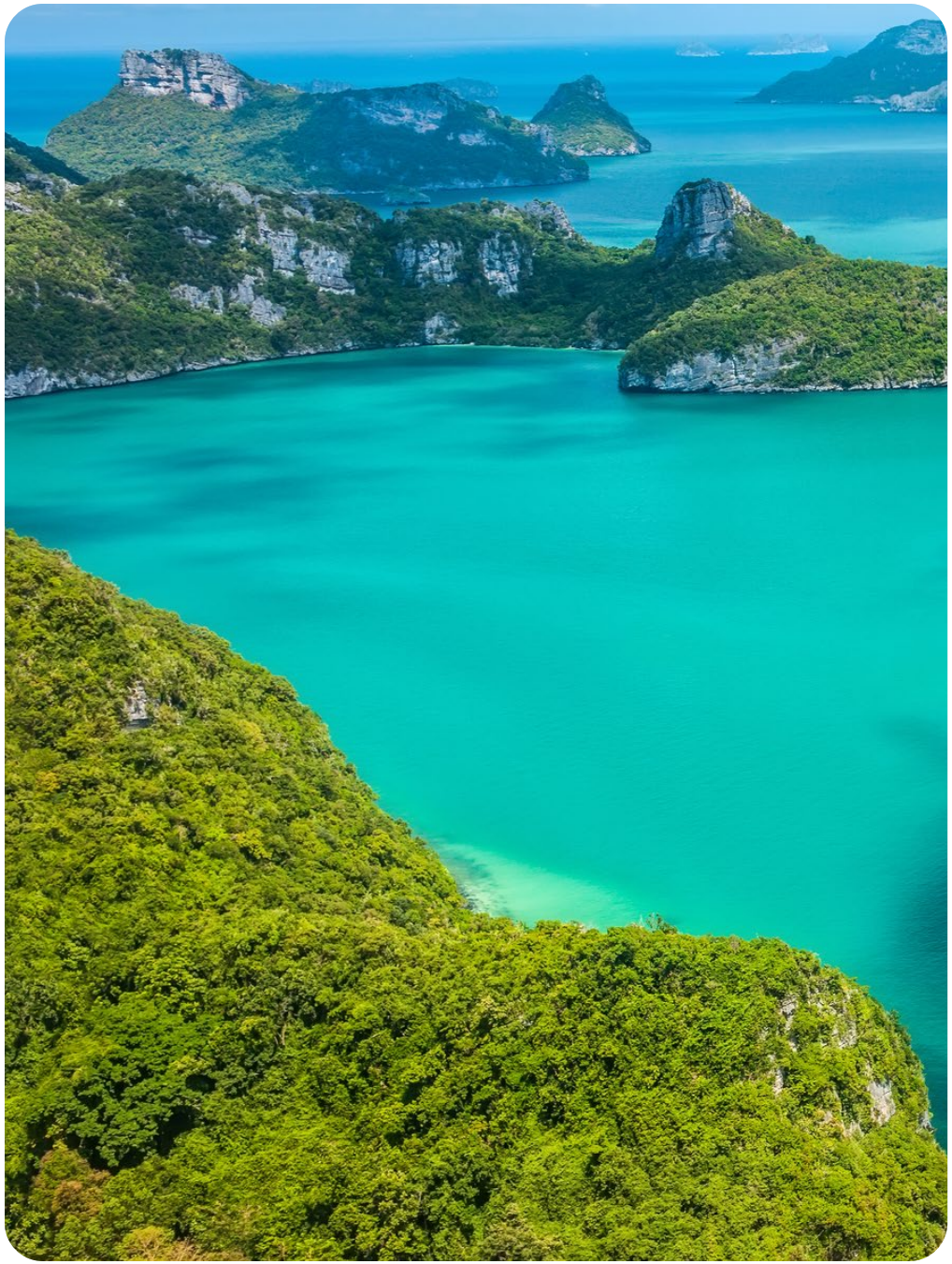
GE HealthCare environmental management system is ISO 14001 certified	Our production and service operations align to ISO 14001 standards.
We're committed to environmental product design	This product conforms with IEC60601-1-9:2007.

[4] 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 when possible.
	When we build a replacement X-ray tube for the Revolution Maxima, 60.1% of the mass of the X-ray tube is reused, enabling savings on energy and natural resources.
Reduce the use of hazardous substances	EU RoHS directive 2011/65/EU
	REACH (EC) 1907-2006
	The Revolution Maxima gantry design does not use lead material as counterweight but instead uses steel, helping to improve production worker safety and reduce environmental impact.



Manufacturing

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

Renewable energy	More than 1,600 kWh of energy is generated with GE on-site solar renewable energy at the Waukesha, Wisconsin CT production facility. This large solar array is located on both the roof and surrounding grounds.[5]

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[6]	The packaging materials consist of wooden pallets with cardboard overpack and plastic vibration absorbers. 73% Wood 24% Cardboard 3% Plastic 445kg Total package weight
Product transportation[7]	47% Air transport 10% Ocean transport 43% Truck transport 53% product transportation utilizes low environmental impact modes[7]

[5] Data on file.
[6] The values provided are based on the typical packaging at GEHC's CT manufacturing sites for the Revolution™ EVO system.
[7] The values provided are based on product transportation and distribution during 2021.

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	Revolution Maxima simplifies the entire patient setup process. Innovative auto centering technology is at the core of our improved scan experience, but it starts with related protocol recommendations. With the click of a button, automatically position your patient at the start location of the scan with AIbased Auto Positioning.
Reduce staff burden	Ensure consistency and ease of use for the technologists by enabling them to select protocols in the CT scan room while the landmark detection accurately maps, landmarks, and defines the scan range. Auto Positioning and Auto Center can help free up your technologists so they can focus on making your patients feel more comfortable. For flexible options, the remote control panel allows the technologist to make table position adjustments or set a landmark from the console.

Product utilization *(cont.)*

Reduce energy consumption

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	Up to 15% energy savings when using Energy Savings Mode[8] Revolution Maxima is designed for less heat generation—up to 90% in one DAS / Detector.[9]
Power consumption[10]	Scenario – Off: 31kWh Scenario – Idle: 41kWh Scenario – Low Power: 38kWh

[8] Compared to the same system not using Energy Savings Mode.
[9] Compared with previous generation system.
[10] Per COCIR Self-regulatory initiative for medical imaging equipment, over a 24-hour period, with 12 hours night scenario as noted (Off, Idle, Low Power).

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.

Guidance for end of lifecycle	Equipment instructions are provided to minimize the environmental impact for disposal or recycling.
Upgradeable hardware and software options are provided as a solution to extend the product lifespan.	Revolution Maxima offers multiple upgrade options to extend the lifespan of the system, including upgrading from 64 to 128 slices. Software upgrades are also available, including the Advanced Cardiac Package and Neuro Stroke Imaging package. Utilize Smart Subscription to keep your software up to date.
Parts harvesting and refurbishment options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions.	CT 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.[11] 94–96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product.[11]
Waste reduction	This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

[11] Products within MR, CT, nuclear medicine, and PET/CT 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.

GE HealthCare product stewardship commitment

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 the acquisition costs associated with buying new equipment. Machines deemed unsuitable for GoldSeal refurbishment are dismantled at end of life, and after successfully passing acceptance testing criteria, specific parts are harvested for reuse. Where harvesting is not appropriate, GE Healthcare recycles about 94–96% of most systems. In a typical year, GoldSeal refurbishes approximately 8,000 pieces of imaging machines and ultrasounds.

New product purchase or lease

Goldseal Program: Lease Return Product or Buyback	• Comprehensively refurbished and/or remanufactured • Updated with new software • Recertified following all FDA requirements • Equipment backed with 1 year, same-as-new equipment warranty
Reclaim for Parts and Materials	Identify parts for refurbishing and/or repurpose
End of Life	About 94–96% of most systems are recycled, substantially reducing the volume of waste en route to landfills.

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	Whenever there is residual motion in the coronary arteries, let SnapShot Freeze 2 go to work in further reducing the motion within the vessel. Minimize the motion within the structures of the heart and further improve image quality of anatomy that is constantly in motion.
	A reproducible method for segmenting the liver guided workflow, DL Hepatic VCAR can help in assessing the complete liver anatomy to assist in surgical planning and lesion evaluation.
	Musculoskeletal studies are made simpler with automated spine labeling by DL Bone VCAR.
	Automate detection of lung nodules with digital contrast agent Lung VCAR.
	Review all CT series acquired for acute stroke workup with exceptional flexibility and simplicity with comprehensive workflow solution FastStroke.

Helping clinicians advance patient outcomes *(cont.)*

Keep your imaging equipment up to date with advanced clinical applications	Smart Subscription protects your equipment from obsolescence and keeps the system at its best. It improves patient outcomes and productivity due to improved functionality and easy access to innovation.
Enhancing image quality	Use up to 82% lower patient dose with ASiR-V with the same image quality.[12]
Drive advancements of precision health	A powerful, high-performing, reliable CT designed to maximize every step of the CT workflow, from referral to report. Setting a new standard in CT operations with breakthrough one click AI-based Auto Positioning.

[12] Compared to standard filtered back projection (FBP) reconstruction. In clinical practice, the use of ASiR-V may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

Optimizing imaging operations

Our AI-based and advanced digital solutions are designed to increase efficiencies across the radiology spectrum without increasing the administrative and training burden on radiologists and technologists.

Increase productivity and consistency

90% protocol suggestion accuracy with Imaging Protocol Manager[13]

Remotely upload, edit, and monitor protocols for multiple service lines, including CT and MR, to deliver consistent image quality and optimal patient care with Imaging Protocol Manager.

Imaging Insights—data intelligence and actionable insights across your radiology department to increase productivity

Reduce repeat scans and ensure accuracy through live support by leveraging centralized expertise and standardized care across the enterprise with Digital Expert.

Remote diagnostics and predictive analytics solutions to streamline your needs:

- Enable software updates, reducing the need for on-site support.
- Secure serviceability, review, and system troubleshooting.
- Elevate training and support.

[13] Results may vary depending on the circumstances, including but not limited to exam type and clinical practice. This analysis was performed on 3175 exams representing 17 different exam descriptions, collected from 4 different medical evaluation sites.

Optimizing imaging operations *(cont.)*

Reduce downtime

OnWatch™ and Tube Watch™ enable predictive services to digitally track key system metrics and detect any anomalies. They send proactive alerts to a remote engineer, who either makes the repair online or schedules a service call.[14]

- 75% reduction in tube related downtime
- 41% reduction of overall system unplanned downtime
- 36% of total onsite labor is planned

Utilizing a partial system UPS can help maintain user productivity and improve system reliability.

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.

[14] Results may not be typical of every customer's performance and cannot be guaranteed. Versus a break and fix model. Average planned labor hours are calculated by using all the proactive service requests initiated by the system with their associated planned downtime compared to the service requests initiated by the customer with associated unplanned downtime.

Enabling intelligent exam workflows

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

Reduce setup time	Streamline the patient setup with Auto Positioning. Starting with smart protocol selection and automated centering, simply click a button to automatically position your patient at the start location of the scan.
Ease of use	Auto Positioning provides consistency and ease of use for the technologists with one-click, hands-free automation.
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* for updates.

Creating a healthy world to help enable better patient outcomes.

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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