Sustainable X-ray solutions for a resilient tomorrow

Definium™ 646 HD

Creating a more sustainable future requires we 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 health, 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. We are committed to achieving net zero by 2050 and are part of the UN-backed "Race to Zero," with a goal of reducing emissions based on the Paris Agreement. We've also set a public goal to achieve a 50% reduction in our own operational emissions by 2030. 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 options.
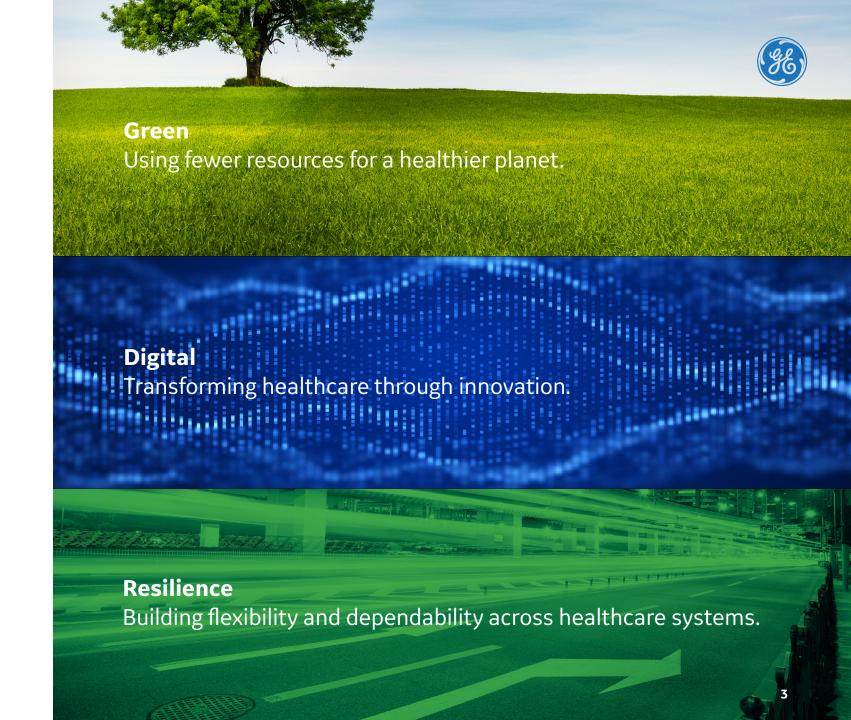
We are committed to achieving **net zero** emissions by 2050.

We've set a public goal of a **50% reduction** in our own operational emissions by 2030.

We deliver sustainable, intelligently efficient solutions for a resilient tomorrow.

Building a healthier world to help improve access to care and enable better patient outcomes.

Green
Using fewer resources for a healthier planet.

Digital
Transforming healthcare through innovation.

Resilience
Building flexibility and dependability across healthcare systems.

Definium™ 646 HD* helps create a resilient tomorrow.

Our Definium™ 646 HD fixed X-ray system and its services help ensure that radiology professionals and the patients they serve have the technology necessary to create a sustainable and resilient tomorrow.

Reducing environmental impact

- Reduce energy consumption by 50% using standby mode when the system is idle.[1]

- 80% of our X-ray systems are eligible to be recycled.[2]

Improving outcomes

- FlashPad™ HD digital detector captures extraordinary details at low dose with 100-micron resolution.

- Helix™ 2.0 advanced image processing delivers extraordinary details and consistent performance across patient population and anatomies.

- Workflow automation tools include Auto Tracking, Auto Protocol Assist, Auto Field of View, Auto Quality Assurance, QuickCharge, QuickShare, and QuickConnect..

- Overhead Tube Suspension with motorized movement delivers excellent levels of operational support designed for efficient operation and precise positioning.

[1] Compared to the X-ray system in scan mode.
[2] Data on file.
*Definium 646 HD is a commercial configuration of the Optima XR646 HD.

Contributing to a healthier planet

More than half of the healthcare sector's climate footprint, approximately 53%, is attributable to energy use.[3] As a result, we have strengthened our commitment to environmentally conscious design and 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 and remote predictive and maintenance 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.

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.

Recyclable	80% of materials used in the system are eligible to be recycled.[4]

Reduce the use of hazardous substances	EU RoHS directive 2011/65/EU
	REACH (EC) 1907-2006

Manufacturing

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

Renewable energy	Native digital X-rays outperform film in image quality so that the need for water and chemicals used in producing print films has been eliminated.

[3] Health care climate footprint report | Health Care Without Harm (noharm-uscanada.org)

[4] Data on file.

Packaging

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

Improved packaging	Packaging has been reduced from 4 boxes to 1 reusable box to reduce waste. A reusable metal buckle is used to fasten the wood-box packaging instead of nails, making it easier to open.

Product utilization

Our imaging products are designed to help enable energy efficiency through dedicated features and advanced applications to reduce the environmental impact.

Patient setup and positioning	Elevating tables equipped with motion control, auto tracking, patient safety, and foot pedal.
	Elevation time (minimum to maximum): ≤18 seconds
	Auto Image Paste includes imaging of the spine for scoliosis evaluation and imaging of the legs for orthopedic evaluations.
	A patient stand with screen helps keep the patient comfortable during acquisition.
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	Reduce energy consumption by 50% using standby mode when the system is idle.[5]
Power consumption	Standby (no scan): 1.0 kVA Scan mode: 112 kVA (momentary) 2.2 kVA (continuous)

[5] Compared to the X-ray system in scan mode.

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 partnered support for upgrades and services throughout a product's lifespan 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 rest are returned to dedicated recycling facilities.

Guidance for end of lifecycle	Equipment instructions are provided to minimize the environmental impact for disposal or recycling.
Upgrades	Hardware and software options are provided as a solution to extend the product lifespan.
Parts harvesting and refurbishment: options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions.	X-ray 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.[6]
	94–96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product.[6]
Waste reduction	This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

[6] Products 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. Data on file.

Digitizing healthcare through transformative innovations for a 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.

Advancing clinical 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.

Help improve patient outcomes with improved image quality	Helix 2.0 advanced image processing leverages artificial intelligence (AI) in image quality to deliver sharp detail and consistent performance in X-ray—despite variations in exposure technique and challenging exam conditions.
	Dual energy subtraction eliminates obstructions from overlying bones while providing additional information on calcifications in chest and abdomen studies.
	Auto Image Paste enhanced with AutoSpine is an intelligent pasting algorithm that follows the contour of the spine for vertical equalization—enabling a natural balance of brightness and contrast along the patient body.
Drive advancements with precision health	Utilize Critical Care Suite, our on-device AI algorithm for detection of critical conditions such as pneumothorax on chest X-rays with high accuracy (AUC 0.96).

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

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

Auto Protocol Assist eliminates the user steps required to select patient exam types and initiate an exam.

Repeat and Reject Analysis is an automated quality assurance tool that allows for repeat or reject images to be captured and categorized by the technologist.

Auto Field of View enables the user to predefine the collimation size on an individual view basis.

Vertical tracking to align with wall stand detector and maintain table SID.

Optimizing imaging operations (Cont.)

Increase productivity and consistency (Cont.)

Quality Care Suite with AI-driven Intelligent Field of View detects when a lung field is clipped in a frontal chest X-ray and allows the radiographers to determine if a repeat is required before sending the image to PACS.

X-ray Quality App is an analytics application that provides the collection, aggregation, and visualization of dashboards that allow radiology department managers and lead technologists to gain insights into their X-ray image reject rates, their reasons, and how they evolve over time.

Reduce downtime

Remote system connection, diagnosis, and repair with iCenter™ asset management, OnWatch™ proactive monitoring, and inSite™ remote connectivity enable our service team to monitor your system usage and status remotely, saving significant travel time and energy expenditure.

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, all while achieving similar or improved outcomes.

Reduce setup time	Image Rotate and Auto Advance eliminate more than 70,000 clicks per year.[7]
Reduce exam time	5 seconds or less between 2 consecutive X-ray exposures.[8]
	24% reduction in exam time with AutoGrid™[9]

Ease of use	RFID badge swipe provides a 90% time savings at log in.[10]
	Images can be produced with as little as half the dose of traditional computed radiography, cassettes, and other flat panel detectors with lower DQE.
	QuickShare enables FlashPad HD detectors to be shared across compatible systems within the healthcare facility by all users.
	QuickEnhance is a simple 1-touch image reprocessing that supports line and tube placement verification.
	Auto Protocol Assist matches procedure codes from Worklist to select anatomy technique.
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.

[7] GE Healthcare data on file and the SIIM 2009 conference presentation
     https://www.researchgate.net/publication/337911448_Leveraging_Deep_Learning_Artificial_Intelligence_in_Detecting_the_Orientation_of_Chest_X-ray_Images
[8] Enabled by operation interface specs. Data on file.
[9] E bench testing, White Paper, GE Healthcare's AutoGrid Software (JB77154XX)
[10] AMX 240 Data Sheet, Operator Manual, data on file.

Building a healthy world to help enable better patient outcomes.

GE Healthcare is a member of COCIR, the European Trade Association representing the medical imaging, radiotherapy, health ICT, and electromedical industries.**

**https://www.cocir.org/about-cocir/members.html
Not all products or features are available in all geographies. Check with your local GE Healthcare representative for availability in your country.
Not all features are included in the standard system configuration. Check with your local GE Healthcare representative.