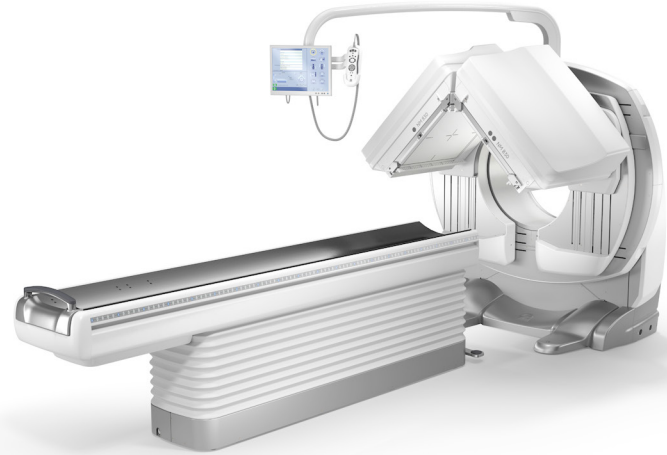
Sustainable molecular imaging solutions for a resilient tomorrow

NM 830



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.

NM 830 helps create a resilient tomorrow.

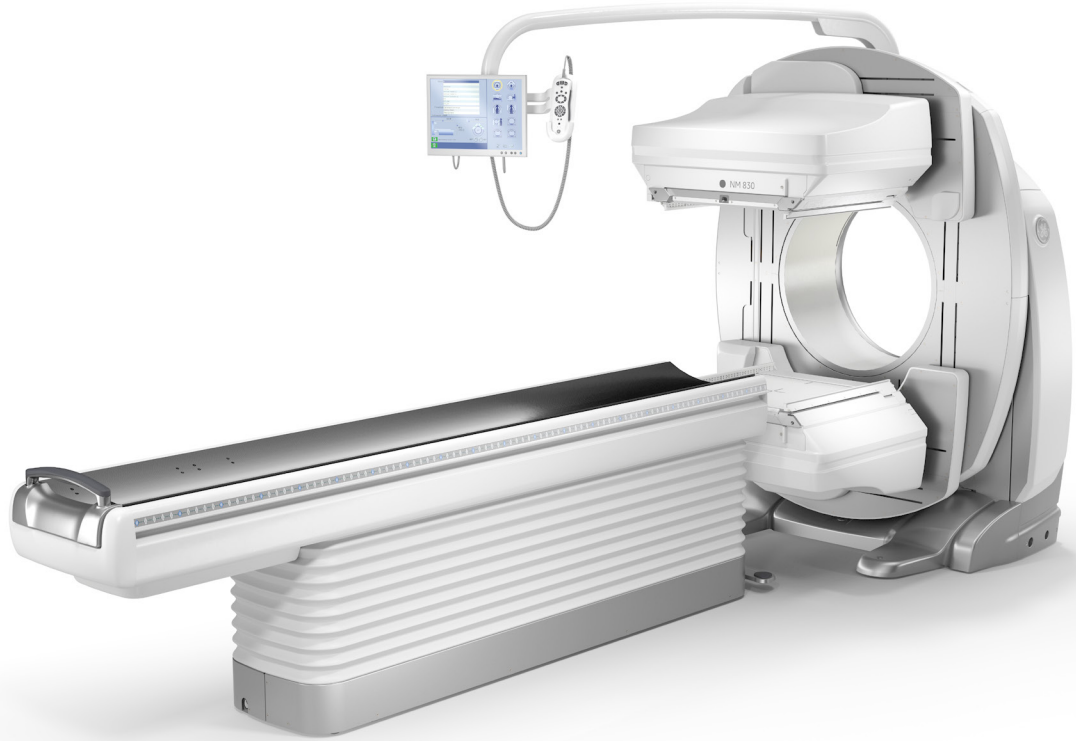
Our NM 830 SPECT system and its services help ensure that radiology professionals and the patients they serve have the technology necessary to create a sustainable and resilient tomorrow.

Reducing environmental impact

- 94% of materials used in the system are recyclable.
- Compliance with IEC60601-1-9: Requirements for Environmentally Conscious Design
- Parts eligible for harvesting
- Waste management (WEEE passport)

Improving outcomes

- Provide shorter, more tolerable exams with Evolution technology.[1]
- Diagnose disease earlier with SwiftScan Planar and SwiftScan SPECT's improved small lesion detectability.[2]
- Enable reduction of dose or scan times with SwiftScan Planar and SwiftScan SPECT.[3]
- Improve workflow and process for patients and staff.



[1] In clinical practice, Evolution options[1a] (Evolution for Bone, Evolution for Cardiac, Evolution for Bone Planar) and Evolution Toolkit[1b] are recommended for use following consultation of a nuclear medicine physician, physicist, and/or application specialist to determine the appropriate dose or scan time reduction to obtain diagnostic image quality for a particular clinical task, depending on the protocol adopted by the clinical site.

[1a] Evolution Options—Evolution claims are supported by simulation of count statistics using default factory protocols and imaging of 99mTc based radiotracers with LEHR collimator on anthropomorphic phantom or realistic NCAT—SIMSET phantom followed by quantitative and qualitative images comparison.

[1b] Evolution Toolkit—Evolution Toolkit claims are supported by simulation of full count statistics using lesion simulation phantom images based on various radiotracers and collimators and by showing that SPECT image quality reconstructed with Evolution Toolkit provides equivalent clinical information but better signal-to-noise, contrast, and lesion resolution compared to the images reconstructed with FBP / OSEM.

[2] As demonstrated in phantom testing using a model observer. For SPECT, compared to using the LEHR collimator and a SPECT Step and Shoot acquisition. For Planar, compared to using LEHR without Clarity 2D.

[3] Compared to LEHR collimator, with Step & Shoot scan mode (for SPECT) / without Clarity 2D (for Planar). As demonstrated in phantom testing using a bone scan protocol, Evolution processing (for SPECT), and a model observer.Because model observer results may not always match those from a human reader, the actual time/dose reduction depends on the clinical task, patient size, anatomical location and clinical practice. A radiologist should determine the appropriate scan time/dose for the particular clinical task.

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 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.
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)

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	We're committed to high recyclability of our products and reuse when possible.
	Materials are recycled according to the WEEE Passport.
	94% of materials used in the system are recyclable.
Reduce the use of hazardous substances	Large Scale Fixed Installation per RoHS (II) 2015

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 is a mixture of wood and corrugated cardboard. The package is fully recyclable.

Product utilization

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

Ergonomically designed

Patient setup and positioning	Touch Ruler sets your scan range with a simple touch of the bedside ruler.
	Automatic Positioning delivers easy setup.
	Automatic Body Contouring is in all procedures.
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	System features standby mode for nuclear medicine gantry.
Power consumption	Standby: 0.9 kW Idle (no scan): 1.5 kW NM scan mode (data acquired during table motion): 2.1 kW NM scan (NM scan running, Rotation moving to next step): 3.8 kW

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.

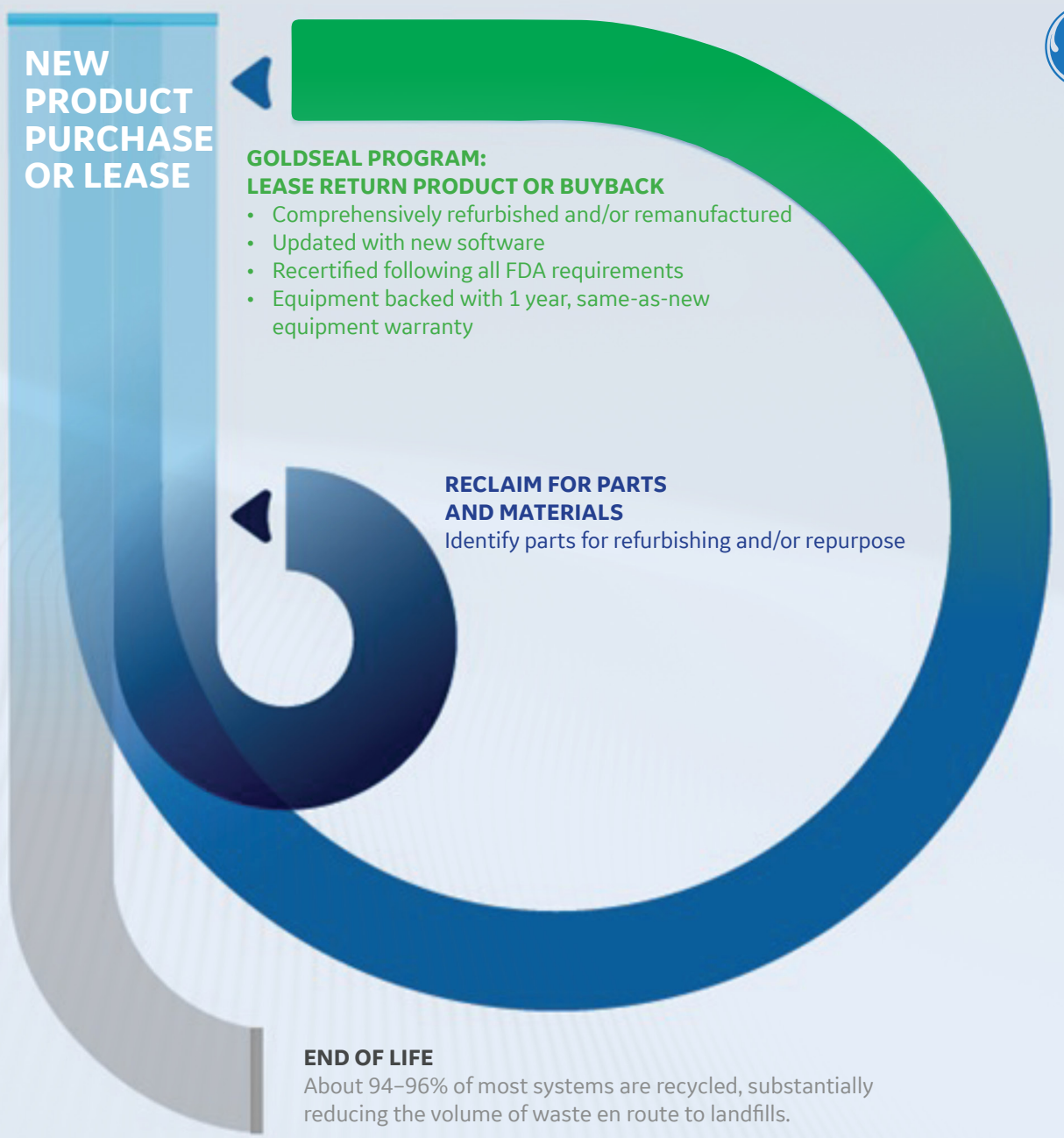
Our refurbishment programs involve an extensive inspection and testing process, designed to bring equipment back to its original certified manufacturing specifications. If the system is not suitable for refurbishment, eligible parts are harvested for reuse after quality and performance testing, while 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.
Hardware and software upgrade options are provided as a solution to extend the product lifespan.	With low total cost of ownership and straightforward upgrade paths to more advanced capabilities, this system is the foundation of our general purpose nuclear medicine portfolio.
Parts harvesting and refurbishment options are provided to reduce waste and environmental impacts while extending imaging access to less advantaged regions.	SPECT 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.[5] 94–96% of most systems are reused, refurbished, or recycled, extending the lifetime of each product.[5]
Waste reduction	This system is in accordance with Waste Electrical and Electronic Equipment (WEEE) regulations.

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



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.

Gain actionable clinical insights quicker for earlier diagnosis	Advanced features are expected in a premium dual-head SPECT system, delivering exceptional image quality with faster scan time: 25% reduction with SwiftScan.[6]
Help improve patient outcomes with improved image quality	Help diagnose disease earlier with SwiftScan Planar and SwiftScan SPECT's improved small lesion detectability.[7]

[6] NM 830 dose/time reduction: Compared to LEHR collimator, with Step & Shoot scan mode (for SPECT) / without Clarity 2D (for Planar). As demonstrated in phantom testing using a bone scan protocol, Evolution processing (for SPECT), and a model observer. Because model observer results may not always match those from a human reader, the actual time/dose reduction depends on the clinical task, patient size, anatomical location, and clinical practice. A radiologist should determine the appropriate scan time/dose for a particular clinical task.

[7] As demonstrated in phantom testing using a model observer. For SPECT, compared to using the LEHR collimator and a SPECT Step & Shoot acquisition. For Planar, compared to using LEHR without Clarity 2D.

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	Post-processing and review is with Xeleris™ V, including AI-powered applications, which allows access from anywhere in hospital or from home—a scalable enterprise solution.
Reduce downtime	Smart QC boosts system uptime.
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	Touch Ruler sets your scan range with a simple touch of the bedside ruler.
	Automatic Positioning delivers easy setup.
	Automatic Body Contouring is in all procedures.
Reduce exam time	Provide shorter, more tolerable exams for greater patient comfort with Evolution technology.[8]
Ease of use	Leverage remote collaboration, simplified workflows, and an easy-to-use user interface.
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.

[8] In clinical practice, Evolution options[8a] (Evolution for Bone, Evolution for Cardiac, Evolution for Bone Planar) and Evolution Toolkit[8b] are recommended for use following consultation of a nuclear medicine physician, physicist, and/or application specialist to determine the appropriate dose or scan time reduction to obtain diagnostic image quality for a particular clinical task, depending on the protocol adopted by the clinical site.

[8a] Evolution Options—Evolution claims are supported by simulation of count statistics using default factory protocols and imaging of 99mTc based radiotracers with LEHR collimator on anthropomorphic phantom or realistic NCAT—SIMSET phantom followed by quantitative and qualitative images comparison.

[8b] Evolution Toolkit—Evolution Toolkit claims are supported by simulation of full count statistics using lesion simulation phantom images based on various radiotracers and collimators and by showing that SPECT image quality reconstructed with Evolution Toolkit provides equivalent clinical information but better signal-to-noise, contrast, and lesion resolution compared to the images reconstructed with FBP / OSEM.

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.[9]

[9]*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.

JB21283XX