



Sustainability in radiology: Contributing to a healthier planet and healthier lives

Taking urgent action to combat climate change is everyone's responsibility. Human influences are the number one cause of global warming, especially the carbon pollution caused by burning fossil fuels.¹ Tackling climate change will require working toward shared goals, such as developing solutions to decarbonize infrastructure and reduce power consumption.

Countries and organizations around the globe have committed to these efforts. The Paris Agreement, a landmark global commitment to the environment, brings together 196 parties, all working towards the common goal of combating climate change. "The Race to Zero," backed by the United Nations, is another global campaign that aims to rally leadership and support from businesses, cities, regions, investors, and other institutions to achieve net zero carbon emissions by 2050. With these combined efforts, experts believe that real progress can be made.

While differing in scale, each nation's health sector contributes to global climate emissions while delivering care and procuring products and technologies from a carbon-intensive supply chain.² In fact, according to "Health Care's Climate Footprint

Report," 4.4 percent of global climate emissions come from healthcare-related activities, such as carbon emissions through energy consumption via transport and products' manufacturing, use, and disposal.³

For this reason, the healthcare sector must engage in sustainability efforts as well. Working together, the global healthcare industry can reduce energy use and adopt environmentally friendly initiatives that contribute to a healthier planet and healthier lives.

"GE Healthcare has committed to global sustainability initiatives that will help reduce our industry's carbon emissions," said Kelvin Sanborn, ESG Program Leader at GE Healthcare. "Working together with our industry partners and customers, we can reduce our carbon footprint while continuing to improve diagnostics, precision care, and access with innovative imaging technology."





GE Healthcare is an active participant in “The Race to Zero” and is committed to reducing its greenhouse gas emissions and promoting sustainable development. The company has set a goal of achieving a 50 percent reduction in operational emissions by 2030 and reaching net zero emissions by 2050.

Designing environmentally conscious imaging equipment for a sustainable future

Developing more environmentally conscious radiology practices can have a substantial impact on reducing healthcare’s overall footprint. Radiology departments consume a considerable amount of energy due to the use of energy-intensive equipment, such as computed tomography (CT) scanners, magnetic resonance imaging (MRI) systems or interventional suites.^{4,5} Recognizing this, the radiology industry and industry partners like GE Healthcare are taking the opportunity to address and improve the environmental impact of medical imaging and to develop medical imaging products with new innovations and environmentally conscious manufacturing processes. Specifically, GE Healthcare is working on:

- Implementing sustainable practices across manufacturing, sourcing, distribution, installations, and service operations
- Designing environmentally conscious equipment
- Improving energy efficiency
- Optimizing the use of limited or rare materials
- Providing digitally enabled solutions and maintenance services throughout the product lifespan

Additionally, hospitals can contribute to expanding circular economy programs by refurbishing or recycling their systems at the end of product life to avoid waste and enable increased access to care with refurbished systems. GE Healthcare supports this goal by working with customers to evaluate

existing MRI, CT, and positron emission tomography (PET) systems at the appropriate time in the product life cycle for refurbishment, harvesting, or recycling.

Circularity also applies to extending the life of existing systems, for example, employing software updates and minor hardware upgrades to bypass the need for brand new machines. Two such unique opportunities are available in MRI, where the latest in artificial intelligence (AI) applications can improve clinical capabilities through a **software upgrade** that can allow for sharper image quality and shorter scan times for existing systems. Radiology departments can also **widen the bore** from a narrow 60 cm to 70 cm on their existing MRI system through a hardware upgrade, gaining the opportunity to accommodate larger patients, as well as those patients who may have opted for a wider bore MRI experience through another provider. The larger bore enables widening the cross-section by 36%, which gives patients extra room during their scan and, with feet-first scanning, can reduce claustrophobia rejection rates by 90% while boosting comfort and patient satisfaction.*

Addressing the design of medical imaging products for optimization across the complete product lifecycle not only enables improved durability and utilization, but also promotes longer product lifecycles, reduced waste, and improved access to the latest clinical innovations.

Increasing sustainability in radiology departments

While industry partners are working to reduce healthcare’s climate footprint on the healthcare supply chain side, radiology departments in hospitals and health systems are also working toward similar goals. More than half of the healthcare sector’s climate footprint—approximately 53 percent—is attributable to energy use.⁶ Radiology departments are working to reduce indirect emissions from electricity, cooling and heating systems, and other energy consumption within the department. Some examples include:

- Reducing energy consumption by using the imaging systems’ low power mode during off-peak hours

- In certain situations, exam room temperatures can be raised to minimize energy consumption by HVAC systems while staying within the operating specifications for the equipment. The National Health Service (NHS) in the UK estimates that health systems can save 50,000 tons of CO2 per year by adjusting thermostat temperatures by just one degree Celsius.⁷

Radiology departments can leverage digital innovations to streamline workflow and operations and also reduce energy consumption and emissions from commuting between sites and servicing equipment. Data analysis can help optimize system utilization, and radiology administrators can leverage more remote servicing and monitoring options, as well as remote training for staff—eliminating the need for traveling between sites and more frequent service calls.

Achieving lasting sustainability for a brighter future

As a leader in the healthcare industry committed to tackling some of the world's biggest challenges, GE Healthcare is dedicated to its global sustainability initiatives. While the company works toward carbon neutrality, it's also partnering with other industry leaders on additional environmental goals, such as the Science Based Targets initiative (SBTi)—a group of visionary corporate leaders taking ambitious climate

action. GE Healthcare is working on these environmental and sustainability efforts in tandem with creating diagnostic **imaging innovations** that support precision health, healthcare digitization, and increased access to care.

With a continued effort to make improvements that support sustainability—from manufacturing to transport to technological solutions—the healthcare industry is sharpening its focus on reducing its environmental impact on the planet. Working together, this industry can leverage significant changes that lead to a sustainable future.



Disclaimers

Not all products or features are available in all geographies. Check with your local GE Healthcare representative for availability in your country.

*GE Healthcare data on file. Claustrophobia rate comparison head-first/feet-first

Sources

¹ <https://www.un.org/en/climatechange/what-is-climate-change>

² <https://www.noharm-uscanada.org/issues/global/climate-change-opportunity-action>

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

⁴ <https://www.rsna.org/news/2021/august/Impact-On-The-Environment>

⁵ L. Büttner, H. Posch, T.A. Auer, M. Jonczyk, U. Fehrenbach, B. Hamm, H.C. Bauknecht, G. Böning, *Switching off for future—Cost estimate and a simple approach to improving the ecological footprint of radiological departments*, European Journal of Radiology Open, Volume 8, 2021, 100320, ISSN 2352-0477, <https://doi.org/10.1016/j.ejro.2020.100320>.

⁶ https://noharm-global.org/sites/default/files/documents-files/5961 HealthCaresClimateFootprint_092319.pdf

⁷ NHS-Carbon-Reduction-Strategy-2009.pdf (england.nhs.uk)



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