PHILIPS

MR Systems

Sustainability

Committed to a sustainable future

Innovating with purpose today to secure the future of all MR patients

Raising the bar to protect the world's limited resources

Philips has adopted ambitious goals to help mitigate climate change through the responsible use of energy and materials, and so leave a healthier planet for future generations. As a leading health technology company, it is our purpose to improve people's health and well-being through meaningful innovation. We aim to improve 2.5 billion lives, each year, by 2030.

Making the world healthier and more sustainable through innovation

Good health and wellbeing
Improving people's health and well-being, and expanding access to care for underserved communities

Responsible consumption and production
Ensuring sustainable use of materials and driving the transition to a circular economy

Climate action
Ensuring sustainable use of energy, reducing emissions, and operating carbon neutral

Since 2020, Philips has been **carbon neutral** in its operations (site, logistics, travel) and sources all its electricity from **100% renewable sources**

When you choose to partner with Philips, you choose to partner with a company conscious of its own social responsibilities and one ready to help you grow your business and meet your sustainability ambitions.

Minimizing MR's environmental impact

The manufacture and use of our products accounts for 97% of our total environmental impact. That's why we design with a vision to drive value from a circular economy and are continuously working to improve energy efficiency, upgradability, serviceability, refurbishment, and recyclability across the product lifecycle.

We are consciously developing our MR solutions by mindfully sourcing and effectively using safe materials. We pursue sustainability in all aspects of product creation by avoiding the use of hazardous substances, and reducing the use of scarce resources, materials, and packaging in our products – all to help reduce our environmental impact and carbon footprint.


" When it comes to making the world healthier and more sustainable, there is simply no time to lose."
Frans van Houten, CEO Philips

Environmental benefits

100% product take-back after customers' acceptance of our trade-in offer.

100% responsible repurposing of the equipment returned to Philips

On average, 80% of system material weight is reused during MR refurbishing[1]

Our journey to helium-free operations

Helium is one of our planet's most naturally abundant gases, yet like fossil fuels, its supply is limited. Moreover, just a handful of countries actually capture, store, and sell helium before it escapes back into the atmosphere. So, not only is it a finite resource, but high demand and supply chain uncertainties make it a scarce commodity.

One of the largest uses for helium today is in science and healthcare. In fact, worldwide, MRI scanners alone are responsible for 20% of helium consumption. In the USA, the figure is as high as 31%.[2]

Today's MRI scanners feature magnets that are not fully sealed, allowing some helium to escape. On average, these systems lose around 300 liters each year. This not only means that radiology departments must frequently replenish their helium supply, but they must also deal with the accompanying logistical challenges.

For example, to comply with helium-safety protocols, piping must be fitted that will vent the helium outside the building and away from patients and staff in the event of a magnet quench. Fulfilling this requirement frequently entails costly floor/ceiling adaptations and extensive planning.

Based on discussions with customers and our vast experience in the field, we are aware of the potential negative operational and financial effects managing helium supply has on healthcare providers. Creation of a viable alternative is therefore necessary to assure future sustainability.

Introducing BlueSeal

Philips BlueSeal is a fully sealed magnet designed to simplify your MR installation, reduce lengthy and costly disruptions in your MR services, and help your department transition to sustainable helium-free operations. In contrast to classic magnet technology, which requires approximately 1,500 liters of liquid helium for cooling during operation, Philips BlueSeal uses new, highly efficient, micro-cooling technology which requires just 7 liters of liquid helium for cooling (<0.5% of today's volume[3]).

The small amount of liquid helium is placed in the magnet during manufacturing and fully sealed, enclosing the coolant for the rest of its life. Due to the magnet being sealed, no liquid helium can escape. This reduces potential issues and eliminates helium refill costs during the magnet's lifetime, thereby minimizing the consumption of this scarce resource.

Philips BlueSeal MR system maintains the same state-of-the-art operating capabilities of our traditional systems, with the added benefits of sustainable technology.

Classic magnet technology ~1,500 liters of liquid helium

BlueSeal micro-cooling technology ~7 liters of liquid helium

" We won't have any problems of refilling during the machine's lifetime and we can forget about the helium. This will save us money and help us be more environmentally friendly"

Dr. María del Mar Travieso, Head of Radiology Department, Hospitales San Roque, Spain

Choosing Philips' BlueSeal reduces the need for **>4,000 L helium** over the lifetime.[4]

BlueSeal benefits:

- The BlueSeal magnet requires only 0.5% of helium compared to a conventional Philips MR system[3]
- Decrease Helium-related CO_2e emissions with 5.1 ton per customer[5]
  The CO_2e impact of producing this amount of helium is equal to the annual uptake of approximately 150 trees[6]
- Because no liquid helium can escape[7], the BlueSeal magnet does not need a vent pipe
- 70% fewer helium-related interruptions[8]
- With a minimum siting requirement of 3,700 kg, the BlueSeal system is around 900 kg lighter than its predecessor[3]
- PowerSave low energy scanning modes reduce energy consumption
- EasySwitch allows for easy ramp-down and ramp-up to accommodate emergency situations.

Forget about helium

Easy siting

Towards uninterrupted MR

High performance by design

With hundreds of BlueSeal magnets in operation worldwide, our focus is on expanding this breakthrough technology to our entire portfolio in 2025+, supporting uninterrupted MR operations and providing clinicians with high diagnostic quality to make the right decisions in every defining moment.

A comprehensive and sustainable approach

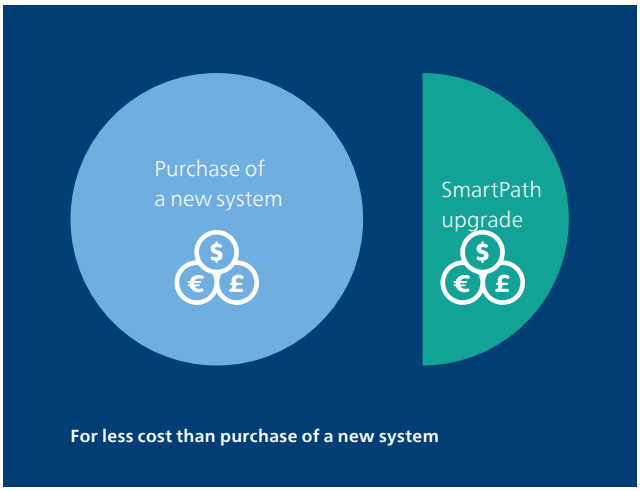
Every aspect of the new BlueSeal magnet has been designed to relieve you from helium-related complications – helium loss, siting difficulties, associated maintenance costs, and unpredictability. Furthermore, the magnet offers a leading and a wealth of new clinical capabilities that help you answer the most challenging demands.

> " Whether we discuss waste recycling or a major new investment like an MRI from Philips, we have to take the agenda of sustainability from theory into practical life in our day-to-day operations."
>
> *Mr. Michael Kirkegaard, CEO, Aleris-Hamlet Hospital, Copenhagen, Denmark*

A sustainable lifecycle

You are under tremendous pressure to hold costs down while delivering exceptional patient care. As a result, radiology departments work toward keeping and maintaining existing medical equipment. Philips SmartPath enables to upgrade your current equipment to the latest Philips MR technology in a practical, cost-effective, and sustainable way – to maintain your long-term success. Keep up-to-date with the newest functionalities, trade-in outdated systems, and extend the lifetime of your equipment.

With this program, you completely renew your trusted MR system, just as if you had purchased a new one. Furthermore, it alleviates the delays and expense of installing a new magnet. When you convert your system instead of buying a new one, you also make the sustainable choice by saving the CO_2 output and energy usage required to manufacture a new magnet, and limiting the cost of transporting, lifting and installing that magnet.



SmartPath enables you to...

Optimize

Keep equipment up-to-date. Maintain high quality performance over the long term through regular and ongoing updates and improvements.

Enhance

Add functionality. Enhance or expand your clinical capabilities and workflow efficiency and adopt new ways of working. Attract more patients and qualified staff and open doors to new service lines/revenue streams.

Transform

Extend lifetime of equipment. Transform your facility with next generation solutions that may reduce disruption, through an easy and economical upgrade path.

Trade-in

Trade-in outdated systems. Replace your current system with a new or refurbished system at attractive financial terms.

Substances statement

We require our suppliers to conform to the Philips Sustainability Agreement, which includes the Royal Philips Regulated Substances List (RSL) for products. The RSL includes substances banned by law or by Philips polices and declarable substances such as REACH substances of very high concern. Philips uses the online tool BOMcheck to collect material declarations from suppliers. BOMCheck is aligned with the IEC 62474 database of restricted and declarable substances and the IEC 62474 screening of REACH Candidate List Substances. A list of Philips Regulated Substances can be found here: https://www.philips.com/a-w/about/sustainability/downloads.html

Halogenated flame retardants

All our electronic products may contain halogenated flame retardants to meet fire safety standards. However, Philips is also committed to reducing the amount in our products. Suppliers are required by the Philips Sustainability Agreement to provide components and products conforming to the Philips Regulated Substances list, which restricts certain flame retardants (e.g. PBDE and PBB due to RoHS, HBCDD due to EU POP legislation, TCPP and TCEP due to US CPSIA act) and requires declaration of some flame retardants, e.g. TBBPA. Declarable flame retardants will be phased out when technologically and economically feasible.

PVC and Phthalates

Products produced by Philips may contain polyvinyl chloride (PVC) as cable housing, and other product components, or as an additive or a contaminant to other plastics. The RoHS phthalates, DEHP, DBP, BBP, DiBP, are phased out per legal date July 2021. Packaging suppliers are required by the Philips Sustainability Agreement to provide all packaging materials containing less than 1000 ppm (0.1%) polyvinyl chloride (PVC) and PVC blends. The product labeling does indicate PVC/DEHP content if applicable.

Biocides and Bisphenol-A (BPA)

Medical devices are generally exempted from biocides but Philips does not intentionally add biocides to its products. BPA is not intentionally added to our products either although polycarbonates and epoxy materials present in our products can contain traces of the BPA precursor that is used to make these materials.

Circular readiness

Traditionally society uses resources in a linear fashion – we take raw materials, make something, use it, and throw it away. Alternatively, in a circular economy, there is a seamless flow where components and materials are fed back into the system. At Philips we are fundamentally redesigning our products and business models to be less reliant on natural resources.

Central to our concept of sustainability is a design philosophy that focuses on product circularity. Our MR systems have been optimized for durability, upgrading, repair, serviceability, refurbishing and/or remanufacturing, and recycling.
By extending the life of a system we can reduce waste and minimize environmental impact.

By applying state-of-art refurbishment and/or remanufacturing processes, Philips transforms pre-owned medical equipment into high-quality Circular Edition systems. These systems offer same-as-new quality and performance, and come with the same warranty, service, and training, as any new Philips system. With increasing pressure on healthcare spending, it is a cost-effective solution that offers a better return on investment.

The same-as-new quality of our MR circular systems is ensured by our 7-step rigorous and high standard OEM refurbishment and/or remanufacturing process. This consists of 320 hours of work in which obsolete or defective parts are replaced with original Philips components. With our circular innovations, 80% of the average weight[1] of a returned MR system is reused, reducing the need to extract virgin materials and empowering a circular economy.

Step 1
Cleaning and disinfection

24 hours

Step 2
Cosmetic refurbishment

64 hours

Step 3
Disassembly and component testing

64 hours

Step 4
Component refurbishment and replacement

80 hours

Step 5
System upgrades

8 hours

Step 6
Custom configuration

24 hours

Step 7
System performance testing

65 hours

25+ years experience

Circular economy

Traditionally, society uses resources in a linear fashion - we take raw materials, make something, use it, and throw it away. However in a circular economy there is a seamless flow of material where components and materials are repeatedly fed back into the system. Therefore, Philips aims to keep its products, components and materials at their highest utility and value throughout their lifespan by transforming pre-owned systems into high quality solutions, recovering parts and recycling.

Toward a sustainable future

At Philips, we invest in technologies that enable you to contribute to a healthier world by choosing sustainable products. As partners we can take action to continuously reduce the environmental impact of our operations and support healthy ecosystems.

1 Based on the average weight re-use percentage per system for Philips MR circular systems in 2020.
2 JR Campbell & Associates; USGS.
3 Compared to the Ingenia 1.5T ZBO magnet.
4 Compared to Philips conventional systems, with average annual refilling over a 10yr lifetime.
5 Compared to Philips conventional systems, over a 10yr lifetime. The helium related CO_2 emissions are calculated with LCA ReCiPe2016 and ecoinvent3.6 database
6 The selected tree is a 35yr old Oak tree (Quercus Prinus).
7 Even in the rare case of the magnet becoming unsealed, the negligible amount of helium escaping would not materially affect the oxygen level within the room.
8 Compared to a conventional Philips MR system, based on service data on loss of field between ZBO and BlueSeal magnets. Results may vary.

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