



# Imagine Now & Next

## Sustainable MRI amid the global energy crisis

Hospitals all over the globe rely on magnetic resonance imaging (MRI) to diagnose a wide range of diseases and to monitor patients' treatment progression. This non-invasive method uses strong magnetic fields, field gradients and radio waves to generate high quality contrast images, enabling a detailed view of the organs, tissues and the skeletal system. Unfortunately, this technology consumes a tremendous amount of electricity – around 0.5 to 30 kWh [per examination](#) – which is becoming an increasingly significant issue in today's energy crisis. Many healthcare providers are worried that this indispensable imaging technique will no longer be affordable – a situation that would be devastating for patient care. Luckily for doctors and patients alike, there are ways to reduce the power consumption by using MRI scanners that have been optimised to minimise their energy use.

### Soaring energy prices

Current unrest around the world has resulted in exorbitant energy prices, and hospitals across Europe are now paying an average of [7€ more per MRI examination](#) compared to previous years. In addition, just keeping the equipment running has become [18 per cent](#) more expensive than before and, as many facilities are already on a very tight budget, this increase is causing a lot of concern in the healthcare industry.

### Pinpointing the source

To tackle this, it is firstly important to understand why MRI scanners use so much power, and this largely depends on the way the magnetic field is generated. The most common MRI scanners used in healthcare are based on superconducting magnets that have to be cooled to a temperature below 10 K to be able to create a field strong enough for this application. This requires a large amount of helium that must be kept cold at all times, which means that the scanners draw a significant amount of power even when they are not in use.

### Energy-efficient superconducting MRI

FUJIFILM Healthcare Europe has always been at the forefront of medical technology, empowering healthcare organisations by providing cutting-edge imaging tools. High-end modern Fujifilm MRI scanners come with both a power saving and a standby mode, helping to reduce energy consumption by up to [17 per cent](#) in operation, and using minimal power when the instrument is passive. On top of that, these cleverly designed systems are made in a way that ensures zero boil-off, allowing normal operation without needing to top up the helium, which is another significant issue because of the global scarcity of helium. According to 'The Impact of Selling the Federal Helium Reserve', a study by the National Electrical Manufacturers Association (NEMA), MRI machines require 7,000 tons of

helium every year which corresponds to 27 per cent of the US reserve. This really is quite shocking when you consider that the US has more helium than any other country.

### **Permanent magnet MRI**

Energy use can be further decreased by choosing an MRI scanner that uses a strong permanent magnet to create the magnetic field necessary for imaging. These systems don't need cooling which saves both power and helium. The Fujifilm scanners based on this technology therefore need only a [9.5 kVA power supply](#) and have a maximum power consumption of 5 kW, using no energy at all when switched off.

### **Help where help is needed**

Fujifilm keeps environmental issues close to its heart and the company has been constantly striving to make its products as sustainable as possible. This has led to the development of several high quality MRI scanners that consume less power, and go some way to helping hospitals stay afloat in this global energy crisis.

### **About FUJIFILM**

FUJIFILM operates over 50 group companies and branches in Europe and is engaged in R&D, manufacturing, sales and service, with FUJIFILM Europe GmbH, located in Düsseldorf, Germany. The company operates as the strategic headquarters for the region. Throughout Europe, FUJIFILM entities serve a range of industries including medical technology, biopharmaceuticals, electronic materials, industrial products, chemicals, graphic systems, optical devices, data storage and all aspects of photography. Over the last 20 years, the company has intensively focused on healthcare – from diagnosis to prevention and treatment. On March 31 2021, FUJIFILM Healthcare Europe, then known as Hitachi Medical Systems Europe, became part of the FUJIFILM group. FUJIFILM Healthcare Europe is

a first-choice supplier of open and powerful high-field MRI systems, multi-slice CT systems as well as medical ultrasound devices in all kinds of clinical applications. Together with FUJIFILM Medical Systems Europe, FUJIFILM Healthcare Europe is working side by side, acting as a one stop medical imaging partner that creates new value and contributes to the development of medical care.

For more information about FUJIFILM Healthcare Europe, visit: <https://hce.fujifilm.com>

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