Sustainability for a Resilient Tomorrow


Portrait™ Mobile Monitoring Solution

GE HealthCare

Our commitment to the environment

GE HealthCare recognizes the relationship between a healthy environment and healthy people. Climate change affects the social and environmental determinants of health, including clean air, safe drinking water, sufficient food, and secure shelter. It is our responsibility to intensify our actions to further reduce our emissions. GE HealthCare has set two greenhouse gas (GHG) emissions reduction goals:

- By 2030, reduce operational emissions by 50% compared to a 2019 baseline.
- By 2050, achieve net zero emissions.
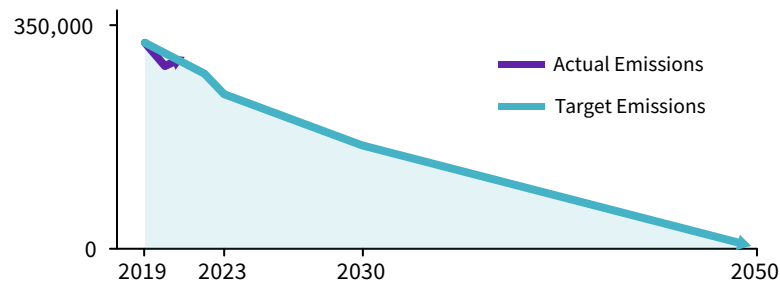
Designing for the sustainability

Following industry standards

To achieve GE HealthCare's goals for emissions reductions, **environmental considerations are a key component to product design,** not an afterthought. In designing Portrait Mobile, a wireless, wearable, continuous monitoring solution, GE HealthCare engineers looked at technologies and approaches to minimize the environmental footprint of the solution without compromising the patient and clinician benefits. Two industry bodies that set standards were followed, the International Organization for Standardization (ISO) and International Electrotechnical Commission IEC). The Portrait Mobile solution meets the ISO 14001 standard which sets the criteria for an environmental management system and certification as well as the IEC 60601-1-9:2007 standard governing environmentally conscious design.

Making it more power efficient

More than half of the healthcare sectors climate footprint, approximately 53 percent, is attributable to energy use through the product lifecycle.[1] This reality was one of the driving forces for GE HealthCare engineers seeking to minimize the power consumption of the Portrait Mobile solution. By using state-of-the-art **low-power semiconductors**, combined with intuitive UI designs such as auto-dimming of the patient monitor screen and a **power reducing black background** visual layout, battery life was increased for clinical users while simultaneously reducing the CO_2e footprint over the system's life.

Optimizing telemetry to reduce landfill waste

Traditional cardiac telemetry monitors rely on single-use disposable batteries, contributing to landfill waste. Yet according to the American Heart Association, 29% of patients on cardiac telemetry monitors do not meet the guidelines for ECG-based telemetry.

Fortunately, respiratory rate monitoring, like Portrait Mobile's TruSignal RRdv™ technology, has been shown to be a leading indicator for patient deterioration in non-cardiac patients. And as an added benefit, Portrait Mobile's design incorporates rechargeable batteries, significantly reducing landfill waste.

By shifting non-cardiac patients on to Portrait Mobile, GE HealthCare helps eliminate thousands of AA batteries from being sent to landfills annually.[2]

Reduces **1,165** kgs of batteries in the landfill every **three years**[2]

250 AA batteries[2,3] versus 1 Portrait Mobile system
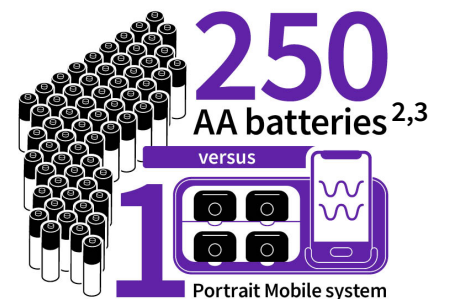
Optimizing hospital networks

Portrait Mobile leverages a hospital's existing Wi-Fi infrastructure and access points versus requiring the manufacturing and installation of dedicated access points, such as those in the 600 MHz and 1.4 GHz spectrum for traditional mobile monitoring systems. The result of this is not only a **less expensive deployment** for hospital systems, but also a **reduction in CO_2e and waste** through the avoidance of duplicative equipment.

CO_2e: Comparing the Portrait Mobile system to the Apple iPhone

While there are numerous elements of Portrait Mobile system's environmental impact, it may be easiest to compare the CO_2e with that of a commonly recognizable consumer product such as the Apple iPhone® mobile digital device.
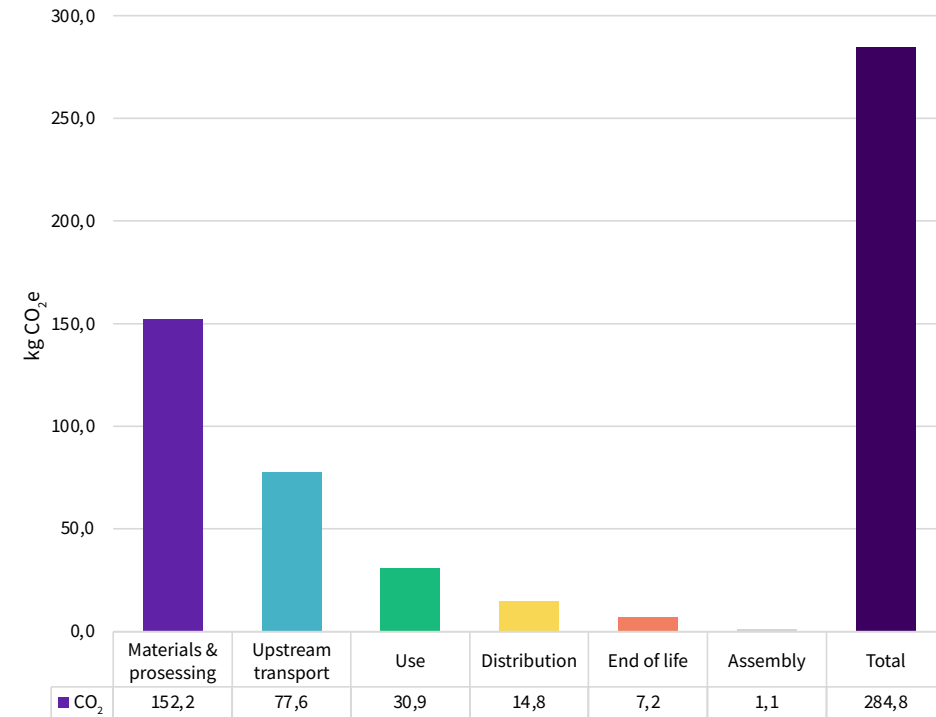
ScientiaMobile, a software company that tracks global smartphone usage, reports that the iPhone 11 is the most used phone globally.[4] When comparing the CO_2e for Portrait Mobile and the iPhone 11, Portrait Mobile has a CO_2e of 284.8 vs. the iPhone 11 of 77[5]. Thus the use of Portrait Mobile as a dedicated medical device for in-hospital use has the environmental footprint a little over 3.5 times that of a consumer's use of the iPhone.

Alternatively, continuous use of Portrait Mobile throughout its lifecycle is the equivalent of driving an average gasoline powered passenger vehicle 730 miles (1175 km).[6]

Driving a sustainable future

Environmental impacts of materials & processing

Lifetime CO_2e: Portrait Mobile Solution

kg CO_2e

	Materials & prosessing	Upstream transport	Use	Distribution	End of life	Assembly	Total
■ CO_2	152,2	77,6	30,9	14,8	7,2	1,1	284,8

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

2. Battery waste reduction based on 365 days of monitoring * 90% utilization * 24hrs / 95hrs of battery life avg = 82.98 battery changes * 2 AA batt * 48 beds in unit = 7,966 batteries per year.

3. Single AA battery weight of 24.7 g (0.9 oz). https://www.procell.com/wp-content/uploads/2023/02/Datasheet_Constant_AA_PC1500.pdf

4. https://www.scientiamobile.com/movr-mobile-overview-report/

5. iPhone 11 with 128GB storage. https://www.apple.com/environment/pdf/products/iphone/iPhone_11_PER_sept2019.pdf

6. https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references#miles

Creating a healthy world to help enable better patient outcomes.

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