

Clinical Evaluation



EnviroMedical is a sustainability solutions provider, serving the healthcare and life science sectors with innovative and practical solutions, addressing the specific challenges of these industries.

EnviroMedical Team consists of David Rossiter (founder and CEO), Antoine Abou Moussa (Co-founder & Waste Management Specialist) and Colman Campbell (Technical Manager & Energy Specialist) bringing with them more than 55 years of experience in environmental and waste management. Currently their services offer sustainable waste management, green anaesthesia, sustainable products and circular solutions.



David Rossiter

About HHI GreenTech in Healthcare

Health Innovation Hub Ireland (HHI) recognises the link between the health and wellbeing of individuals and the health and wellbeing of the environment. Climate change is a significant threat to public health, the health and human services system and the social determinants of health and wellbeing. HHI is committed to stimulating and supporting the development of innovative products and services that promote environmental sustainability in healthcare.



The field of green technology in healthcare is a continuously evolving group of methods and materials, from techniques for generating energy to the use of energy, production, direct patient care provision, lab services and ancillary activities - cleaning and decontamination, catering and waste disposal.

The Healthcare Challenge

Globally, healthcare contributes roughly 4–5% of all greenhouse gas emissions and the majority (around 85%) of non-hazardous general healthcare waste often ends up in landfills or incinerators. At the same time, hazardous clinical waste—about 15% of the total—poses infection and chemical risks. Within Ireland the hospitals generate approximately 17,000 tonnes per year of non-hazardous waste and up to 2,000 tonnes/year of clinical risk waste, with significant costs, misclassification, and lost recycling opportunities. Improving waste management therefore is not just a hygiene issue. It is essential to environmental protection and climate resilience.



The Health Solution

EnviroMedical addresses these environmental and climate challenges by offering sustainable PPE alternatives, optimised medical product decontamination, and waste-stream management systems. These solutions prioritise reuse, recycling, and resource recover- notably through their solutions for Flurane (F) gases capture and Nitrous dioxide destruction systems. EnviroMedical's offerings align with Ireland's national circular economy strategy and the Health Service Executive's (HSE) push for sustainable waste and climate neutrality by 2050.



HIHI Role

HIHI clinical and end user evaluations are at key product and market development stages to inform product application, provide end user assessments, market discovery and exploration. HIHI delivered two evaluation sessions for EnviroMed with expertise across biomedical engineering, anaesthesia and ICU. These assessed how the proposed NO₂ and F-gas capture technologies enhance safety, reduce greenhouse gas emissions and align with existing clinical and technical systems and the potential for integration into current workflows.



Outcome Report

Experts recognised strong alignment with Ireland's sustainability and circular economy goals.

F-gases: The anaesthetic F-gas capture system presents a viable technology, that is compatible with most of the major anaesthetic machines and compliant EU regulations.

Nitrous Oxide: The nitrous oxide destruction solution emphasised safety and integration. The system functions as a 'plug-and-play' that designed to protect both patients and staff from NO₂ exposure risks in theatres and ICUs.

Experts proposed initiating pilot projects to gather local data on clinical feasibility and sustainability outcomes. It was agreed that a structured pilot would offer a low risk pathway to validate the technologies within Irish healthcare and contribute to national and EU sustainability goals. Establishing clear operational ownership across clinical, technical, and facilities teams, engaging with the EPA on emerging EU obligations, and conducting full lifecycle impact assessments was also advised.

Testimonial

"Through the HIHI's expert sessions, we gained critical insights into safety, environmental performance and system integration. EnviroMedical values HIHI's rigorous, collaborative approach, which has significantly supported evidence generation and insights into sustainable innovation adoption in Irish healthcare"

David Rossiter,
Founder and CEO of EnviroMedical



HIHI (UCC) - HQ
Western Gateway Building
University College Cork
info@hih.ie
+353 (0)21 420 5560

HIHI (MTU)
CREATE Building
Munster Technological
University, Cork
+353 (0)21 432 6758

HIHI (UoG)
Lambe Institute
University of Galway
Galway
+353 (0)91 492 072

HIHI (TCD)
H&H Building
St James's Hospital
Dublin
+353 (0)1 896 2573

HIHI (MMUH)
The Pillar Centre
Mater Misericordiae
University Hospital, Dublin
+353 (0)1 854 5181