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**National GreenTech in Healthcare Briefing Document**

In a national first, Health Innovation Hub Ireland (HIHI) with the HSE and Irish College of GPs are launching a GreenTech in healthcare call. The call is for innovative products and services that deliver environmental sustainability in both primary and secondary healthcare. The national call has a triple focus:

**1. Production:**  Single-use medical products often involve resource-intensive processes, using plastics and other materials that require significant energy inputs. This results in substantial greenhouse gas emissions.

**2. Disposal:** Many healthcare items are designed for single use and create a constant stream of waste. The disposal process, whether it involves incineration (which can release harmful emissions and substances) or landfilling (which leads to issues like leachate, soil contamination, and methane emissions), adds to the environmental and health burden.

**3. Decontamination:**The combination of processes including cleaning, disinfection and sterilisation used to render reusable invasive medical devices safe for handling by staff and for service users. Effective decontamination of reusable items and invasive medical devices is an essential component in the prevention of healthcare associated infections.

There is also a particular need to develop and test alternatives in the following areas:

Syringes/sharps, bottles, packaging, cutlery and crockery, nappies and sanitary products, medical textiles (including surgical gowns, theatre drapes, aprons, masks, hats accessories).

* Additionally, there is a particular need to develop and test alternatives for the following:

Syringes/sharps, bottles, packaging, cutlery and crockery, nappies and sanitary products, medical textiles (including surgical gowns, theatre drapes, aprons, masks, hats accessories)

This call seeks to support the development of impactful, scalable and sustainable pilots and evaluations. Each winning pilot proposal should be ready to deploy and, in a position, to measure impacts within a six-month timeframe.

**Please note this call is not a route to procurement, nor is there any commitment of any healthcare site or personnel to purchase by engaging in these pilots and evaluations.**

To apply, please submit your proposal via the link on the National Greentech call on hih.ie. November 15, by 5pm.

**Who Should Apply**

This GreenTech in healthcare call is open to all enterprise, academic, public and private sector organisations, who:

* Offer innovative and scalable solutions (products, services or devices).
* Provide new practices and solutions that address the triple focus and/or priority areas.

There are two types of two types of products that are eligible for this call

1. Products that in are in development and have at a minimum a working prototype. These products will benefit from a HIHI clinical/end user evaluation for further development.
2. Products that are CE marked, in-use or are market ready prepared for immediate deployment for a HIHI pilot. These products will benefit from a HIHI pilot to gather in-use data from a clinical setting.

**Why Apply?**

* Opportunity to pilot and demonstrate the impact and scalability of your offering in a real-world setting.
* Access to a unique collaborative healthcare ecosystem.
* Project management support.
* Promotion of your product.

**Application Process and Timelines**

Applicants must submit a completed application form through the HIHI website.

* **Call opens:** October 7, 2024.
* **Call closes**: November 15.
* **Evaluation of proposals:** Your submission will be reviewed by an internal panel. A shortlist of applicants will be selected and informed January 15 and will be asked to pitch to a panel of experts online Jan 29 or 30. Winners publicly announced February 2025.

**Evaluation & Selection Criteria**

All applications will be evaluated based on two separately scored lifecycle inventory analysis and circularity life cycle analysis. These are two individual sections, as set out below. They are scored separately under the following headings, and all should be completed to the best of your ability and where relevant to your product. The following can be used as a support in completing your application.

1. **Lifecycle inventory analysis**

**Lifecycle Inventory (LCI) Analysis** involves collecting and quantifying all the inputs (resources like energy, water, raw materials) and outputs (emissions, waste, products) associated with each stage of a product's life cycle. This analysis helps in understanding the environmental impact of producing, using, and disposing of a product or service.

**Material Efficiency:**

* + Use of sustainable materials.
	+ Reduction in material usage.
	+ Are you complaint with [EU REACH regulations](https://echa.europa.eu/regulations/reach/understanding-reach)? Please provide evidence.

**Energy Efficiency:**

* + Energy use in production and decontamination.

**Energy-Intensive Materials**: Healthcare products often rely on energy-intensive materials like plastics (e.g., PVC, polyethylene), metals, and glass. The extraction and processing of these materials involve high energy consumption, particularly in mining, refining, and manufacturing processes.

**Alternative Materials**: Utilising biobased or recycled materials can significantly reduce the energy footprint compared to virgin materials. For example, recycled plastics generally require less energy to produce than virgin plastics.

**Energy Consumption in Factories**: The manufacturing of healthcare products such as surgical tools, diagnostic equipment, or single-use items (e.g., gloves, syringes) requires large amounts of energy for processes like moulding, forming, sterilization, and packaging.

**Efficient Manufacturing Equipment**: Energy-efficient machinery and manufacturing processes, such as optimizing injection moulding machines or using renewable energy sources (solar, wind) at production facilities, can reduce the energy required for product fabrication.

* + Adoption of renewable energy sources – do you directly generate or where do you get energy from?

**Waste Minimisation:**

* + Waste reduction strategies:

**Design for Durability**: Healthcare products, such as medical devices and instruments, can be designed for extended use and durability, reducing the need for frequent replacements.

**Modular Design**: Creating products with interchangeable and upgradable parts allows for repairs or updates without replacing the entire product.

**Biodegradable Materials**: Incorporating biodegradable materials into products, such as single-use items (gloves, syringes), reduces the environmental burden after disposal.

* Improved disposal methods (recycling, energy recovery).

**Emissions Reduction:**

* + Measures to reduce emissions at all stages.

**Vehicle Emissions**: Calculate emissions from the vehicles (trucks, planes, ships) used to transport healthcare products. This includes fuel consumption and the distance travelled.

**Type of Transport**: Emissions vary depending on whether the product is shipped by air, sea, or land. Air freight has a higher carbon footprint compared to sea or road transport.

* + Carbon footprint, quantify kgCO2

 **Innovative Decontamination:**

* + Efficient and environmentally friendly decontamination methods. (Energy consumption, chemical use and emissions, waste generation)
1. **Circularity life cycle analysis**

**Circularity Life Cycle Analysis (LCA)** is an assessment approach used to measure the environmental impact of products or processes within the context of a circular economy. Unlike traditional Life Cycle Analysis, which primarily focuses on the cradle-to-grave flow (from resource extraction to disposal), circularity LCA incorporates strategies that prioritise resource reuse, recycling, and minimising waste, aiming for a cradle-to-cradle lifecycle.

**Sustainable Sourcing:**

* Sustainability of materials used in products - sourced from renewable or recycled materials.

**Reducing Raw Material Usage:**

* Minimised use of virgin materials.

**Durability and Longevity:**

* Reduced need for frequent replacements.

**Reusability:**

* Safe reuse after appropriate sterilization or refurbishment processes.

**Recycling:**

* Easily disassembled into recyclable components.

**Refurbishment:**

* Systems for returning products to manufacturers for updating or repurposing.

**Useful resources to consult when applying:**

* [Understanding REACH regs](https://echa.europa.eu/regulations/reach/understanding-reach)
* [Greenhouse gas conversations](https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023)
* [It’s not easy being green – a tool for choosing sustainable clinical products](https://www.nursingtimes.net/roles/hospital-nurses/its-not-easy-being-green-a-tool-for-choosing-sustainable-clinical-products-25-07-2023/)
* [HSE Climate Action Strategy](https://www.hse.ie/eng/about/who/healthbusinessservices/national-health-sustainability-office/climate-change-and-health/hse-climate-action-strategy-2023-50.pdf)
* [Delivering a ‘Net Zero’ National Health Service](https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/)
* E[llen Mcarthur Foundation – what is a circular economy?](https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview)

**Successful applicants will work with HIHI directly:**

1. **Pilots** are conducted in a healthcare setting in Ireland with products and services which have all the necessary regulatory approvals (e.g., CE mark) and insurance in place at the time of commencement of the pilot project.
2. **Clinical/end user evaluations** provide critical feedback from experts and end users on a product or service that is market ready or mid development. At a minimum working protype must be provided.

**A pilot project will:**

* Facilitate access to the health system for execution of the pilot of a market-ready product or service.
* Provide the innovator with a reference site in Ireland.
* Provide support of HIHI project management team to manage the execution of the project.
* Provide advice on the availability of various funding streams.
* Link innovators (when appropriate), to other relevant supports within the Irish healthcare innovation ecosystem.
* Deliver an independent HIHI Final Project Report on completion of a pilot, providing evidence of solution efficacy, impact and value for key stakeholders.
* Published case study on the HIHI website and promoted across HIHI channels and media as appropriate.

 **An evaluation project will:**

* Facilitate access to experts securing critical feedback and contextual insights.
* Provide support of HIHI project management team to manage the execution of the project.
* Provide advice on the availability of various funding streams.
* Link innovators (when appropriate), to other relevant supports within the Irish healthcare innovation ecosystem
* Deliver an independent HIHI Final Project Report on completion of a clinical evaluation
* Published case study on the HIHI website and promoted across owned channels and media as appropriate.

 **What MUST innovators provide to support the projects?**

Innovators conducting a project with HIHI must

* Provide dedicated contact personnel and availability of personnel for delivery of evaluation or pilot.
* Provide dedicated resources to deliver project objectives - equipment, hardware, software, etc.
* Provide personnel and resources at no cost to the healthcare system for project duration.
* Engage proactively with Health Innovation Hub Ireland and healthcare personnel to deliver the project objectives.
* Acknowledge HIHI support and the HIHI Greentech call in public presentations, publications and social media presentations.
* Have the relevant liability insurance in place, particularly important for pilot projects.

 **Notes for Applicants:**

* HIHI does not have a procurement role and as such, regardless of the outcome of HIHI projects, the HSE is under no obligation to purchase the product or service.
* HIHI does not conduct clinical trials - these are referred to our associated Clinical Research Facilities, or other members of the HRB NCTO, where appropriate.
* If a project is accepted by HIHI, a Project Agreement Document containing HIHI terms and conditions must be completed before the start of the project which will outline the proposed timelines.
* Depending on the detail of the proposed project, a research ethics application and a data protection impact assessment may be required before a pilot or clinical evaluation can commence.
* HIHI will not provide financial support for selected projects.
* HIHI will not charge a fee to manage or support projects selected in the call.
* This call seeks to support the development of impactful, scalable and sustainable pilots and evaluations. Each winning proposal should be ready to deploy and should be in a position to measure impacts within a six-month timeframe.
* Timeframes for product evaluations within a healthcare setting are not guaranteed, as evaluations will be undertaken voluntarily and without reimbursement by end users.

**Submission of Applications**

The GreenTech in Healthcare call 2024 application form is available to download from the National Greentech call on hih.ie. Applications must be submitted by filling in all requested details and uploading a completed application form.

Closing Date: November 15th, 5pm. Applications should be submitted via the link on the National Greentech call on hih.ie.

**Enquiries**

For general enquiries please contact info@hihi.ie or climateandsustainability@hse.ie or your nearest HIHI office:

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