Accelerating the transition towards a **net zero NHS**

Delivering a sustainable and resilient UK healthcare sector

Today the health care sector faces an array of **formidable pressures**, including an ageing population with increasing comorbidities, inequalities in access to healthcare and worsening environmental impacts on health. These pressures, compounded by Covid-19, increase demand and competition for already stretched budgets.

Alongside these challenges, the impact of industries on the environment, including the health sector, is drawing greater stakeholder focus. Today, the NHS alone accounts for 4% of the UK's greenhouse gas emissions. Of this, Scope 3 emissions (indirect emissions that occur in the supply chain) make up a staggering 62%.

Recognising that climate change and environmental damage are strongly connected with disease and ill-health, the NHS has set ambitious targets for cutting its greenhouse gas emissions, pledging to become the world's first net zero national health service by 2040.

A call for the NHS, its supply chain, and government to work together

Achieving net zero will require the NHS to collaborate with a wide range of business partners and suppliers to significantly improve Scope 3 emissions, which are four times (as of 2020) that of its Scope 1 emissions. Given that compounded carbon reduction rates of 8% p.a. are required to achieve net zero, the need for innovation is urgent and requires front-loaded change; any delay will lead to tougher targets in future years.

This transition will require investments by all members of the NHS' extended value chain, but doing so will generate significant operational efficiency, material productivity and improved patient flow and experience.

Recommendations to suppliers

There is an urgent and compelling need for suppliers to provide more evidence in line with the NHS Evergreen framework based on stringent, verifiable reporting towards net-zero ambitions, including:

- Showcasing solutions from installed innovations with documented cost benefits of circular economy (to NHS net zero delivery teams, NHS supply chains, NHS Trusts) including Scope 3 carbon footprint, and the potential for more efficient models of care for better outcomes – and experience - for patients and staff.

- Improving documentation and evidence of product Scope 3 carbon footprint to match NHS supply framework and net zero ambitions; ideally along a standardized set of circular economy measures to enable best-practice exchange e.g., total carbon footprint or total cost (per scan).

- Ensuring suppliers trajectory for net zero is aligned to the NHS trajectory and promoting best-in-class using robust and auditable methods and data.

- Promoting circular economy innovation pipeline matched to NHS net zero ambition.

- Ensuring suppliers strengthen their relationship with NHS and UK Health sector.

Leading suppliers have already embraced circular economy design principles and now need to raise awareness of circular economy as a concept and its relevance to net zero and other health care challenges. To achieve net zero, all suppliers need to move beyond energy efficiency and incremental innovation to systemic innovation, by:

- Improving the longevity of assets and intensify usage.

- Improving the mix of material inflow from responsible sources and reduced carbon footprint, and by significantly increasing the retention or reclamation of non-hazardous materials and components.

- Significantly reducing energy consumption in use and the need for consumables.

At the same time suppliers need to ensure stringent progress on Scope 1 and 2 emissions and some 'low hanging fruit' actions that have been highlighted by NHS staff, including:

- Establishing clean-energy-powered manufacturing and logistics processes across their upstream value chain to drive down emissions.

- Ensuring sourcing from renewable energy and responsible sources.

- Designing out unnecessary waste product and materials from installations such as unnecessary cabling, connectors, documents and packaging.

**Designing equipment along circular economy principles can deliver benefits to the NHS and suppliers.
To unlock the value creation potential of circular economy requires adoption of end-to-end service-based business models, including:**

- Incentivising longevity, upgradability and improved maintenance of equipment to achieve higher uptime, higher utilisation and longer usage periods.

- Integrating reverse recovery activities to ensure higher degree of component and material recovery across their supplier network and certified reprocessing capacities.

- Encouraging cascading of equipment across different usage cycles and needs-based segments (e.g., cascading from human to veterinary applications) to maximize full usage life of equipment.

Recommendations to the NHS

The NHS has started to create incentives and targets for its upstream supply chain partners needing to bring the largest contribution to reduce Scope 3 emissions, especially by establishing and leveraging procurement influence. The NHS must now make a step-change from incremental approaches to systemic approaches, including:

- Embracing circular economy inspired models, which favour longer and higher intensity usage of equipment.
- Mandating suppliers to provide proof of circular economy-based practices by 2025, demonstrating how they are extending material lifetime use, refurbishing equipment to sufficient standards, and that where possible, introducing digital-first products and services.
- Promoting the usage of more service-based business models (e.g., pay-per-use, service contracts)
- Demonstrating that decisions in their tender rankings around emission-reducing factors have been taken into consideration (and not only short-term cost focus).
- Providing training to all staff on minimising waste in work / principles of circular economy for use in the health environment.
- Moving away from the traditional capital allowance model which encourages equipment or components to be replaced before the end of their service life.

Rather than just providing equipment suppliers the NHS needs to work closely with suppliers as a partner and enabler, by:

- Collaborating on overarching carbon strategies over longer-term contracts to scale systemic solutions beyond just 'buying' devices or consumables e.g., wearable monitoring to keep patients away from acute hospitals integrated with fleet and facility management.
- Building patient care models and journey pathways which aim to reduce usage of scarce bed availability.
- Trialling new and alternative forms of diagnostics and treatment (together with the GP community) to ensure more preventative and faster diagnostics and treatments to shorten illness and aggravation of patient circumstances.
- Digitalising solutions to health and care monitoring and management.

The NHS can lead the way, by;

- Applying circular economy principles to their own operations (e.g., maintenance, operations of fleets and installations). **Demonstrate.**
- Providing scale to the clean-energy transition by being an active launch customer for emerging technologies. **Pioneer.**
- Questioning whether products, devices, consumables or single use items are needed or can be done differently - look at entire care pathway. **Refuse.**
- Identifying whether a consumable or task (such as providing information) be reused. e.g., digital information, analytics, instruments, equipment, consumables. **Reuse.**
- Assessing whether the method, information, consumable or equipment can be fixed. **Repair.**
- Evaluating whether the method, information, consumable or equipment be used for something else. **Repurpose.**
- Determining whether the method, information, consumable or equipment be broken down into constituent parts and reconstituted into a new version or something else. **Recycle.**

To scale up promising early developments the NHS should build a platform for circular economy innovation in the UK health care industry, by:

- Undertaking a comprehensive and systematic mapping of key medical equipment product categories to produce use cases showing their feasibility and to quantify the carbon and financial benefits from a range of circular economy interventions including **reduce, repair, reuse** and **refurbishment .**
- Working with key suppliers to build demonstration and test cases to quantify and evidence the patient outcomes of larger systemic innovation and service re-design with greater resource productivity delivered including remote diagnostics, telehealth and new models of care in the community. **Innovate.**
- Building partnerships with leading circular economy communities nationally and globally for knowledge exchange, shared learning and capacity building. **Convene** and **collaborate.**
- Taking the opportunity to become a global leader in both net zero and circular economy. **Lead** and **role-model.**
- Building circular economy into education and training programmes to influence staff at all levels about their role and responsibility and how they can support change. **Enable.**
- Capturing financial savings from future circular economy innovation and making these available to accelerate and scale up further circular economy innovation. **Capture.**

Policy and regulatory organisations can enable and accelerate circular economy and ensure the compliance of models with objectives to protect patients and the public, including:

- Providing certification of refurbished equipment as good as new.

- Improving the enforcement of standards to ensure viability of innovative services and avoid abuse (e.g., counterfeiting, sub-standard repairs, inappropriate removal and disposal).

They are also in a position to provide incentives and stability of regulation, by:

- Incentivising for NHS and suppliers to invest into new models of care and more circular economy inspired diagnostic and treatment technologies.

- Undertaking regular review and promotion of supportive policy guidance for re-use, repair, refurbishment and remanufacture whilst maintaining the demands of patient safety.

- Ensuring regulatory control to oversee the implementation and delivery of new care models, such as telehealth, to maintain the highest quality and patient safety healthcare.

Finally, policy and regulation can provide a platform for cross-industry collaboration in pre-competitive spaces, by promoting industry wide standards and certification for refurbished and remanufactured equipment, to ensure that quality is assured. This involves:

- Benchmarking international developments on circular economy and health care including re-use, repair, refurbishment and remanufacture.

- Providing funding to activate and stimulate circular economy led innovation in the short term to overcome inertia and lack of awareness.

- Setting policy and regulatory frameworks and interventions to promote and incentivise whole system approaches and systemic innovations.

PHILIPS