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Consultation Draft

NHS Scotland Climate Emergency & Sustainability Strategy

2022-2026

SUSTAINABILITY ACTION

NHS SCOTLAND

November 2021

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Our Ambition and Approach

'Climate change poses a catastrophic threat to humanity and the natural systems that underpin our lives. It is obvious that tackling climate change will have a positive impact on human health'.[1]

'Global warming of 2°C will be exceeded during the 21st century unless deep and rapid reductions in carbon dioxide (CO_2) and other greenhouse gas emissions occur in the coming decades.'[2]

Introduction

1. The need to act to address the climate emergency and loss of biodiversity is clear and pressing. In recognition of this, in 2019 NHS Scotland became the first national health service in the UK to commit to becoming a net-zero organisation. But like all sectors of society, we need to accelerate our efforts to cut our greenhouse gas emissions and become environmentally sustainable. We are therefore bringing forward our target date for achieving net-zero emissions from 2045 to 2040. The case for the health service to act is about more than simply playing our part. The threats to human health from the climate emergency, both in Scotland and globally, are so serious that climate change has been described by the Lancet Commission on Managing the Health Effects of Climate Change as "*the biggest global health threat of the 21st century*".[3]

2. At the same time, many of the actions needed in response to the climate emergency and the environmental crisis have positive health impacts. Cutting emissions and restoring biodiversity improves air quality and can prevent diseases such as asthma, pneumonia, heart attacks and stroke. Well-insulated homes can save lives and prevent illnesses as well as reducing energy consumption. Eliminating pharmaceutical residues from wastewater prevents harm to biodiversity and limits the growth in antimicrobial resistant bacteria, one of the most serious threats to our ability to treat illness. The direct and indirect health benefits are so great that tackling climate change has also been described by the Lancet Commission as "*the greatest global health **opportunity** of the 21st century*".[4]

3. The Scottish Government is committed to a just transition from a fossil-fuel based economy. The just transition principles require us to act in a way that helps to address inequality and poverty. The climate emergency, loss of biodiversity, sustainability, health and health inequalities are inextricably linked. Tacking the

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[1] [1]Professor Joanna Haigh CBE FRS E FRS, Co-chair of the Royal Society and The Academy of Medical Sciences Report: A healthy future – tackling climate change mitigation and human health together, 2021

[2] IPPC Sixth Assessment Report 2021

[3] Managing the health effects of climate change: and University College London Institute for Global Health Commission

[4] Health and climate change: policy responses to protect public health, The Lancet*, Vol. 386, No. 10006*

climate emergency in a just way will avoid exacerbating health inequalities and has the potential to reduce these.

4. As an organisation dedicated to improving and protecting physical and mental health and wellbeing, our National Health Service must be in the vanguard of efforts to tackle the climate emergency and the environmental crisis.

5. NHS Scotland has shown throughout the Covid-19 pandemic that it can act quickly in a crisis. The climate emergency and environmental crisis requires urgent action. Without quick and decisive action, we run the danger of "the biggest global health threat of the 21st century" and the risks of failing to seize "the greatest global health opportunity of the 21st century."

Our Aims

6. Our ambition is to become a service which is both environmentally and socially sustainable. A health service that improves the opportunities, life chances, health and wellbeing of every citizen in our country and fully contributes to a more cohesive, resilient and net-zero society in a just way that contributes to population wellbeing and a reduction in health inequalities. To do this, NHS Scotland aims to collectively:

    - ensure that we, as an integral part of our communities, contribute to the achievement of the United Nation's Sustainable Development Goals and national outcomes for health
    - become a net-zero greenhouse gas emissions health service by 2040 or earlier if possible
    - make our assets and activities more resilient to the impacts of a changing climate, particularly extreme weather events
    - establish a culture of stewardship, where we safeguard and responsibly use natural resources to provide environmentally sustainable healthcare
    - establish NHS Scotland as part of the circular economy through designing out waste and pollution, keeping products and materials in use and contributing to the regeneration of natural systems
    - increase our contribution to tackling the ecological emergency and restoring biodiversity

7. To achieve these aims, we need the help of everyone across the whole of NHS Scotland. Many are already taking action to help create a more sustainable NHS and others have great ideas to share. We need to support the energy and enthusiasm of our people and give them the resources and backing they need to make the changes our communities and the world need. We need to build on the great work which has already been done and scale it up across the whole of NHS Scotland.

Our approach to Net-Zero

8. Our approach to Net-Zero is not based on carbon off-setting. The UK's independent, statutory Climate Change Committee advises that most sectors will

need to reduce emissions close to zero without offsetting. We are, therefore, working to bring our emissions as close as possible to zero as early as we can.

Delivering the UN SDGs and a Just Transition

9. Sustainable development, the concept that human needs must be met within the limits of natural systems, has a crucial role to play in ensuring a better quality of life for everyone.

10. In 2015, all UN Member States adopted the 2030 Agenda for Sustainable Development; a shared blueprint that at its heart are the 17 Sustainable Development Goals (SDGs). The SDGs are a call for action by all countries to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and protecting the environment.

11. The Scottish Government has embedded the SDGs within the current National Performance Framework (NPF). The NPF sets out a vision for Scotland across a range of social, economic and environmental factors. It highlights the need for a 'whole system approach' to successfully deliver the national outcomes for health and recognises the important role that NHS Scotland has in helping to achieve this, ensuring quality healthcare services are available and accessible to all.

12. NHS Scotland is committed to supporting progress on meeting the SDGs and national outcomes in Scotland. Our actions to create a sustainable health service are also informed by the following just transition principles:

   - plan, invest and implement a transition to an environmentally and socially sustainable, climate resilient, health service in a way which builds on Scotland's economic and workforce strengths and potential
   - create opportunities to develop resource efficient and sustainable approaches which help address inequality and poverty
   - design and deliver low carbon and climate resilient investment and infrastructure making all possible efforts to create decent, fair and high value work

The National Performance Framework

Working in partnership

13. NHS Scotland cannot deliver its sustainability aims on its own. We also need to work closely with local communities, local authorities and other public bodies, third sector organisations and our suppliers to achieve them. We will actively engage in existing forums for collaboration and assist in creating new ones where they are needed.

14. Actions to improve the sustainability of our NHS will be delivered by Health Boards working in partnership with Integrated Joint Boards, Community Planning Partnerships and Regional and Local Resilience Partnerships. This strategy provides the vision and objectives for Health Boards setting out high level requirements and examples of good practice, recognising that action on the ground will depend on local circumstances and the specific sustainability challenges and opportunities that individual Health Boards face.

Our role as an anchor organisation

15. We are committed to acting for the benefit of the local communities we serve and recognise that we can positively contribute to local areas in many ways beyond providing healthcare. Our strategy will make a difference to local people including our staff through working more closely with our local partners to use our buildings and spaces for social benefit, providing opportunities for recreation and physical activity, improving access to high quality outdoor space, making local sourcing possible, and reducing our environmental impact.

Our People

> 'The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide'[5]

Working together

1. NHS Scotland has already made significant progress in creating a sustainable health service but more still needs to be done. Much of the work has been taken forward by Health Board Sustainability Managers or local teams who have taken the initiative to make positive changes. We need to support our people so that sustainability becomes everyone's responsibility and help them build on the good work which has been done already.

2. For example, at Raigmore Hospital in Inverness, the surgical team, with the support of NHS Highland's sustainability team, undertook a series of initiatives to reduce waste, greenhouse gas emissions and energy use through the "Green Theatre Project". As well as making surgery better for the environment, the Green Theatre initiative increased productivity, reducing the time needed for each operation through improvements to processes.

3. To help build on successes like the Raigmore Green Theatre project, each Health Board will put in place a Climate Emergency Response and Sustainability Team with the right resources to help the Health Board deal with the challenges of decarbonisation and environmental sustainability that it faces.

4. It has been estimated that 80% of the health service's carbon footprint can be directly apportioned to clinical choices.[6] The involvement of clinicians in efforts to improve sustainability is essential to success.

5. Each Health Board which provides clinical services, will establish a sustainable care clinical planning team as a core part of its Climate Emergency Response Team. These teams will work with other clinicians across the NHS to help make clinical services environmentally friendly.

6. The size and skills of each Health Board's Climate Emergency Response Team will depend on the scale of the challenge faced by that Health Board. Some national Health Boards are very small and their staff work in offices or from home while, at the other end of the scale, NHS Greater Glasgow and Clyde is the largest NHS organisation in the UK. Because of these differences, this strategy does not prescribe the composition of each Climate Emergency Response Team. However, as a minimum, Health Boards will include representation from estates and facilities, service management and planning, clinical (realistic medicine),

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[5] Sir Robert Watson, then Chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019 https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/
[6] Centre for Sustainable Healthcare, available at: https://sustainablehealthcare.org.uk/blog/we-work-healthcare-%E2%80%93-course-we-care-about-carbon

public health, resilience and business continuity, transport and procurement to have the necessary range of skills to deliver meaningful change.

Leadership

7. To create an environmentally and socially sustainable health service, people must know that they will have the backing of senior managers and executives when they take the initiative to make changes for the better. Business as usual is not enough. Senior leaders need to provide their energy and allocate resources to support improvements to sustainability. But leadership does not just come from the top. The health service is full of talented people at all levels who are taking the lead on making the health service more sustainable.

8. To ensure all levels of the NHS are involved and actively contributing to meeting our climate and sustainability aims, each Health Board will, where it hasn't already:

  - ✓ appoint a Climate Emergency and Sustainability Champion from amongst its Board members
  - ✓ appoint an executive lead for its Climate Emergency and Sustainability response
  - ✓ ensure that its progress in responding to the climate emergency and sustainability issues is regularly considered by its Board
  - ✓ establish a strong governance structure for implementing the aims of this strategy, ensuring that those aims and their local sustainability strategies are fully integrated into all planning, management decisions and operational practices across the organisation
  - ✓ foster and promote a culture of stewardship - where NHS employees are mindful of the resources they use and share a vision of green and sustainable healthcare
  - ✓ ensure all employees understand and act on the principles of good stewardship and practicing sustainably and are supported to do so through preparation programmes and CPD opportunities
  - ✓ ensure that their health and care professionals complete the NHS National Education for Scotland online training module on shared decision making to help ensure better value care is provided – for patients and for the system, reducing waste and harm

9. To support senior leaders and staff to share best practice and better understand what they can do to promote sustainable development, NHS National Services Scotland will establish an NHS Scotland Sustainability Network. This will provide opportunities for peer mentoring and support as well as sharing best practice and the latest developments in sustainability.

10. We will also develop a Climate Emergency Module to sit alongside the training module on shared decision making.

  Raising awareness

11. Awareness of the importance of the climate emergency and sustainability has never been greater but it can still be challenging to know how we can make a difference. A wide range of staff across NHS Scotland were involved in creating the 'Sustainability Action' brand 'Our NHS, Our People, Our Planet'. All NHS staff have access to the resources that have been developed to help drive forward action on climate change and sustainability. These can be found at: www.nhssustainabilityaction.co.uk.

12. To help raise awareness, each Health Board will develop and implement communications plans to help staff, patients and visitors make sustainable choices and raise awareness of its own plans, actions and progress in developing a more sustainable health service.

Our Priority Areas

1. This strategy sets out what we plan to do between now and 2026 across the following five priority areas for NHS Scotland:

   - Sustainable Buildings & Land
   - Sustainable Travel
   - Sustainable Goods & Services
   - Sustainable Care
   - Sustainable Communities

2. To effectively deliver our environmental and social sustainability aims, the strategy should work alongside other NHS Scotland and Health Board strategies and initiatives. By taking an integrated approach and working in partnership, we will be better able to create a sustainable health service. The challenges we face are all connected and so our solutions must be as well.

Sustainable Buildings & Land

1. We are committed to creating healthy, inclusive, resilient and nature-rich healthcare environments that nurture good health and wellbeing for patients, staff and the wider community and minimise our impact on the environment.

2. NHS Scotland currently has 1,250 buildings covering around 4.7 million square metres. In many cases, these buildings are part of larger estates rich in greenspace, parks and woodlands. The Scottish Government has made a commitment to invest £10 billion over the next decade to renew the estate and reshape and replace buildings.[6] This investment programme will provide opportunities for creating truly sustainable healthcare facilities which minimise the impact of construction on the environment and finite resources, reduce our dependence on fossil fuels, are resilient to climate change, and create healthy and inclusive internal and external environments.

3. This part of our strategy focuses on the actions we will take to help create truly sustainable NHS buildings and land. It covers the following topics:

   - reducing our building greenhouse gas emissions
   - adapting our estate to climate change impacts
   - embedding good environmental stewardship of our services, buildings and infrastructure assets
   - valuing, protecting and managing our greenspace
   - the sustainable future development of our NHS healthcare estate

Reducing our building emissions

> "Limiting human-induced global warming to a specific level requires
> limiting cumulative CO_2 emissions, reaching at least net-zero CO_2

emissions, along with strong reductions in other greenhouse gas emissions." [7]

4. Building energy use makes up the biggest proportion of our direct greenhouse gas emissions. Limiting these emissions will have health and wellbeing benefits for our communities as well as helping Scotland's transformation to a net-zero society and limiting the harm to our environment. The benefits of acting quickly are clear – our aim is to reduce our cumulative greenhouse gas emissions as every tonne emitted adds to the climate and nature emergency.

Where we are now

In financial year 2020/21, NHS buildings accounted for the equivalent of around 430,000 tonnes of CO_2 emissions and consumed almost 2TWh of energy. Since 1990, NHS Scotland's local Health Boards have reduced their greenhouse gas emissions associated with building energy use by 63.9%. These reductions have largely been achieved by the switch to gas heating from heavy fuel oil and coal, the on-going decarbonisation of the electricity grid and energy efficiency measures adopted by Health Boards. We now face the significant task of moving away completely from fossil fuel sources of heat.

The Scottish Government has committed to all publicly owned buildings meeting zero emission heating requirements by 2038, with a series of interim targets to be established by 2024. As NHS Scotland's direct emissions are largely from heating, this means an acceleration of our efforts to eliminate greenhouse gas emissions. In addition, the UK Government aims for all electricity to be from renewable sources by 2035.

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5. Our goal is to reduce greenhouse gas emissions from our buildings by at least 75% by 2030 and 90% by 2040 compared to a 1990 baseline, to use renewable heating systems by 2038 for all NHS-owned buildings, and for all our estate to have net-zero emissions by 2040 or earlier where possible. The need to limit cumulative greenhouse gas emissions and to use renewable heating by 2038 means that we must take steps in the next five years that will put us in as strong a position as possible to achieve this goal.

6. We will reduce our energy consumption through efficiency measures (set out in Annex A to this strategy) and replace fossil fuel heating with renewable heat sources and electricity. The Scottish Government is funding the preparation of net-zero route maps for all twenty-two Health Boards with the aim of completing them by the end of 2022. These route maps will set out options for achieving zero emissions from heating by 2038 and net-zero greenhouse gas emissions by 2040 at the latest. All Health Boards are required to have Property and Asset Management Strategies and will ensure that those strategies support the achievement of NHS Scotland's decarbonisation targets for buildings.

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[7] Intergovernmental Panel on Climate Change, Climate Change 2021: The Physical Science Base: Summary for Policymakers, section D.1

7. The preferred renewable heating system for each NHS site will depend on local circumstances. It is likely that NHS Scotland will use systems such as air, ground and water source heat pumps, zero-carbon district heat networks and hydrogen depending on the site. Geothermal and other renewable resources may also be considered. We will prepare and implement plans so that all NHS owned buildings will use renewable heating systems by 2038.

8. The Scottish Government's Heat in Buildings Strategy sets out that its Green Public Sector Estate Decarbonisation scheme will invest a minimum of £200 million between 2021-2026 in public sector energy efficiency and decarbonisation improvements. Health Boards have successfully applied for funding in the first round of that scheme and will apply to future rounds as well.

9. A number of Health Boards lease office space. These Health Boards will take into account carbon emissions when assessing their property options when they are considering whether to renew a lease or enter into a lease for a different property. These property appraisals will consider emissions associated with the building and those arising from staff travelling to it. The Scottish Government will update the NHS Scotland Property Transactions Handbook to ensure that priority is given to zero and low carbon property solutions.

10. The shift to a net-zero society will also create new opportunities for renewable heat and electricity providers. We will explore opportunities to contribute to this transition through the greater use of roofs and immediate grounds for green energy technologies. We will also explore options for entering into Power Purchase Agreements and Heat Purchase Agreements. This work will include identifying appropriate procurement and contract options to ensure continuity of supply.

11. The supply and treatment of water contributes around 2000 tonnes of NHS Scotland's greenhouse gas emissions compared to around 430,000 tonnes from energy use. While those emissions are relatively small, we need to reduce them further to become a net-zero service. In addition, periods of water scarcity are likely to increase as the climate changes and reducing our water use is an important aspect of adapting to the new conditions.

Actions we will take

12. To accelerate our action on reducing carbon emissions from buildings we will:

   ✓ prepare and implement net-zero route maps to use renewable heat for all our owned buildings by 2038 and achieve net-zero emissions for all our buildings by 2040 or earlier where possible
   ✓ use Property and Asset Management Strategies to support decarbonisation
   ✓ take action to improve energy efficiency including those set out in Annex A and conform with ISO 50001 or equivalent
   ✓ apply to the £200 million Green Public Sector Estate Decarbonisation Fund

- ✓ take account of carbon emissions when evaluating options for leasing buildings
- ✓ maximise the use of renewable electricity including better use of roofs and adjacent grounds for on-site renewable energy and heat generation
- ✓ explore options for entering into power purchase agreements and heat purchase agreements with local renewable electricity and heat providers
- ✓ identify and implement measures to improve water efficiency

Adapting to climate change impacts

'The science is unequivocal: a global increase of 1.5° C above the pre-industrial average and the continued loss of biodiversity risk catastrophic harm to health that will be impossible to reverse.'[8]

13. The resilience of our estate is vital to ensuring the delivery of health and care services without disruption. Climate change and severe weather events are already impacting buildings, services, health, transport, water resources and energy demands and will have more severe impacts irrespective of mitigation efforts. Projected climate change trends for Scotland will mean increased flooding, extreme temperatures and more extreme weather events. We need to take urgent action now to protect sites, services and communities.

Where we are now

NHS Scotland Chief Executives have made a commitment that all Health Boards will prepare a Climate Change Risk Assessment (CCRA) and Climate Change Adaptation Plan by the end of the 2021/22 financial year. A CCRA and Adaptation Planning Tool for Healthcare Assets and a Climate Hazards and Vulnerabilities Mapping Tool has been developed by NHS National Services Scotland to support this work.

Climate Change Impact Assessments have also been prepared for each of the twenty-two Health Boards to identify current and future key climate risks. These provide a high-level assessment of previous climate events and set out affected assets and operations, current risks and the potential future risks that could be faced taking into account current climate change projections. Flooding and overheating are identified as the climate risks most likely to have the biggest effect on the estate and operations of NHS Scotland as well as increasing patient demand.

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14. Flooding is identified as the main climate risk for Scotland in the Climate Change Committee's Independent Assessment of UK Climate Risk.[9] This is already having an impact on health services. For example, a flooding event in Perthshire caused patients to be cut off for a week. Over 400 health and social care assets in Scotland are at risk of frequent flooding, and this number is likely to increase in the future even if global warming is kept to below 2ºC.

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[8] https://www.nejm.org/doi/full/10.1056/NEJMe2113200?query=featured_home
[9] https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/

15. The number and length of heatwave events has increased throughout the UK and is projected to continue to do so. Overheating in Scotland's hospitals has been identified as a key risk with 90% of UK hospital wards at risk of overheating in hot weather and no system for reporting overheating in NHS facilities[10].

16. With projections for reduced summer rainfall, periods of water scarcity are likely to become more prevalent in the future with the long-term sustainability of private water suppliers a particular challenge in Scotland. Climate risks to building fabric include excessive moisture due to flooding and heavy rain, structural damage due to high winds. Landslides are also an increasing risk associated with heavy rainfall events.

17. Indirect effects will occur through the detrimental impacts of extreme weather on people's health and wellbeing, which will increase demand for services. These impacts will be felt not only within institutional settings, such as hospitals, residential and nursing homes, and respite centres, but will also affect people who receive care services in their own homes and may prevent people from accessing critical services.

18. Measures to adapt to changing climate conditions have the potential to increase greenhouse gas emissions, for example cooling and heating buildings. Measures to reduce emissions can also be adversely impacted by climate change. It is essential that we act to both reduce emissions to net-zero and adapt in ways that maximise positive environmental and health co-benefits. For example, increases in trees and plants captures carbon as well as providing shading and helping to reduce flood risk. It also encourages people to spend more time outside and adopt active travel choices improving air quality and promoting healthier lives.

19. Health Boards are making good progress with assessing climate risks and preparing adaptation plans, but these need to be integrated into other strategies and risk management processes. In addition, they must be resourced and implemented to minimise risks to people, buildings, supporting infrastructure and the supply chain. Adaptive capacity will be improved by following best practice as set out in the international standard on adaptation ISO 14090.

20. Adaptation Plans should be developed on a cross-departmental basis including the involvement of Integrated Joint Boards, Community Planning Partnerships, Public Health Scotland, local authorities, Regional and Local Resilience Partnerships. Cross-boundary issues and wider interdependencies should also be considered with neighbouring bodies and wider stakeholders such as Network Rail, Transport Scotland and SEPA.

21. Whilst individual Board adaptation plans will highlight the issues relevant to their local context, adapting to flooding, overheating (as well as continuing to manage cold weather), high winds, storms and water scarcity have been identified as the key risks for Scotland by the most recent Independent Assessment of UK Climate Risk. Therefore, adaptation plans will identify specific actions to reduce the potential impacts of these risks.

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[10] Independent Assessment of UK Climate Risk - https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/

Actions we will take

22. To help protect sites, services and communities from the impacts of climate change we will:

- ✓ conduct Climate Change Risk Assessments covering all areas of service
- ✓ implement a climate change adaptation plan to ensure resilience of service under changing climate conditions
- ✓ develop Climate Change Risk Assessments and adaptation plans along with net-zero route maps to maximise alignment and synergy
- ✓ ensure that Climate Change Risk Assessments and adaptation plans are integrated with other strategies, risk assessments and business continuity plans
- ✓ work towards the requirements of ISO14090: Adaptation to climate change
- ✓ input to the development of wider adaptation strategies and related activity including local authority open space strategies

23. To address impacts from the risk of overheating and water scarcity we will:

- ✓ raise awareness of the potential for overheating and actions that can be taken by staff, patients, visitors and contractors
- ✓ prioritise passive cooling measures over mechanical cooling wherever possible.
- ✓ establish a programme of monitoring to capture data that will enable a robust assessment of the nature and severity of overheating at in-patient facilities
- ✓ incorporate water saving measures wherever possible
- ✓ develop and manage greenspace and other green infrastructure such as green roofs and rain gardens to address risks

24. To address flood risk, we will:

- ✓ raise awareness of the potential for flooding and actions that can be taken by staff, patients, visitors and contractors
- ✓ assess the risk of flooding for all sites, key transport and access routes, supporting infrastructure and workforce based on current and future projected climate conditions
- ✓ consider opportunities to develop and manage greenspace and other green infrastructure such as green roofs and rain gardens to help mitigate flood risks

Good environmental stewardship

25. Health Boards operate and maintain a diverse range of services, buildings and infrastructure assets which are essential to the delivery of health services. If they are not maintained and managed effectively, they risk causing harm to the environment. Environmental risks can include discharge of pollutants to air, land or water and the unsustainable management of waste either by generating

unnecessary waste or by not taking due care when treating, recycling and disposing of it. These risks can affect our environment locally, nationally and globally. Examples of risks include oil storage tanks, liquid fuel storage and laundry service operations.

Where we are now

NHS Scotland has developed and implemented a range of tools to measure and monitor specific environmental indicators including eSight (used to monitor energy consumption), the Statutory Compliance and Risk Tool (SCART), the National Sustainability Assessment Tool (NSAT) and the Waste Data Reporting Tool.

In 2021, we launched a new Environmental Management System (EMS) which Health Boards can use to identify environmental risks, assess the likelihood and scale of impacts, identify mitigation measures and prioritise actions. The EMS incorporates a legal register which assists Health Boards in tracking their compliance with environmental legislation.

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26. It is essential that we effectively manage environmental risks and foster a culture of continuous improvement to prevent environmental harm and ensure compliance with legal requirements. Other benefits can include reduced breakdowns of equipment, reduced service disruption, improved staff awareness, reduced unforeseen costs, and reduction of associated risks to human health.

27. Further work is required to embed the new Environmental Management System within Health Board governance and reporting processes. It is critical that environmental risk and compliance is managed at the highest level and that necessary budgets and resources are assigned to environmental audits, repairs and upgrades to ensure continuous improvement. Health Boards need to cascade environmental management across all departments to reduce our impact on the environment and wherever possible contribute positively to the local environment and biodiversity. Adopting best practice as set out in the international standard on environmental management ISO 14001 will help to reduce environmental risks.

Waste management

28. Health Board waste management officers should ensure that arrangements are in place for the safe treatment and disposal of all waste streams (clinical and non-clinical waste). The waste hierarchy should be embedded within all waste collection and treatment contracts. Health Boards should ensure that waste data is recorded and monitored, and opportunities to reduce waste and maximise reuse and recycling are identified and implemented.

29. Recently progress has been made to improve our waste data, however, more needs to be done to capture 100% of our data and use it to identify opportunities to minimise consumption of resources and reduce our environmental impact associated with waste.

30. Similar to the complexities and variations associated with household waste and recycling collections, we recognise that our waste collection policies are not fully understood by all of our staff. Anecdotally, we understand that staff are confused about which materials they should segregate for recycling and which items should be segregated as clinical waste.

31. Some of the key successes in our waste performance have been driven by individual staff members at a local level. We have the opportunity to motivate staff to value our wasted resources by benchmarking performance, communicating instructions clearly and letting them know about the positive impacts that they have had.

32. To help with this, we will regularly communicate with staff about initiatives to reduce our waste, improve waste segregation and recycle more. By 2025 we will have launched annual NHS Scotland-wide communication campaigns.

Water stewardship

33. There are local examples where Health Boards have been at the forefront of innovation in environmental stewardship. NHS Highland, working with the One Health Breakthrough Partnership (www.ohbp.org), delivered a project at Caithness General Hospital in Wick which was awarded the Alliance of Water Stewardship (AWS) standard[11].

34. The project aimed to reduce the pollution caused by medicines emanating from the hospital on aquatic ecosystems and involved carrying out an in-depth analysis of changes in the quality of water from its source, Loch Calder, to Caithness General Hospital and onwards to the local wastewater treatment plant. It is thought that that between 30 and 90 per cent of all medicines taken orally can be excreted into the waste-water system as an active substance in urine. We want the processes used in the research, and what has been learned, to be applied to hospitals and other healthcare sites nationally.

35. NHS Ocean is an initiative which aims to conserve and protect coastal and marine ecosystems through minimising harm resulting from the procurement and delivery of healthcare whilst increasing awareness of the benefits to human health and wellbeing from healthy seas, coasts, and waterways. Resources to help Health Boards understand why oceans are so critical to the future of both planetary and human health and actions that can be taken are available at: Oceanic And Human Health | NHS Ocean.

Land stewardship

36. The Scottish Government Land Rights and Responsibilities Statement (LRRS) states that the people and organisations that make decisions relating to land should recognise and act in line with their responsibilities, as well as their rights.[12]

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[11] Caithness General Hospital is the first hospital in the world, and the only site of any kind in the UK, to be recognised with the Alliance of Water Stewardship standard.
[12] Scottish land rights and responsibilities statement - gov.scot (www.gov.scot)

As a significant landowner, NHS Scotland will take account of the following LRRS principles in decisions about our land:

- The overall framework of land rights, responsibilities and public policies should promote, fulfil and respect relevant human rights in relation to land, contribute to public interest and wellbeing, and balance public and private interests. The framework should support sustainable economic development, protect and enhance the environment, help achieve social justice and build a fairer society
- There should be a more diverse pattern of land ownership and tenure, with more opportunities for citizens to own, lease and have access to land
- More local communities should have the opportunity to own, lease or use buildings and land which can contribute to their community's wellbeing and future development
- The holders of land rights should exercise these rights in ways that take account of their responsibilities to meet high standards of land ownership, management and use. Acting as the stewards of Scotland's land resource for future generations they contribute to sustainable growth and a modern, successful country
- There should be improved transparency of information about the ownership, use and management of land, and this should be publicly available, clear and contain relevant detail
- There should be greater collaboration and community engagement in decisions about land

37. The Scottish Land Use Strategy[13] also promotes the responsible stewardship of Scotland's resources to deliver more benefits to Scotland's people as a key objective. Its ten principles of sustainable land use are complemented by the LRRS. This also links to our work on Community Wealth Building in the Sustainable Communities section.

38. The Land Rights and Responsibilities Protocol[14] promotes good stewardship and high standards of land management across Scotland. We will practice good stewardship in the decisions we make about our land by taking account of the long-term needs of local communities and public benefits in support of wider national outcomes.

Actions we will take

39. To manage the risk of environmental harm from our activities and promote good environmental stewardship we will:

- ✓ implement and maintain a comprehensive Environmental Management System
- ✓ report on environmental risks, compliance and continuous improvement at Board level

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[13] Land use - getting the best from our land: strategy 2021 to 2026 - gov.scot (www.gov.scot)
[14] 5f457b3679645_LRRS Protocol on Good Stewardship of Land.pdf (landcommission.gov.scot)

- ✓ cascade environmental management awareness across departments
- ✓ trial methods to eliminate pharmaceutical residues from hospital waste-water, building on the work carried out by NHS Highland and the One Health Breakthrough Partnership at Caithness General Hospital
- ✓ put the Land Rights and Responsibilities Protocol into practice regarding decisions about NHS owned land

40. To reduce the impact of our waste we will:
- ✓ report 100% of waste to the Waste Data Reporting Tool
- ✓ analyse the data to identify opportunities to minimise waste and to maximise the proportion of our waste that is sent for reuse and recycling
- ✓ report our performance against national waste and recycling targets
- ✓ monitor waste reduction initiatives
- ✓ review the provision of recycling waste containers on our estates and maximise recycling service provision wherever possible
- ✓ implement annual communication and behaviour change campaigns to maximise reuse and recycling
- ✓ require our waste contractors to report the end destinations of our waste so that we can ensure that it is sent to reputable facilities and that it does not cause environmental harm here or overseas
- ✓ require our contractors to report the contamination levels of our waste so that we can understand and address any issues
- ✓ update our policies to reflect anticipated changes to national waste policy (extended producer responsibility, deposit return, plastics tax)

Valuing, protecting and managing our greenspace

'Nature itself is the best physician' – Hippocrates

41. There is a wealth of good quality evidence demonstrating the positive impact that contact with nature can have on physical and mental health[15]. Access to high quality greenspace can provide health-enhancing opportunities for patients, staff, and communities and have a positive impact on biodiversity through, for example, planting native woodland, natural flood management, and managing grass and flower beds to support pollinators. It also contributes to carbon capture, encouraging active travel, reducing car dependency and mitigating the negative effects of air pollution, excessive noise, heat and flooding.

42. NHS Scotland is a custodian of significant areas of greenspace and we are committed to working with our local communities and other partners to develop and manage this public asset in a way which improves public health, reduces health inequalities and helps to address biodiversity loss and the climate emergency.

Where we are now

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[15] Research from the World Health Organisation and National Institute for Health and Care Excellence shows contact with nature and access to greenspace is particularly good for our mental health and wellbeing

Through its NHS Greenspace Demonstration Project, the Green Exercise Partnership of national public bodies for health and environment has worked with ten area Health Boards to show the range of benefits that flow from investment in, and management of, NHS greenspace.[16] The Project has delivered physical greenspace improvements across 87 hectares of NHS owned land and shown that it is possible to make a real difference in the provision, management and regular use of greenspace across a range of health and care settings.[17]

A number of Health Boards have made good progress in building capacity and providing leadership in the management and regular use of greenspace. For example, NHS Forth Valley recently won the Building with Nature National Award for outside space at Forth Valley Royal Hospital and Larbert Woods.[18] NHS Lothian has pioneered a strategic approach to managing local greenspace through their Greenspace and Health Strategic Framework[19] and carried out a biodiversity audit and climate change assessment of their estate as part of a natural capital approach to valuing their green assets.[20]

Despite these efforts, the NHS outdoor estate remains an often underused, uninspiring, under-appreciated and undervalued resource overall. Maintenance costs with no immediate benefit, competing demands for land use and budgetary constraints mean that NHS greenspace can be perceived as a liability instead of an asset.

43. We want to realise the full potential of the greenspace resource across the NHS Scotland estate. Our aim is that NHS greenspace is embedded as a core component of Scotland's health and social care services and managed to improve provision, access, quality and use. We will develop resources and guidance and provide clinical and non-clinical staff with the knowledge, skills and commitment to deliver on our ambition.

44. We will work with partners to develop and implement a natural capital accounting approach to valuing our greenspace for climate, environmental and health benefits. We will provide leadership and expertise in promoting the management and use of NHS greenspace and guiding its future development.

45. Key to progress will be gaining a better understanding of the extent, quality and accessibility of our greenspace. Pilot work has been carried out to digitally map the greenspace of three Health Boards and this will be extended to the whole NHS estate.

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[16] NHS Greenspace Demonstration Project - Unlocking the Potential of NHS Greenspace for Health and Wellbeing | NatureScot
[17] https://www.nature.scot/green-ways-health-case-studies
[18] https://nhsforthvalley.com/celebratingsuccess/fvrh-larbert-woods-wins-building-with-nature-award
[19] NHS Lothian Greenspace and Health Strategic Framework | Greenspace Scotland
[20] BiodiversityClimateChangeAssessmentSummary.pdf (nhslothian.scot)

46. All local Health Boards that haven't done so already will develop and implement a strategic framework for greenspace which set out local needs and priorities for the area, including the provision and resourcing of future green health activities. Working with the environment and other sectors will ensure a whole system approach to NHS greenspace and bring together shared objectives.[21]

47. Management plans should be prepared for all major sites to plan future change and maximise opportunities to enhance biodiversity, address climate change and increase the use of the grounds for staff, patients, visitors and the community.

Actions we will take

48. To ensure the development and management of NHS greenspace in a way which improves public health, reduces health inequalities and helps to address biodiversity loss and the climate emergency we will:
    - ✓ develop and implement a strategic framework for greenspace at the local Health Board level
    - ✓ provide clinical and non-clinical staff with the knowledge, skills and commitment they need to maximise the contribution of NHS greenspace in healthcare settings
    - ✓ digitally map the extent, quality and accessibility of NHS greenspace
    - ✓ use natural capital approaches to assess and value the contribution of NHS greenspace to delivering climate, sustainability and health outcomes
    - ✓ identify opportunities for restoring natural habitats, increasing biodiversity value and delivering nature based solutions
    - ✓ link path networks and green spaces within and to the health care estate to create green networks that encourage walking and cycling for relaxation, exercise, meetings and active travel
    - ✓ improve public access to NHS greenspace, particularly where there is no or unequal local access
    - ✓ prepare site-based management plans for all major sites to improve the greenspace resource and its use

Sustainable development of the NHS estate

> 'Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.'[22]

49. Whether we are investing in new buildings and grounds or undertaking major refurbishments of existing facilities, sustainability needs to be at the heart of our approach. Recent good practice demonstrates that net-zero operational carbon and delivering in a truly sustainable way is possible. Our challenge is to extend this good practice to all future investments and to continue to make improvements.

Where we are now

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[21] NHS Greenspace Demonstration Project - full report 2020.pdf (nature.scot)
[22] World Health Organization Definition

In June 2019, NHS Chief Executives made a commitment that from April 2020 all new NHS facilities and major refurbishments will be designed to have net-zero greenhouse emissions or, where a net-zero design is not currently practical, will have a clear road map setting out how they will achieve net-zero emissions by 2045. The Balfour Hospital is the first fully electric hospital in Scotland and the new Parkhead Health and Social Care Centre will be the first new fully electric community facility.

The National Design Assessment Process (NDAP) is a mandatory requirement for new healthcare facilities and aims to ensure compliance with project specific design standards and national standards for healthcare design and sustainability.[19] Scottish Government also mandates the use of NHS Scotland Achieving Excellence in Design Evaluation Tool. An NHS Scotland Sustainable Construction and Design Guide (SHTN 02-01) has been produced and is currently being piloted. [23]

50. Where there is a need for new healthcare facilities, we want both the buildings and grounds to be safe, nature-rich, sustainable, resilient and accessible. Following an initial pilot period, the use of the NHS Scotland Sustainable Construction and Design Guide (SHTN 02-01) will be mandatory for all new healthcare facilities and refurbishments so that design quality and sustainability principles are fully integrated at each stage of the process. All new facilities and major refurbishments will be built to produce net-zero operational emissions or have a clear plan to achieve net-zero by 2040 and will be able to withstand the impacts of a changing climate.

51. In light of the Scottish Government's aim for publically owned buildings to use zero emissions heating by 2038, this strategy also commits NHS Scotland's new facilities to either be designed to use renewable heating systems from the beginning of their use or to have a clear plan to do so by 2038 where a renewable heating system is not currently practicable.

52. Achieving net-zero emissions will be affected by our ability to adapt to climate change risks, particularly as we transition to an electrified system. All new healthcare facilities and energy infrastructure must be designed to be able to withstand the impacts of our changing climate. Flood risk, higher temperatures, winds and storms, water scarcity and intense rainfall are all likely to present challenges in the future and building in resilience to these impacts now will avoid the need for costly retrofitting in the future as well as ensuring the safety of patients, staff and visitors.

53. Rather than an add-on, positive planning and investment in greenspace can deliver multiple benefits. The relationship between building design, greenspace and other green infrastructure such as green roofs and rain gardens, and wellbeing is well documented. They contribute to a strong sense of place and support water management, heat reduction, renewable energy production,

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[23] https://www.nss.nhs.scot/publications/sustainable-design-and-construction-sdac-guide-shtn-02-01/

accessible and inviting circulation and links with the wider community. The quantity and quality of greenspace at each location should be maximised to provide opportunities for patients, staff and visitors to exercise and relax as well as for increasing biodiversity, improving local air quality and providing shade.

54. To ensure the sustainable development of new builds and major refurbishments Health Boards will:

- ✓ use the NHS Scotland Sustainable Design and Construction Guide in all NHS Scotland new buildings and major refurbishments
- ✓ assess the full carbon consequences of new builds
- ✓ design all new facilities and major refurbishments to produce net-zero emissions and use renewable heat
- ✓ ensure that all new facilities are not at risk from flooding now or likely to be in the future taking account of climate change
- ✓ ensure that all buildings are sited and constructed to minimise overheating and be resilient to winds, storms and intense rainfall
- ✓ design new facilities for the future taking account of flood risk, increased temperatures and the occurrence of heatwaves
- ✓ incorporate flood resilient materials and green infrastructure including green roofs, rain gardens and SuDS into all new facilities and retrofit existing sites in a way which also benefits people and increases the biodiversity value of the site
- ✓ maximise the quantity and quality of greenspace at the location of all new healthcare facilities and design to promote equality and healthy choices
- ✓ integrate path networks and greenspaces within and to the healthcare estate to create green networks that encourage walking and cycling for relaxation, exercise, meetings and active travel
- ✓ account for and compensate any impacts from the development of new healthcare facilities and refurbishments on biodiversity with equivalent and additional gains
- ✓ use a master planning approach and quality standards such as Building with Nature to integrate well designed greenspace and green infrastructure into all new and retrofitted healthcare facilities

Sustainable buildings and land: summary of actions

Theme	Action	Relevant SDG
Reducing our building emissions	1. Prepare and implement net-zero route maps to use renewable heat for all our owned buildings by 2038 and achieve net-zero emissions for all our buildings by 2040 or earlier where possible 2. Use Property and Asset Management Strategies to support decarbonisation 3. Take action to improve energy efficiency including those set out in the Annex and conform with ISO 50001 or equivalent 4. Apply to the £200 million Green Public Sector Estate Decarbonisation Fund 5. Maximise the use of renewable electricity including better use of roofs and adjacent grounds for on-site renewable energy and heat generation 6. Explore options for entering into power purchase agreements and heat purchase agreements with local renewable electricity and heat providers 7. Identify and implement measures to improve water efficiency	3 GOOD HEALTH AND WELL-BEING 7 AFFORDABLE AND CLEAN ENERGY 13 CLIMATE ACTION 15 LIFE ON LAND
Adapting to climate change impacts	1. Conduct a Climate Change Risk Assessments covering all areas of service 2. Implement a climate change adaptation plan to ensure resilience of service under changing climate conditions 3. Develop Climate Change Risk Assessments and adaptation plans along with net-zero route maps to maximise alignment and synergy 4. Ensure that Climate Change Risk Assessments and adaptation plans are integrated with other strategies, risk assessments and business continuity plans 5. Work towards the requirements of ISO14090: Adaptation to climate change — Principles, requirements and guidelines enabling the prioritisation and development of effective, efficient and deliverable adaptation 6. Input to the development of wider adaptation strategies and related activity including local authority open space strategies 7. Raise awareness of the potential for overheating and actions that can be taken by staff, patients, visitors and contractors 8. Prioritise passive cooling measures over mechanical cooling wherever possible.	3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION 15 LIFE ON LAND

Theme	Action	Relevant SDG
	9. Establish a programme of monitoring to capture data that will enable a robust assessment of the nature and severity of overheating at in-patient facilities 10. Incorporate water saving measures wherever possible 11. Develop and manage greenspace and other green infrastructure such as green roofs and rain gardens to address risks 12. Raise awareness of the potential for flooding and actions that can be taken by staff, patients, visitors and contractors 13. Assess the risk of flooding for all sites, key transport and access routes, supporting infrastructure and workforce based on current and future projected climate conditions 14. Consider opportunities to develop and manage greenspace and other green infrastructure such as green roofs and rain gardens to help mitigate flood risks	
Environmental Stewardship	1. Implement and maintain a comprehensive Environmental Management System 2. Report on environmental risks, compliance and continuous improvement at Board level 3. Cascade environmental management awareness across departments 4. Trial methods to eliminate pharmaceutical residues from hospital waste-water, building on the work carried out by NHS Highland and the One Health Breakthrough Partnership at Caithness General Hospital 5. Put the Land Rights and Responsibilities Protocol into practice regarding decisions about NHS owned land 6. Report 100% of waste to the Waste Data Reporting Tool 7. Analyse the data to identify opportunities to minimise waste and to maximise the proportion of our waste that is sent for reuse and recycling 8. Report our performance against national waste and recycling targets 9. Monitor waste reduction initiatives 10. Review the provision of recycling waste containers on our estates and maximise recycling service provision wherever possible 11. Implement annual communication and behaviour change campaigns to maximise reuse and recycling	3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION 6 CLEAN WATER AND SANITATION 15 LIFE ON LAND

Theme	Action	Relevant SDG
	12. Require our waste contractors to report the end destinations of our waste so that we can ensure that it is sent to reputable facilities and that it does not cause environmental harm here or overseas 13. Require our contractors to report the contamination levels of our waste so that we can understand and address any issues 14. Update our policies to reflect anticipated changes to national waste policy (extended producer responsibility, deposit return, plastics tax).	
Valuing, protecting and managing our greenspace	1. Develop and implement a strategic framework for greenspace at the Area Health Board level 2. Provide clinical and non-clinical staff with the knowledge, skills and commitment they need to maximise the contribution of NHS greenspace in healthcare settings 3. Digitally map the extent, quality and accessibility of NHS greenspace 4. Use natural capital approaches to assess and value the contribution of NHS greenspace to delivering climate, sustainability and health outcomes 5. Identify opportunities for restoring natural habitats, increasing biodiversity value and delivering nature based solutions 6. Link path networks and green spaces within and to the health care estate to create green networks that encourage walking and cycling for relaxation, exercise, meetings and active travel 7. Improve public access to NHS greenspace, particularly where there is no or unequal local access 8. Prepare site-based management plans for all major sites to improve the greenspace resource and its use	3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION 15 LIFE ON LAND
Sustainable development of the NHS estate	1. Use the NHS Scotland Sustainable Design and Construction Guide in all NHS Scotland new buildings and major refurbishments 2. Assess the full carbon consequences of new builds 3. Design all new facilities and major refurbishments to produce net-zero emissions and use renewable heat 4. Ensure that all new facilities are not at risk from flooding now or likely to be in the future taking account of climate change	3 GOOD HEALTH AND WELL-BEING 7 AFFORDABLE AND CLEAN ENERGY 13 CLIMATE ACTION

Theme	Action	Relevant SDG
	5. Ensure that all buildings are sited and constructed to minimise overheating and be resilient to winds, storms and intense rainfall 6. Design new facilities for the future taking account of flood risk, increased temperatures and the occurrence of heatwaves 7. Incorporate flood resilient materials and green infrastructure including green roofs, rain gardens and SuDS into all new facilities and retrofit existing sites in a way which also benefits people and increases the biodiversity value of the site 8. Maximise the quantity and quality of greenspace at the location of all new healthcare facilities and design to promote equality and healthy choices 9. Integrate path networks and greenspaces within and to the healthcare estate to create green networks that encourage walking and cycling for relaxation, exercise, meetings and active trave	15 LIFE ON LAND

Sustainable Travel

1. In 2019, emissions from domestic transport made up 25% of Scotland's total greenhouse gas emissions. To change this, the Scottish Government aims to transform Scotland's transport system from one based on fossil fuels to one based on renewable energy and active travel. Seventeen per cent of journeys in Scotland in 2019 were under 1 km, and more than half (54%) were under 5 km – these shorter trips offer a real opportunity for a significant shift to active travel.

2. NHS Scotland will support this shift. By making it easier to walk, wheel, cycle and take public transport to use NHS services, we will improve access for all, particularly those with low incomes, improve health and help tackle the climate emergency. By reducing the need to travel and supporting the shift to active travel and vehicles powered by renewables, we will help improve air quality and cut carbon emissions.

3. In this part of the strategy, we set out our plans to support the wider transformation of transport across the country and to remove fossil fuelled vehicles from the NHS fleet. We will do this in a way which supports the Scottish Government's National Transport Strategy 2[24] and its aims of reducing inequalities by providing fair access to the services we need and improving health and wellbeing.

Reducing the need to travel

'There is scientific consensus that exposure to air pollution is harmful to people's health in terms of premature mortality and morbidity, mainly related to respiratory and cardiovascular disease.'[25]

4. Changing how people can access the services they need, in the right way for where they live, can benefit the health of our patients, our staff and our planet. The Scottish Government aims to reduce the number of kilometres travelled by car in Scotland by 20% by 2030.[26] This will help to reduce the demand for both renewable and fossil fuels and promote more sustainable and healthy ways of travelling such as walking, wheeling, cycling and public transport.

Where we are now

Before the pandemic, the vast majority of NHS services were delivered in person with some patients having to travel large distances for routine appointments, particularly in remote and rural areas. Working from home was the exception. The pandemic resulted in a rapid growth in online and telephone consultations and in home working.

Health Boards are already taking forward work to support active travel and public transport but there is much still to be done. Data gathered by individual NHS Boards

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[24] National Transport Strategy 2
[25] Cleaner Air for Scotland 2 - Towards a Better Place for Everyone Para. 23 available at: Cleaner Air for Scotland 2 - Towards a Better Place for Everyone - gov.scot (www.gov.scot)
[26] Climate Change Plan Update 2020 (complete reference)

suggests that current rates of travel to main hospital sites by staff, patients and visitors are approximately:

- Active travel: 2.8% of journeys
- Public Transport: 7.4% of journeys
- Car use: 89.2% of journeys

However, surveys of this nature are not widespread and are carried out infrequently.

5. We will support the continued use and expansion of NHS Near Me and other forms of remote consultation where it is clinically appropriate. This is backed by £3.4 million of annual funding from the Scottish Government and is of particular benefit to people who live in remote areas. We know that not everybody has good online access or feels confident in using this technology, which risks increasing unequal access to services, and we will continue working to address this.

6. Thousands of NHS staff have been working from home throughout the pandemic and we will support them to continue to do so. The current Homeworking Policy that sets the standard for NHS Scotland is being refreshed and modernised to reflect the changed working environment.

7. NHS Scotland seeks to find the right travel solutions for each of the communities we serve, maximising health and wellbeing through both the care we give and the way it is provided. We support the Scottish Government's ambition to create twenty-minute neighbourhoods – places where things that people need for everyday life are all located within a twenty-minute walking distance. We aim to bring care closer to home, to make it more accessible to people, and we will work with communities and other partners to make twenty-minute neighbourhoods a reality across the country.

Actions we will take

8. To help reduce the number of journeys taken by car we will:

   ✓ carry out annual travel surveys at each of our sites to monitor shifts in modes of transport in travel to and from NHS sites
   ✓ establish a target to reduce the number of journeys taken by car (staff, patient and visitors)
   ✓ support the continued use and expansion of NHS Near Me
   ✓ refresh and modernise our Homeworking policy
   ✓ plan new facilities in the community using the principles of twenty-minute neighbourhoods
   ✓ explore options for the better integration of care to reduce the number of separate appointments and journeys

Promoting active travel

> 'If physical activity were a drug, we would refer to it as a miracle cure, due to the

great many illnesses it can prevent and help treat.'[27]

9. Walking, wheeling and cycling are the healthiest ways to travel - with the lowest environmental impact. NHS Scotland will encourage staff, patients and visitors to use them where they can. For short journeys, active travel is the most convenient and affordable mode of transport.

10. We know that increased physical activity and time spent outdoors can improve physical health and mental wellbeing[28]. Road transport accounts for over 20% of greenhouse gas emissions in the UK and causes poor air quality and noise pollution[29]. Furthermore, in 2020 there were 1,580 reported deaths and 131,220 casualties on roads in the UK[30]. The sum of which has extensive consequences on society and further increases pressure on the NHS to deliver health care across Scotland.

11. Active travel can also bring other health benefits. Creating the space and infrastructure for people to walk, wheel and cycle can bring opportunities for creating green and blue spaces on the NHS estate which have proven mental health benefits and supports the improvement of local biodiversity. We are working to make these spaces and travel options accessible to everyone.

Where we are now

NHS Scotland has already been working towards promoting active travel to and from its sites. The Cycle to Work scheme allows NHS employees to purchase bicycles and associated equipment through salary sacrifice options. NHS employees can attend free Essential Cycle Skills training, and local bike mechanics attend NHS sites to carry out bike checks and offer cycling advice. Some boards offer pool bicycles, cargo bikes and adaptive cycles for NHS-related travel and there have been improvements in bike storage and shower/changing facilities across the estate.

Several Health Boards have used Cycling Scotland's 'Cycling Friendly Employer Development Fund' and have received the 'Cycle Friendly Employer Award'.

Six health board are working in partnership with Sustrans through the Workplace Engagement Programme and National Partnerships Strategy.

Actions we will take

12. To support an increase in active travel to NHS sites we will:

   ✓ work with local authorities, third sector organisations and other partners to link our NHS facilities to active travel routes and networks in the wider community

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[27] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/832868/uk-chief-medical-officers-physical-activity-guidelines.pdf
[28] UK Government, Cycling_and_walking_for_individual_and_population_health_benefits
[29] UK Government, Transport and Air Emissions
[30] UK Government, Road Casualties Year Ending June 2020

- ✓ make our outdoor spaces and sites easier, safer and more enjoyable for people to walk, wheel and cycle on including through improving wayfinding
- ✓ work towards every Health Board achieving the 'Cycling Friendly Employer Award' from Cycling Scotland by no later than 2026
- ✓ provide detailed information to all our patients and visitors on how to avoid using a car when accessing our sites including details of cycle routes and paths, cycle parking, facilities and public transport options
- ✓ actively promote the health, environmental and cost benefits of active travel to our staff, patients, and visitors, providing information and advice on personal travel planning
- ✓ ensure that new NHS facilities (including pop-up clinics, vaccination centres and screening sites) prioritise access for people travelling actively and sustainably

Promoting public and community transport

13. We want all our sites to be easily accessible for staff, patients and visitors by public or community transport. Public transport is a more physically active way of travelling than private car and has a lower environmental impact as it is more resource efficient. Where public transport is not a realistic option, we want community-led transport to be available to help people access healthcare services.

14. Improving public and community transport links will also help with our ambitions to reduce health inequalities, as it reduces reliance on cars and car ownership which are difficult for people on lower incomes to access. We will work closely with local authorities to identify where public transport links to NHS sites need to be improved and accessibility by public transport will be a fundamental consideration in decisions about where to develop new NHS facilities.

15. NHS Scotland will develop links with the Community Transport Association UK and the volunteer community transport groups to make it easier for patients to access their healthcare in the most effective and streamlined way. We are aware that some people find it difficult to use public transport for good reason and will ensure that appropriate and dignified disabled access to public and community transport options is a key part of these discussions.

Actions we will take

16. To increase the number of journeys made by shared transport we will:

- ✓ work closely with local authorities to identify where public transport links to NHS sites need to be improved
- ✓ make accessibility by public transport a fundamental consideration in decisions about where to develop new NHS facilities
- ✓ work with Community Transport Association UK and volunteer community transport groups to improve patient access

Decarbonising our fleet and business travel

17. We are committed to ensuring that our whole fleet, both owned and leased, has net-zero greenhouse gas as early as possible. We want to encourage sustainable travel by NHS staff for work purposes and reduce the need to travel by private vehicle.

18. We want to use the power of our own actions and our purchasing power as a large organisation to help bring about the shift in vehicle technology that is necessary to protect us all from climate change.

Where we are now

NHS Scotland owns and operates around 9,300 vehicles, ranging from leased cars to ambulances to heavy goods vehicles. NHS-owned fleet related emissions are monitored and reported as part of each NHS Board's annual Public Bodies' Climate Change Duties Report. The equivalent of around 60,000 tonnes of carbon dioxide are emitted by the NHS-owned fleet annually.

Business mileage claims data is collected by NHS Boards primarily for reimbursement. However, this is not standardised and often does not allow accurate calculation of associated greenhouse gas emissions.

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19. By 2025, we will have replaced our fossil-fuelled small and medium vehicles with vehicles powered by renewable alternatives. To support the transformation of our fleet, we will install electric vehicle charging points throughout the NHS estate and an NHS Scotland Electric Vehicle Charging Infrastructure Guide has already been produced (NHSScotland EV Infrastructure Guidance (nhssustainabilityaction.co.uk) . We will provide training to staff to help them start using electric vehicles.

20. To monitor our progress, Health Boards will include the greenhouse gas emissions arising from business travel (including grey fleet – where staff use their own vehicles for work) as part of their annual Climate Change reports. We will also take steps to support the development of other types of renewable power for vehicles such as hydrogen and, by 2030, we will no longer buy or lease large fossil-fuelled vehicles.

21. We will explore our options for using e-cargo bikes to transfer goods between NHS sites, building on work already carried out at Guy's and St Thomas's Hospital in London.[31] We will also explore ways of minimising travel in the delivery of our services through actions like freight consolidation and the use of Geographical Information Systems for better route planning.

22. NHS Scotland, in collaboration with Scottish Government, will review and amend the NHS Scotland mileage reimbursement rates and allowances to encourage staff travelling by sustainable means including by bicycle.

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[31] EST007-01-ESTDFT-Electrifying-last-mile-deliveries-guide-WEB-02.pdf (energysavingtrust.org.uk)

Actions we will take

23. To accelerate the decarbonisation of our fleet and business travel we will:

- ✓ replace our fleet of fossil-fuelled small and medium vehicles with vehicles powered by renewable alternatives by 2025
- ✓ no longer buy or lease large fossil-fuelled vehicles by 2030
- ✓ include greenhouse gas emissions arising from business travel (including grey fleet) as part of our annual Climate Change reports
- ✓ explore our options for using e-cargo bikes to transfer goods between NHS sites
- ✓ explore ways of minimising travel in the delivery of our services, e.g. through freight consolidation and the use of Geographical Information Systems for better route planning
- ✓ create travel policies which state that where business travel is unavoidable, we apply a travel hierarchy, promoting active travel, public transport, car sharing and low carbon vehicles before single occupancy standard vehicles
- ✓ review and amend NHS Scotland mileage reimbursement rates and allowances to encourage staff travelling by sustainable means including by bicycle
- ✓ no longer support travel by domestic flight where suitable train or bus alternatives, video or teleconferencing are available and practical

Climate change and access

24. Storms, heavy rain, landslides and heatwaves can all affect infrastructure (transport routes, power, ICT and water supply) with failures resulting in disruption affecting access to health facilities for patients, staff and suppliers. Such disruption also causes difficulties for medical staff, including paramedics, to reach people in their own homes and elsewhere.

Where we are now

Flooding is a key risk to infrastructure in Scotland, with recent events including storms Ciara and Dennis, which disrupted road, rail, airline and power services, and the 2020 breach of the Union Canal that resulted in significant damage to the Edinburgh-Glasgow rail line. Extreme weather events such as storms, lightning and high winds have had significant impacts on infrastructure causing disruption and delay.

Research[32] shows that the emergency services are particularly vulnerable to surface water flooding and even low magnitude flooding can reduce compliance with mandatory response times.

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[32] Yu, D., Yin, J., Wilby, R.L. *et al.* Disruption of emergency response to vulnerable populations during floods. *Nat Sustain* **3,** 728–736 (2020). https://doi.org/10.1038/s41893-020-0516-7

19% of Scotland's coastline is at risk of erosion within the next 30 years with between half and a third of all coastal buildings, roads, rail and water networks located in these erodible sections.

25. Many of the issues associated with transport and infrastructure disruption are outside the control of NHS Scotland but can have a considerable impact on the delivery of care. It is therefore important that Health Boards work closely with infrastructure owners and managers, Integrated Joint Boards, local authorities and SEPA to understand the risks, especially for critical routes in remote rural areas where there are no alternative routes.

26. The Scottish Ambulance Service will consider current and future climate impacts in planning the delivery of its services.

Actions we will take

27. To address the risks to transport infrastructure we will:

   ✓ work with transport infrastructure partners to consider access issues for patients, staff and suppliers in their Climate Change Risk Assessments
   ✓ the Scottish Ambulance Service will identify areas and routes at risk and use the information to plan the distribution of response stations and develop contingency plans

Sustainable Travel: summary of actions

Theme	Action	Relevant SDG
Reducing the need to travel	1. Carry out annual travel surveys at each of our sites to monitor shifts in modes of transport in travel to and from NHS sites 2. Establish a target to reduce the number of journeys taken by car (staff, patient and visitors) 3. Support the continued use and expansion of NHS Near Me 4. Refresh and modernise our Homeworking policy 5. Plan new facilities in the community using the principles of twenty-minute neighbourhoods 6. Explore options for the better integration of care to reduce the number of separate appointments and journeys	3 GOOD HEALTH AND WELL-BEING 7 AFFORDABLE AND CLEAN ENERGY 13 CLIMATE ACTION
Promoting active travel	1. Work with local authorities, third sector organisations and other partners to link our NHS facilities to active travel routes and networks in the wider community 2. Make our outdoor spaces and sites easier, safer and more enjoyable for people to walk, wheel and cycle on including through improving wayfinding 3. Work towards every Health Board achieving the 'Cycling Friendly Employer Award' from Cycling Scotland by no later than 2026 4. Provide detailed information to all our patients and visitors on how to avoid using a car when accessing our sites including details of cycle routes and paths, cycle parking, facilities and public transport options	3 GOOD HEALTH AND WELL-BEING 7 AFFORDABLE AND CLEAN ENERGY 10 REDUCED INEQUALITIES 13 CLIMATE ACTION
Promoting public and community transport	1. Work with local authorities to identify where public transport links to NHS sites need to be improved 2. Make accessibility by public transport a fundamental consideration in decisions about where to develop new NHS facilities 3. Work with Community Transport Association UK and volunteer community transport groups to improve patient access	3 GOOD HEALTH AND WELL-BEING 10 REDUCED INEQUALITIES

Theme	Action	Relevant SDG
Decarbonising our fleet and business travel	4. Replace our fleet of fossil-fuelled small and medium vehicles with vehicles powered by renewable alternatives by 2025 5. No longer buy or lease large fossil-fuelled vehicles by 2030 6. Include greenhouse gas emissions arising from business travel (including grey fleet) as part of our annual Climate Change reports 7. Explore our options for using e-cargo bikes to transfer goods between NHS sites 8. Explore ways of minimising travel in the delivery of our services, e.g. through freight consolidation and the use of Geographical Information Systems for better route planning 9. Create travel policies which state that where business travel is unavoidable, we apply a travel hierarchy, promoting active travel, public transport, car sharing and low carbon vehicles before single occupancy standard vehicles 10. Review and amend NHS Scotland mileage reimbursement rates and allowances to encourage staff travelling by sustainable means including by bicycle 11. No longer support travel by domestic flight where suitable train or bus alternatives, video or teleconferencing are available and practical	3 GOOD HEALTH AND WELL-BEING 7 AFFORDABLE AND CLEAN ENERGY 13 CLIMATE ACTION
Climate change and access	12. Work with transport infrastructure partners to consider access issues for patients, staff and suppliers in their Climate Change Risk Assessments 13. The Scottish Ambulance Service will identify areas and routes at risk and use the information to plan the distribution of response stations and develop contingency plans	3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION

Sustainable Goods & Services

'It is estimated that 80% of Scotland's global climate emissions are linked to the production, consumption and waste of products and resources.'[33]

1. Earth Overshoot Day[34] marks the date when our demand for resources exceeds what Earth can regenerate in that year. In 2021, it was 29th July. We need to reduce our demand for resources and avoid accumulating waste, we need to value the resources that we do consume by designing them to last, reusing them and recycling them when they reach the end of their useful life.

2. To become an environmentally and socially sustainable health service we need to embrace a circular economy, using our purchasing power to encourage our suppliers to cut their greenhouse gas emissions to net-zero and limit the negative environmental and social impacts of our supply chain. The harm caused by the over-use of resources is very real but it is often hidden from sight, and there is a role for everyone in the NHS in helping to reduce these impacts. The social impacts from our use of resources include risks to workers' health and safety, child and forced labour and health and environmental harm from the use of hazardous materials. A whole range of actions are needed to help us create a truly sustainable net-zero health service.

3. This section of our strategy focuses on our actions to:

   - create circularity in our supply chains and reduce waste by maximising repair and reuse
   - reduce the environmental and social impacts from our supply chains
   - increase the resilience of our supply chain to climate change
   - improve how we deal with equipment, material and goods at the end of their useful life

4. Many of the goods and services we purchase are also bought by other Scottish bodies or other NHS organisations across the UK. We will work collaboratively with other Scottish public sector organisations to influence common sectors and we will seek to work with all UK health focused groups to engage effectively with the global multinational supply base to increase our supply chain resilience and support a rapid greenhouse gas emissions reductions.

Circular Economy

'In our existing economy, we "take, make and dispose". We take resources from the ground, air and water; we make them into products and structures; then we dispose of them. We need to move to a circular economy where we **reduce** the demand for raw material in products; encourage **reuse** and **repairs** through responsible production;

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[33] Developing Scotland's circular economy: consultation on proposals for legislation
https://www.gov.scot/publications/delivering-scotlands-circular-economy-proposals-legislation/pages/1/
[34] Earth Overshoot Day https://www.overshootday.org/

and **recycle** waste and energy to maximise the value of any waste that is generated.'[35]

5. The climate and nature emergencies are closely linked to the quantity of products that we use and consume, how they are made and how they are disposed of. Over 80% of Scotland's carbon footprint comes from the goods we use and consume and 90% of global biodiversity loss is caused by the extraction of resources and processing. A circular economy extracts less from the planet, re-uses what we've already taken and reduces our waste

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6. Creating a circular economy is a vital part of the Scottish Government's plan for securing a green recovery from the COVID-19 pandemic and achieving net-zero. Further, the change from a linear economy (take, make, dispose) to a circular economy (renew, remake, share) is expected to significantly support the attainment of the UN Sustainable Development Goals. NHS Scotland, in light of its purchasing power, has a key role to play in enabling Scotland to move away from a throwaway, linear economy to a circular economy.

Where we are now

There is already some circularity in Scotland's health supply chain with 13 million medical instruments being re-processed every year by our decontamination units. Other areas such as wheelchair services and audiology devices have a repair aspect provided by key centres within boards to support the continued re-use of products. All medical physics departments have an equipment end of use policy that involves recycling with the supplier, donation to a charitable cause or re-sell through a third party auctioneer.

NHS Scotland purchases £2.5 billion worth of goods and services each year from around 8000 suppliers and much of the NHS's carbon footprint is created by the manufacture and supply of medicines, chemicals, equipment and other materials.

7. In making decisions about the goods we buy, we will choose products which have been designed for durability, can be repaired and upgraded, and can be recycled at the end of their useful life. We already use a reuse and redistribution platform to share redundant items like office furniture with colleagues and partners.

8. The Covid-19 pandemic has resulted in an increased use of Personal Protective Equipment (PPE) within both the NHS and wider society. This is necessary to stop the spread of infection, but it has a negative environmental impact due to increased consumption and waste. We have established a programme of work to reduce the amount of PPE we use, increase the use of reusable PPE within NHS Scotland and increase those items that are recycled at the end of their use (both single use and multi-use items).

9. In taking forward this work, we will look at how the materials used for PPE, which are also commonly used in other healthcare products, can be more effectively

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[35] Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update - gov.scot (www.gov.scot) Chapter 5

recycled so that the benefits of this work can be applied to other products. We will work with suppliers and Infection Prevention and Control to trial innovative cleaning and decontamination processes which will allow us to reuse PPE safely.

Actions we will take

10. To support Scotland's transition to a circular economy and build a circular society we will:

   ✓ develop supplier information for procurement setting out clear circular economy expectations of those supplying NHS Scotland and outlining support available
   ✓ classify suppliers in line with a development hierarchy, based on their approach and published data in relation to climate change and circular supply systems
   ✓ identify further items which are single use and/or not recyclable and collaborate with our suppliers to seek opportunities to switch to reusable and recyclable alternatives
   ✓ take forward a programme of work on sustainable PPE
   ✓ Work in partnership with clinical staff to identify further areas where circular economy principles can be adopted

Reducing the impact of our supply chains

11. Through using our purchasing power effectively, we can reduce the negative environmental and social impacts of our supply chain and increase the positive impacts. This work goes beyond the circular economy - NHS Scotland is under a legal duty to consider how, through the procurement of goods and services, it can:

   • improve economic, social, and environmental wellbeing
   • facilitate the involvement of small and medium enterprises and third sector bodies
   • promote innovation

12. Our approach will be integrated throughout all of NHS Scotland's procurement processes. We will work as a single system to achieve our aims. We have established an NHS Scotland Sustainable Procurement Steering Group to help achieve our policy outcomes and all Health Boards will work through that group to design solutions.

13. The Scottish Government has prepared tools and guidance to assist public bodies in fulfilling the sustainable procurement duty and NHS Scotland will use these tools and apply the relevant guidance in all our purchasing decisions. We are committed to reviewing our supply chain to determine the extent of associated greenhouse gas emissions and social and environmental impacts and to taking action to reduce the supply chains' negative impacts and promoting positive effects.

14. To maximise our impact, we will prioritise the products we buy with the highest environmental costs and those with the greatest risks of socially unsustainable

practices. We will actively work with suppliers to improve their environmental and social sustainability. Building on the approach set out in the Scottish Government's sustainable procurement tools, we will incorporate environmental and social sustainability and greenhouse gas reductions into our purchasing decisions. In making these decisions, we will take into account the environmental impact of the goods to be purchased throughout their entire lifecycle, from the resources used to manufacture them all the way through to their final disposal.

15. To support this approach, we will investigate methods to quantify the health and environmental impacts of our purchasing decisions. Often the full health and environmental impacts of our use of goods and services is not taken into account in procurement decisions. Our use of goods has real costs to the NHS in terms of waste disposal and the negative impacts on people's health resulting from environmental harm. By assessing these costs, we can better identify which suppliers and which goods provide the real best value to the NHS and the health of the people of Scotland.

16. We will require high ethical and labour standards from all our contractors and request our suppliers provide us with equality and diversity policies. We will require suppliers to conform to the Modern Slavery Act.

17. Through targeted action defined through the sustainable procurement tools, we will routinely monitor the environmental impact (CO_2 emissions and air pollution) associated with our suppliers' transport and logistics, and work with them to reduce it. Through effective supplier management and engagement, we will work with our supply chains to define and implement solutions to minimise environmental impacts

Plastics, packaging and hazardous substances

18. Plastic are useful substances in modern healthcare but they also pose risks to human health throughout the whole of their lifecycle through inhalation, ingestion and contact with skin. Through engagement with industry and academia, we will work to identify and phase out the worst polluting plastics in the products we buy. We will identify classes of chemicals to focus on and build in requirements in our procurement processes to reduce their use.

19. We will also work with our existing suppliers to reduce unnecessary plastic. Where single-use items are unavoidable, we will take steps to ensure that they contain a high minimum recycled content and are themselves fully recyclable.

20. We will work with our suppliers to reduce packaging where it is possible to do so. Where possible we will work with suppliers to prioritise reusable and fully recyclable bulk transport packaging.

21. Working with expert colleagues and in line with regulations, we will review the sustainability of hazardous substances and chemicals as part of our procurement processes, actively seeking to eliminate suspected hazards and switch to safer

alternatives in all building materials, medical equipment, furniture, clothing, and PPE.

Food

22. We will continue to engage with local farmers and food producers to identify how we can purchase more sustainable locally grown food and, where possible, we will incorporate this knowledge into procurement decisions. We will maximise plant based options, whilst ensuring that nutritional needs are met in line with the Food in Hospitals strategy.

Actions we will take

23. To encourage our suppliers to cut their greenhouse gas emissions to net-zero and limit our environmental and social impact we will:

   ✓ work with suppliers to improve the environmental and social sustainability for products with the highest environmental costs and those with the greatest risks of socially unsustainable practices
   ✓ incorporate environmental and social sustainability and greenhouse gas reductions into our purchasing decisions taking into account the environmental impact of goods throughout their entire lifecycle
   ✓ investigate methods to quantify the health and environmental impacts of our purchasing decisions
   ✓ require high ethical and labour standards from all our contractors and request our suppliers provide us with equality and diversity policies
   ✓ require suppliers to conform to the Modern Slavery Act
   ✓ routinely monitor the environmental impact (CO_2 emissions and air pollution) associated with our suppliers' transport and logistics, and work with them to reduce it
   ✓ work with our supply chains to define and implement solutions to minimise environmental impacts
   ✓ work with our existing suppliers to reduce unnecessary plastic and take steps to ensure that unavoidable single-use items contain a high minimum recycled content and are themselves fully recyclable
   ✓ review the sustainability of hazardous substances and chemicals as part of our procurement processes
   ✓ engage with local farmers and food producers to identify how we can purchase more sustainable food
   ✓ work with our suppliers to reduce unnecessary packaging and to reuse and recycle packaging

Supply chain resilience

24. As climate change makes extreme weather more frequent and severe, it increases the probability of events that disrupt supply chains. Examples include the availability of raw materials or component parts, supply of energy to production processes, travel and transport issues for staff and goods and disruption to communication systems.

25. Our aim is to ensure that we maintain security of supply and that this is resilient to extreme weather now, and in the future. Health Boards should consider their supply chains within their Climate Change Risk Assessments and Adaptation Plans and ensure that appropriate measures are included to maintain security of supply. Understanding historical supply chain interruptions will help inform these as well as considering where supply chains could be affected in future, in particular by flood events, storms, higher temperatures and drought.

Actions we will take:

26. To maintain security of supply and that this is resilient to extreme weather now, and in the future we will:

   ✓ engage with suppliers to identify and mitigate for high-risk product groups
   ✓ develop contingency and communication plans with suppliers to make sure communication is strong during extreme weather events
   ✓ maintain a back-up supply of essential products at the National Distribution Centre and locally within Health Boards
   ✓ work with partners and engage with the global multinational supply base to increase our supply chain resilience and limit greenhouse gas emissions

Minimising our waste

27. As part of our efforts to make our use of goods more sustainable, we need to minimise the amount of waste we produce as well as manage it properly (as set out in the section on Sustainable Land and Buildings).

28. We will identify key waste and material streams and develop plans for both. Our plans will identify current waste arisings, opportunities to reduce waste arisings through circular procurement and increasing re-use. Where waste is produced and cannot be avoided, details of segregation and end of life management focusing on material recycling and recovery will be provided. In addition, our plans will detail how we will meet our waste reduction and recycling targets.

29. As a minimum, Health Boards will develop plans for the following waste streams and key materials:

   • clinical waste streams;
   • residual waste;
   • recycling streams, both source-segregated and dry mixed recyclates;
   • packaging waste;
   • food waste;
   • estates wastes including furniture and equipment;
   • construction waste;
   • plastics;
   • metal;
   • wood;

- textiles; and
- organics.

30. In 2019, we produced the NHS Scotland Food Waste Reduction Strategy which outlines our plan to reduce food waste by a third by 2025 (compared to 2013). We are now developing Food Waste Action Plans which will describe the steps that Health Boards will take to deliver the strategy. Implementation of the Action Plans will result in financial savings associated with the reduced spend on food and the avoided costs of disposing of food waste and environmental benefits associated with reducing the demand for food produce.

Actions we will take

To make our use of goods more sustainable and minimise waste we will:

- ✓ identify current waste arisings and opportunities to reduce waste for key waste and materials through circular procurement and increasing re-use
- ✓ develop food waste action plans

Sustainable supply chain: summary of actions

Theme	Action	Relevant SDG
Embedding circularity within our supply chains	1. Develop supplier information for procurement setting out clear circular economy expectations of those supplying NHS Scotland and outlining support available 2. Classify suppliers in line with a development hierarchy, based on their approach and published data in relation to climate change and circular supply systems 3. Identify further items which are single use and/or not recyclable and collaborate with our suppliers to seek opportunities to switch to reusable and recyclable alternatives 4. Take forward a programme of work on sustainable PPE 5. Work in partnership with clinical staff to identify further areas where circular economy principles can be adopted	3 GOOD HEALTH AND WELL-BEING 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Reducing the impact of our supply chains	6. Work with suppliers to improve the environmental and social sustainability for products with the highest environmental costs and those with the greatest risks of socially unsustainable practices 7. Incorporate environmental and social sustainability and greenhouse gas reductions into our purchasing decisions taking into account the environmental impact of goods throughout their entire lifecycle 8. Investigate methods to quantify the health and environmental impacts of our purchasing decisions 9. Require high ethical and labour standards from all our contractors and request our suppliers provide us with equality and diversity policies 10. Require suppliers to conform to the Modern Slavery Act 11. Routinely monitor the environmental impact (CO_2 emissions and air pollution) associated with our suppliers' transport and logistics, and work with them to reduce it 12. Work with our supply chains to define and implement solutions to minimise environmental impacts	3 GOOD HEALTH AND WELL-BEING 10 REDUCED INEQUALITIES 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION

Theme	Action	Relevant SDG
	13. Work with our existing suppliers to reduce unnecessary plastic take and steps to ensure that unavoidable single-use items contain a high minimum recycled content and are themselves fully recyclable 14. Review the sustainability of hazardous substances and chemicals as part of our procurement processes 15. Engage with local farmers and food producers to identify how we can purchase more sustainable food 16. Work with our suppliers to reduce unnecessary packaging and to reuse and recycle packaging	
Supply chain resilience	1. Engage with suppliers to identify and mitigate for high-risk product groups 2. Develop contingency and communication plans with suppliers to make sure communication is strong during extreme weather events 3. Maintain a back-up supply of essential products at the National Distribution Centre and locally within Health Boards 4. Work with partners and engage with the global multinational supply base to increase our supply chain resilience and limit greenhouse gas emissions	3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION
Minimising our waste	1. Identify current waste arisings and opportunities to reduce waste for key waste and materials through circular procurement and increasing re-use 2. Develop food waste action plans	3 GOOD HEALTH AND WELL-BEING 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Sustainable Care

> 'The "Our Natural Health Service Programme" (ONHS)… is a programme of work that I am particularly proud to be involved with and connects two important and accessible contributors to our health – physical activity and outdoor green space' – Gregor Smith, Chief Medical Officer for Scotland[36]

1. The way we provide care can have a major impact on both our communities and the environment and is key in our transition to a net-zero health service. By changing how we plan and deliver services we can empower people to have more control over their health and deliver rapid and long-lasting change which is environmentally sustainable, increases our contribution to good health and reduces health inequalities.

2. Our clinicians and staff must be at the heart of NHS Scotland's climate emergency response and our efforts to become an environmentally and socially sustainable health service. This part of our strategy sets out NHS Scotland's immediate priorities for delivering more sustainable care. It covers the following topics:

   - Sustainable care pathways
   - Reducing harm and waste
   - Medicines
   - Green theatres
   - Supporting primary care

Sustainable care pathways

3. The most environmentally and socially sustainable model of care is one in which fewer people need any care at all. Re-orientating the health service to move away from one which is a national illness management service to one which is a national health providing service is one of our central ambitions. Increased provision of, and participation in, green health activities has the potential to reduce the need for traditional healthcare.

4. An assessment carried out by NHS Lothian estimated that every £1.00 spent on therapeutic gardening in NHS grounds results in benefits to health with a value of at least £2.00.[37] In addition to the strong evidence base for green health activities, the evidence for green health prescribing is emerging.[38] [39] Green health prescribing is one of the actions recommended in the Royal College for General

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[36]Chief Medical Officer - annual report: 2020 to 2021, available at www.gov.scot/publications/cmo-annual-report-2020-21/pages/6/

[37] BiodiversityClimateChangeAssessment.pdf (nhslothian.scot)

[38]A Dose of Nature. Addressing chronic health conditions by using the environment. A summary of relevant research. Centre for Sustainable Healthcare https://nhsforest.org/sites/default/files/ Dose_of_Nature_evidence_report_0.pdf

[39]Centre for Sustainable Healthcare. Evidence of benefits. https://nhsforest.org/evidence-benefits

Practitioners Green Impact for Health toolkit[40], and promoted by the Centre for Sustainable Health Care through their Green Health Routes programme.

5. Four Green Health Partnerships (GHPs) are being piloted in Scotland as part of the Our Natural Health Service programme to develop a more strategic approach to increasing the use of nature based solutions in delivering health outcomes. One of the objectives is to use green health prescribing to support those who can most benefit and use the interaction between the person and the health and care system as an opportunity to address health inequalities.[41] Each GHP is different, developing in ways that suit local circumstances and priorities. However, common elements of GHP work programmes include:
   - improving access to green health information
   - raising awareness of the value of green health within healthcare
   - developing referral pathways to green health projects
   - promoting the benefits of green health to the public
   - developing green health projects and opportunities
   - facilitating cross sectoral co-ordination, improved working and networking on health and the environment

6. There are a growing number of examples across Scotland of similar service improvements providing better outcomes for patients and for the environment. For example, NHS Forth Valley embedded a First Contact Practitioner within GP surgeries to improve support for people living with lower limb arthritis. Community based exercise groups were established and at nine months the project showed a 36% reduction in referral rates for orthopaedics and an 18% reduction in physiotherapy referrals. In the same Health Board, switching to outpatient clinics for Haematology, Neurology, Dermatology and Pain has saved over 1000 patient journey's every month.

7. The patient journey through NHS services is very varied and each service uses different levels of resources with a different environmental impact. Some of the greatest environmental impacts come from patient journeys, the use of energy intensive space and equipment in acute hospitals and the use of tests and supplies. Efforts to reduce these impacts can create wider environmental and health co-benefits.[42] We will develop a methodology for assessing the environmental impact of different models of care to take account of their environmental impact, including greenhouse gas emissions and the sustainable use of resources, and the environmental and health co-benefits of more sustainable care models when redesigning services.

8. Each Health Board which provides clinical services will establish a sustainable clinical service delivery function as a core part of its Climate Emergency Response Team. This function will support clinical teams across the NHS to

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[40] Royal College of General Practitioners. Sustainable Development, climate change and green issues. The Green Impact for Health Toolkit. https://www.rcgp.org.uk/policy/rcgp-policyareas/climate-change-sustainable-development-and-health.aspx
[41] https://www.nature.scot/professional-advice/contributing-healthier-scotland/our-natural-health-service/green-health-partnerships
[42] For example see: A healthy future – tackling climate change mitigation and human health together (royalsociety.org)

make clinical services environmentally and socially sustainable. This will be done through helping clinicians to make sustainability a core consideration in quality improvement work and the delivery of clinical services. By thinking about sustainability in this context, we can help improve patient outcomes and reduce the over-use of natural resources.

Actions we will take

9. To reduce the demand for health services and support the creation of more environmentally and socially sustainable models of care we will:

   ✓ establish and embed green health partnerships and similar approaches to increasing the use of nature based solutions to deliver health outcomes[43]
   ✓ embed prevention in all our models of care, both internally and with external partners
   ✓ quantify and evaluate the environmental impact and the environmental and social co-benefits of care models when redesigning services
   ✓ develop a methodology for assessing the environmental impact of different models of care
   ✓ establish a sustainable care clinical planning function as a core part of Health Boards' Climate Emergency and Sustainability Teams
   ✓ incorporate sustainability into quality improvement and clinical planning

Reducing harm and waste

10. A major factor that affects the sustainability of our NHS is not patient demand but the relentless increase in the volume and intensity of clinical practice (clinician-led demand). The NHS in the UK has experienced growth of around 4.5% per annum and almost two thirds of it is generated by increases in the volume of activity, or innovation. Less than 10% of the growth is due to the healthcare needs of our ageing population.[44]

11. The OECD estimate that up to 35% of this increase in clinical activity is likely to be low value treatment and care or waste.[45] Low value and futile treatments lead to more patient regret. We know too that all healthcare has potential to cause harm - exposure to radiation from imaging, risks from procedures, and side effects from medication.

12. Over investigation and overtreatment leads to unwarranted variation in health, treatments and outcomes and is likely to be causing harm, while also using up precious resources. As we remobilise and reform services, we must build towards a more sustainable healthcare system that delivers the better value care we are looking for.

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[43] https://www.elhf.co.uk/wp-content/uploads/2021/06/GreenHealthPrescribingReportWeb.pdf
[44] Licchetta, M, & Stelmach, M. Fiscal sustainability analytical paper: Fiscal sustainability and public spending on health. Office for Budget Responsibility, 2016 Available from: https://obr.uk/docs/dlm_uploads/ Health-FSAP.pdf
[45] OECD (2017), Tackling Wasteful Spending on Health, OECD Publishing, Paris, https://doi.org/10.1787/9789264266414-en

> **Where we are now**
>
> Our health and care system is under significant pressure. We know that demand for health and care services is increasing and the COVID-19 pandemic has accelerated the need to make optimal use of the resources we have and provide better value care - for patients and our system.
>
> By supporting professionals to practise Realistic Medicine and deliver personalised care, practise shared decision making and tackle unwarranted variation in health, treatment and outcomes, NHS Scotland can reduce harm and waste and deliver better value care – better value for patient and for our health and care system.
>
> There are now five Chief Medical Officer annual reports on Realistic Medicine which showcase excellent examples of how we can practise Realistic Medicine. As we remobilise and reform healthcare services, we must build towards a more sustainable healthcare system that delivers the better value care we are looking for.

13. Realistic Medicine is Scotland's approach to providing care that people really value. We want people working in health and social care and people who use those services to think about the values and the behaviours that underpin good experience. We aim to implement Realistic Medicine through sharing decision making between professionals and patients supporting the people we care for to make an informed choice about their treatment and care options.

14. Realistic Medicine is not about rationing healthcare or saving money. The aim of Realistic Medicine is to improve patient care; ensuring that people receive appropriate and beneficial care that is evidence-based and in tune with their personal preferences.

15. Practising Realistic Medicine has become more important than ever. It will help to deliver greener and more sustainable care. It will help foster a culture where healthcare professionals take responsibility for the resources they use, practise shared decision making and tackle unwarranted variation in order to provide better value care – better value for patients and for our system.[46]

Actions we will take

16. To further support the implementation of Realistic Medicine in practice we will:

- ✓ support professionals to practise Realistic Medicine
- ✓ provide clinicians with the information they need to consider environmental impacts when prescribing
- ✓ reduce pharmaceutical waste through improved prescribing, dispensing, and patient support

Medicines

17. By some estimates, 80% of the health service's carbon footprint can be directly apportioned to clinical choices. An element of the emissions associated with

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[46] Realistic Medicine – Shared decision making, reducing harm, waste and tackling unwarranted variation

clinical choices is currently unavoidable – it is linked to the manufacture and supply of medicines and devices which are essential for providing quality care. This will be addressed through our approach to procurement and wider changes in transport and energy. However, there is a significant part of the emissions and waste produced by the NHS which clinicians can control and influence and this part of the strategy focuses on those.

Where we are now

Outstanding work has already been carried out across NHS Scotland, including reductions in the use of desflurane and work to make surgery more environmentally friendly, but it is time now to build on these initiatives and scale up our efforts. The need to act sustainably is increasingly recognised by clinicians with the Academy of Medical Royal Colleges and Faculties in Scotland issuing a statement that:

"*We recognise that climate change is a global public health issue; that decarbonisation is vital to protecting public health and mental health; and believes there is a role for healthcare professionals in leading climate change mitigation in the Scottish healthcare system.*"[47]

Pharmaceuticals

18. The production and use of pharmaceuticals is a significant source of healthcare related carbon emissions and environmental harm. To be effective drugs, active pharmaceutical ingredients (API's) are designed to be biologically active and resistant to metabolic degradation. APIs in the natural environment can cause reproductive failure, growth inhibition, behavioural changes and a loss of biodiversity. They also contribute to the growth in anti-microbial resistant bacteria, one of the most serious risks to our continued ability to provide healthcare and treat disease.

19. Residues of pharmaceuticals from leftovers not properly disposed of or those that pass through the body can be found in water, soil and sludge and in organisms at all stages of their lifecycles. These can then accumulate in living organisms.

20. Reducing this waste has a double carbon benefit, as it reduces upstream emissions in manufacturing and distribution, and downstream emissions as fewer medicines need to be disposed of.

Medical gases and inhalers

21. Anaesthetic gases used by NHS Scotland contributed to the equivalent of 30,000 tonnes of CO_2 in 2019/20. These emissions included gases such as desflurane and nitrous oxide, which have a particularly harmful impact on the environment. But this is an area where rapid change is possible and reducing the environmental impact of the uses of medical gases must be a priority.

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[47] Statement on the climate emergency | Academy of Medical Royal Colleges and Faculties in Scotland (scottishacademy.org.uk)

Desflurane

22. The Scottish Environmental Anaesthesia Group has done fantastic work to reduce the use of desflurane in NHS Scotland. Raigmore Hospital in Inverness became the first hospital in the UK to take desflurane off-stock in 2019. A number of other hospitals have now followed by making significant reductions in their use of desflurane, which has a twenty-year global warming potential of 3714 times that of CO_2. NHS Scotland will support the wider implementation of this approach through a National Green Theatre Programme.

Nitrous oxide

23. Nitrous oxide is another example where medical gas emissions can be reduced rapidly. Pioneering research at the University of Edinburgh has shown that a very large proportion of medical nitrous oxide emissions do not actually result from clinical use. As a consequence, the Scottish Government has established a Medical Nitrous Oxide Mitigation Programme to support Health Boards with making rapid reductions in these emissions and to work with other health services within the UK and beyond to share best practice. Our aim is to achieve zero emissions of nitrous oxide by 2027 by reducing waste and capturing and safely disposing of the gas we do use.

Inhalers

24. The hydrofluorocarbons used in some metered dose inhalers prescribed for asthma and chronic obstructive pulmonary disease (COPD) can have a global warming potential of 1430 or 3220 times greater than CO_2 depending on the type. We aim to reduce the use of environmentally damaging inhalers and help people to safely dispose them. There are clinically effective and environmentally better alternatives.

25. To help clinicians change their inhaler prescribing practices to avoid unnecessary environmental harm, we will publish an updated Scottish Quality Respiratory Prescribing guide which will focus on minimising patient over-use of inhalers through review and improving patient outcomes, using propellant free options where possible.

Actions we will take

To reduce the environmental harm caused by medicines we will:

- ✓ work to reduce pharmaceutical waste through improved prescribing, dispensing, and patient support
- ✓ support clinicians to consider environmental impacts when making prescribing decisions by providing them with the information they need
- ✓ establish multidisciplinary project teams within Health Boards to work towards zero emissions of anaesthetic gases at each acute site within their area
- ✓ support the wider implementation of this approach through a National Green Theatre Programme
- ✓ encourage greater use of less environmentally damaging inhalers by supporting clinicians to use the updated Scottish Quality Respiratory

Prescribing guide and the NICE patient decision aid for asthma inhalers with their patients

✓ use our purchasing power to encourage manufacturers to make inhalers with lower emissions
✓ support inhaler return to pharmacy schemes to help patients dispose of their used inhalers in a more environmentally friendly way
✓ publish an updated Scottish Quality Respiratory Prescribing guide

Green theatres

26. Our aim is for every NHS Scotland theatre to be a Green Theatre. To support Health Boards with this, a National Green Theatre Programme is being established to provide advice and guidance. Health Boards will adopt the learning from NHS Highland's Green Theatre Project.

Where we are now

Theatres are high carbon and energy intensive areas which produce high volumes of waste. Single use items are more and more common while reusable surgical instruments have a lifetime carbon impact through requirements for sterilisation and transportation.

Perioperative waste accounts for around a third of all NHS Scotland's clinical waste. Each operating theatre can produce 2300kg of anaesthetics gas waste and 230kg of sharps waste per year. The opportunities for carbon reduction are significant and achievable reductions can be targeted.

Actions we will take

27. To support the development of more sustainable surgery, we will:

✓ establish a National Green Theatre Programme
✓ review high volume single use products used in theatres and their environmental impact
✓ review controls of theatre air and scope the potential for investment in systems to make improvements including sensor controls
✓ review the cost and carbon savings in moving over to systems for:
  – fluid capture and disposal
  – patient warming in neonatal, paediatric & perioperative care
  – efficient fluid warming equipment
✓ investigate efficient practices to reduce power consumption and switching off the Anaesthetic Gas Scavenging System (AGSS) when not in use
✓ increase waste segregation at point of use
✓ introduce reusable sharp boxes

Supporting primary care

28. Primary care has a significant environmental impact in areas such as prescribing. Not only are there opportunities to reduce the health service's negative environmental impact, but there are opportunities to promote activities which

benefit people's health and the environment. NHS Scotland can do this through integrating green health prescriptions and signposting into clinical pathways, making better use of our outdoor spaces for health and wellbeing, and supporting community green health activities such as gardening, conservation, cycling, walking and swimming.

Where we are now

The vast majority of people's contacts with the NHS is through primary care services such as general practice, community pharmacy and dentistry. Primary care has the largest reach to our communities and plays an important role in helping people to stay healthy and manage their conditions, preventing them from needing hospital care. These services will also play an important role in helping to create a more sustainable health service.

Actions we will take

29. NHS Scotland will support primary medical services to become more environmentally sustainable through:

   - ✓ working with the Royal College of General Practitioners to support the use of the Green Impact for Health toolkit
   - ✓ continuing to support Green Health Partnerships to facilitate green health prescribing and help make more use of local greenspace as a health-promoting resource
   - ✓ improving active travel links to primary care services
   - ✓ providing clinicians with the information they need to consider environmental impacts when making prescribing decisions
   - ✓ involving primary care in developing circular economy, waste management and recycling programs

30. Sustainability in dentistry has increased its profile as NHS Scotland has launched a three-pronged strategy to tackle waste:

   - ✓ a collaborative procurement scheme for NHS dentists in Scotland, which influences the range and type of disposable items that practices can purchase
   - ✓ joint working with 'Zero Waste Scotland' to move practices from using non-recyclable white plastic cups to others that are recyclable
   - ✓ a new waste contract that provides opportunities to recapture recyclable items, allowing practices to contribute to the circular economy

31. The procurement scheme will move suppliers towards tagging products using a red, amber, and green traffic light system identifying those which can be recaptured and contribute to the circular economy and allowing practices to make positive buying choices. The contract will also be more ambitious in helping dental practices contribute to the circular economy by capturing recyclables. Our strategy for dentistry is intended to encourage innovation, increase sustainable purchasing and meet environmental targets through reducing waste.

Sustainable care: summary of actions

Theme	Action	Relevant SDG
Sustainable Care Pathways	1. Establish and embed green health partnerships and similar approaches to increasing the use of nature based solutions to deliver health outcomes 2. Embed prevention in all our models all our models of care, both internally and with external partners 3. Quantify and evaluate the environmental impact and the environmental and social co-benefits of care models when redesigning services 4. Develop a methodology for assessing the environmental impact of different models of care 5. Establish sustainable care clinical planning teams as core parts of Health Boards' Climate Emergency and Sustainability Teams 6. Incorporate sustainability into quality improvement and clinical planning	3 GOOD HEALTH AND WELL-BEING 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Reducing harm and waste	1. Support professionals to practise Realistic Medicine 2. Provide clinicians with the information they need to consider environmental impacts when prescribing 3. Reduce pharmaceutical waste through improved prescribing, dispensing, and patient support	3 GOOD HEALTH AND WELL-BEING 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION
Medicines	1. Work to reduce pharmaceutical waste through improved prescribing, dispensing, and patient support 2. Support clinicians to consider environmental impacts when making prescribing decisions by providing them with the information they need 3. Establish multidisciplinary project teams within Health Boards to work towards zero emissions of anaesthetic gases at each acute site within their area 4. Support the wider implementation of this approach through a National Green Theatre Programme 5. Encourage greater use of less environmentally damaging inhalers by supporting clinicians to use the updated Scottish Quality Respiratory	3 GOOD HEALTH AND WELL-BEING 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION

Theme	Action	Relevant SDG
	Prescribing guide and the NICE patient decision aid for asthma inhalers with their patients 6. Use our purchasing power to encourage manufacturers to make inhalers with lower emissions 7. Support inhaler return to pharmacy schemes to help patients dispose of their used inhalers in a more environmentally friendly way 8. Publish an updated Scottish Quality Respiratory Prescribing guide	

Green theatres	1. Establish a National Green Theatre Programme
	2. Review high volume single use products used in theatres and their environmental impact
	3. Review controls of theatre air and scope the potential for investment in systems to make improvements including sensor controls
	4. Review the cost and carbon savings in moving over to systems for:
	   – fluid capture and disposal
	   – patient warming in neonatal, paediatric & perioperative care
	   – efficient fluid warming equipment
	5. Investigate efficient practices to reduce power consumption and switching off the Anaesthetic Gas Scavenging System (AGSS) when not in use
	6. Increase waste segregation at point of use
	7. Introduce reusable sharp boxes
		3 GOOD HEALTH AND WELL-BEING
		13 CLIMATE ACTION
		12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Supporting primary care	1. Working with the Royal College of General Practitioners to support the use of the Green Impact for Health toolkit 2. Continuing to support Green Health Partnerships to facilitate green health prescribing and help make more use of local greenspace as a health-promoting resource 3. Improving active travel links to primary care services 4. Providing clinicians with the information they need to consider environmental impacts when making prescribing decisions 5. Involving primary care in developing circular economy, waste management and recycling programs	3 GOOD HEALTH AND WELL-BEING 13 CLIMATE ACTION 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Sustainable Communities

> 'The severity of the impact of climate change on health is increasingly clear. Climate change undermines the social and environmental determinants of health, including people's access to clean air, safe drinking-water, sufficient food and secure shelter' World Health Organisation[48]

1. The climate emergency undermines the foundations of good health and deepens inequalities for our most deprived communities. The NHS touches every community in Scotland. We have a responsibility to use our abilities as a large employer, a major buyer, and one of the most recognised brands in the world – an 'anchor' organisation – to protect and support our communities' health in every way that we can. We will work together with our partners, including local authorities and Public Health Scotland, to bring sustainability, better health and fairness to all communities.

2. The earlier sections of this strategy aim to embed sustainable practice within the NHS and Health and Social Care system. In this part of the strategy, we set out our plans to support sustainable practices in our communities and neighbourhoods. It includes the following topics:

   - supporting health and wellbeing
   - building community resilience
   - engaging our communities

Supporting health and wellbeing

3. For people to stay healthy, we need to keep our planet healthy. Increasing scientific evidence shows that the climate and nature emergency is harming human health in a variety of ways. For example, the threat from air pollution (due to harmful emissions from transport and buildings), heat-related illness and mortality, increased prevalence of vector-borne disease, physical injuries and the mental health impacts associated with climate-related events such as flooding.

4. Playing a positive role in our communities starts with minimising our own impact on the environment. In earlier sections of the strategy, we have committed to actions under the following which will have a positive impact on people's health and wellbeing:

   - reducing our greenhouse gas emissions
   - sustainable development of the NHS estate
   - promoting public and community transport
   - sustainable procurement
   - Our Natural Health Service

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[48] COP24 Special Report Health And Climate Change COP24 Special report: Health & Climate Change (who.int)

5. We will work to ensure that our own facilities and ways of working support people's health, both locally and to minimise the impacts of global climate change. The Covid-19 pandemic has starkly highlighted the inequalities in our society that we must address, and our participation in the 'Covid Recovery Strategy: for a fairer future' actions and partnerships to redesign and rebuild services will contribute to this work.

6. It is important that where people live in Scotland should not undermine the work of the NHS by creating or worsening health problems – we need to work on the causes of poor health as well as the solutions. The NHS can contribute to foundations of community health particularly through providing health-promoting environments (air and water quality, access to greenspace and active travel), accessible and effective health and social care services, social connection, inclusion and empowerment and inclusive economic conditions.[49]

Sustainable places

7. We all want Scotland to be a place where everybody thrives and has a better quality of life. Vibrant, healthy, safe and sustainable places are key to improving health and wellbeing and reducing inequalities. The growing threat to public health from the climate emergency increases the need for action. We all have a clear responsibility to respond in a way that nurtures good health for the population and the planet.

8. Rural and urban green spaces, such as parks, playgrounds, and gardens, can promote mental and physical health by reducing stress, supporting physical activity, and enabling people to come together. They can also help reduce exposure to the damaging effects of air pollution, noise, and excessive heat. Good access to high quality services, active travel options and sustainable, resilient public transport also contribute to health, and we will work to support this both on our own sites, and beyond them.

9. There are many opportunities to support people's physical health, mental health and wellbeing through time outdoors, as active travel and as recreation. We will work with local communities to find the best and most important actions for each area, including doing our part to reduce air pollution and advocate for new ways to work and travel.

10. The Covid-19 pandemic has made everyone more aware of the need to improve access to greenspace. However, survey data showed sharp inequalities in visiting green and open space during lockdown, with those most likely to benefit being least likely to access greenspace. We know that deprived neighbourhoods have poor quality green space and that this contributes to health inequalities. We will look at equality of access to green (and blue) spaces and green health activities. In areas where there is limited or unequal access, we will prioritise enabling access to NHS greenspace.

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[49] public-health-scotland-strategic-plan-2020-23.pdf (publichealthscotland.scot)

Community Wealth Building

11. The Community Empowerment (Scotland) Act 2015 has helped to start community conversations about the use of and access to NHS buildings and land. We recognise the wide-ranging social benefits that stem from greater diversity of ownership. We will encourage ideas and innovative approaches to support communities in successfully taking more control in decisions about how NHS land and property assets are used.

12. Community wealth building is a key part of the Scottish Government's approach to delivering a Wellbeing Economy,[50] supporting growth that delivers thriving communities, a fair society and is environmentally sustainable. The NHS will support this by offering fair, stable and inclusive work, maximising community benefits through procurement and by making it clear how people can get involved and influence decisions.

13. Transparency and communication can support a community wealth building in practice (linked to the LRRS protocols and guidance in the Sustainable Buildings and Land section of the strategy). We will work with other partners and local communities to share information about NHS land and identify opportunities to collaborate on development, use and management where possible. We will publish contact details of named contacts for land and buildings in line with the information that will be detailed in the Land Register and Register of Controlled Interest in Land.

14. We will also ensure that community engagement practices meet the Scottish Government Place Principal and the standards set out in the Scottish Government Guidance on Engaging Communities in Relation to Land and the National Standards for Community Engagement.[51]

Actions we will take

15. To support the health and wellbeing of our communities we will:

- ✓ actively manage our greenspaces to improve provision, access, quality and regular use (for example, increasing use for community food growing)
- ✓ work with local authorities to ensure the NHS estate contributes to local open space strategies and that our green spaces are well linked to other local greenspace and active travel networks
- ✓ maximise the potential benefits of the NHS in its role as an 'anchor organisation' providing good local employment options which generate community wealth
- ✓ maximise community benefits through procurement
- ✓ encourage ideas and innovative approaches to support communities in successfully taking more control in decisions about how NHS land and property assets are used

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[50] Community-Wealth-Building-Delivering-A-Wellbeing-Economy.pdf (inclusivegrowth.scot)
[51] Engaging communities in decisions relating to land: guidance - gov.scot (www.gov.scot)

- ✓ work with other partners and local communities to share information about NHS land and identify opportunities to collaborate on development, use and management where possible
- ✓ publish contact details of named contacts for land and buildings in line with the information that will be detailed in the Land Register and Register of Controlled Interest in Land
- ✓ ensure that community engagement practices meet the Scottish Government Place Principle and the standards set out in the Scottish Government Guidance on Engaging Communities

Building community resilience

16. Strong and healthy communities support people to be resilient to the changes in the world around us. A resilient community is socially connected and has accessible health systems that can withstand disaster and foster community recovery. Resilient communities promote individual and community physical, behavioural, and social health to strengthen their communities for daily, as well as extreme, challenges.[52] In the earlier sections of the strategy we have committed to actions under the following which will support resilient and healthy communities:

   - sustainable development of the NHS estate
   - adapting to climate change impacts
   - valuing, protecting and managing our greenspace
   - reducing the need to travel
   - disruption to travel
   - circular economy
   - sustainable procurement

17. The Covid-19 pandemic may have long term implications for the resilience of the health and social care sector. It has caused an additional stress on the health and social care system due to increased demand and additional pressures on local finances. More positively, the impacts of Covid-19 have raised awareness of the importance of understanding the threats that can disrupt lives and livelihoods.

Climate change impacts on communities

18. Climate change affects everyone, but the health and wellbeing impacts will be felt disproportionately by some groups. Increased temperatures, flooding, coastal change, and water scarcity are likely to impact children and young people, older adults, people with disabilities and long-term health conditions, and people living on a low income the most. Communities and individuals who are most exposed to the effects of climate change will need additional support.

Where we are now

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[52] https://www.phe.gov/Preparedness/planning/abc/Pages/community-resilience.aspx#:~:text=Community resilience is the sustained ability of communities,and wellbeing—is a big part of overall resilience.

Many communities across Scotland are threatened by flood risk, but some are more disadvantaged than others. Flood disadvantage (the combination of living in an area at flood risk and the degree to which socially disadvantaged communities are disproportionately affected by flooding) is greatest in coastal areas, dispersed rural communities and declining urban cities. Pockets of flood disadvantaged communities exist across Scotland. However, Glasgow and the wider City Region constitute a significant area of concentration. Coastal communities have a higher proportion of flood disadvantaged than areas located further inland. Falkirk, West Dunbartonshire, Highland and Dumfries and Galloway have the highest number of extremely and acutely flood disadvantaged. Coastal areas also have a higher proportion of extremely/acutely flood disadvantaged than areas located further inland, including Falkirk, West Dunbartonshire, Highland and Dumfries and Galloway.[53]

Higher temperatures are likely to exacerbate existing health conditions, particularly cardio-respiratory conditions, and are also dangerous for the very young and older people who have a lower ability to regulate their own body temperature. Those on low incomes are also likely to be affected more due to poorer housing conditions. Increasingly patients are cared for at home where possible and therefore the thermal comfort of their homes will contribute to overall health outcomes.

With an ageing population, it is also important to consider the adaptability of homes for each stage of life to help manage increasing ill health. Improving thermal comfort in homes is an all-round positive solution improving the health and wellbeing of occupants and helping to reduce greenhouse gas emissions[54].

19. We will work with our partners to support and encourage improvements in planning, housing and transport that recognises the potential impacts of climate change on health and to ensure that different population groups in society are not further disadvantaged. For example, NHS Western Isles is working alongside community planning partners to improve understanding of climate change impacts in the Outer Hebrides across organisations and communities and develop adaptation actions for inclusion in the Local Outcomes Improvement Plan.

20. The NHS Scotland Standards for Organisational Resilience[55] also requires that consideration is given to the non-traditional disaster response role of community healthcare settings, such as sources for clean water, food, and shelter for an affected population, and that plans are in place to provide a healthcare response to people in the community following extreme weather events, especially those who are vulnerable, as part of the local multiagency recovery plan.

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[53] Mapping flood disadvantage in Scotland 2015: report - gov.scot (www.gov.scot)

[54] https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/
[55] The NHSScotland Standards For Organisational Resilience. 2018. Section 9 Climate Change. Standard 38.

Increasing social capital

21. Building social connectedness is an important emergency preparedness action. Social capital is the term used to describe the benefits for people and groups of being and feeling connected with other people and part of communities. People are more empowered to help one another after a major disturbance in communities when members are regularly involved in each other's lives.

22. Developing social capital is a way to tackle the health inequalities that result from social isolation, low levels of support and low self-confidence. Increasing confidence, increasing a sense of connectedness and belonging and the ability to bring about change in people's own lives are all things which help to protect mental health.

23. Positive mental wellbeing can lead to improvement in lots of ways including physical health and higher educational attainment, as well as improved outcomes for employment, parenting, relationships, reducing crime and quality of life.

24. We will support opportunities for people and groups to form connections in a variety of ways including through the creative arts, volunteering, education, befriending, spirituality and access to NHS greenspace and green health activities through the Our Natural Health Service Programme and local Green Health Partnerships.

Access to fair and green jobs

25. The Scottish Government is committed to securing an economic recovery which is green and fair – for everyone and in every part of Scotland – and delivers our ambition to become a net-zero nation.[56] The actions set out in this strategy to achieve our aim of becoming a net-zero, sustainable health service also provides opportunities to support access to fair and green jobs. We will identify opportunities to embed community benefits which support the green jobs agenda, including through apprenticeships, supporting SMEs, third sector and supported businesses, supporting return to work and providing training and skills development.

Child poverty

26. Children and families living and growing up in poverty and low-income households experience many disadvantages which can have negative health and social consequences throughout their life. Families may not have access to sufficient resources to lead a healthy lifestyle, including access to affordable healthy food, good-quality housing, adequate home heating and affordable social and cultural opportunities. We will identify opportunities for supporting local food growing strategies at NHS sites and heat and energy efficiency projects which will help to reduce fuel poverty.

Actions we will take

To support strong, healthy and resilient communities we will:

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[56] A fairer, greener Scotland. Programme for Government 2021-22. A Fairer, Greener Scotland: Programme for Government 2021-22 - gov.scot (www.gov.scot)

- ✓ work with our partners, including Public Health Scotland, to understand the risks to each area and different population groups
- ✓ support our patients, staff and partner organisations in creating homes, communities and transport networks that increase resilience and minimise the impact on climate change
- ✓ work with our partners to increase community resilience to climate change impacts
- ✓ develop appropriate emergency planning procedures for flooding, major outbreaks of disease and other risks that we know have become more likely due to the climate emergency
- ✓ consider the non-traditional disaster response role of community healthcare settings and ensure plans are in place to provide a healthcare response to people in the community following extreme weather events
- ✓ support opportunities for building social capital and connectedness, access to fair and green jobs and tackling child poverty

Engaging our communities

27. Empowering communities to participate in shaping the places they call home is key to creating happy and sustainable communities.[57] We want to have more engagement with local communities and partner organisations in the design or redesign of services to maximise community benefit. There are good examples and excellent work underway but we know that more can be done.[58] We also want to make sure that promote inclusion and hear from a diverse range of voices.

28. Although issues such as housing, planning, design and transport lie outside the traditional remit of the health service, they all have a significant role to play in achieving good health outcomes and can be seen as an important and influential element of the public health workforce. Public Health Scotland and local public health teams will engage with local authorities and community planning partners to advise on the health and climate impacts of development and opportunities for reducing health inequalities.

29. The actions set out in this strategy will also help to support the necessary behavioural changes needed by our staff, patients and local communities in contributing to social and environmental sustainability and reaching net-zero. Examples include improvements to active travel routes and supporting facilities, improving access to local green health activities, electric vehicle charging points and targeted campaigns such as promoting energy efficiency measures and warm homes.

30. The Place Standard tool has been used extensively across Scotland and internationally, receiving recognition from the World Health Organization. Part of the success of the tool has been its ability to create meaningful, structured

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[57] Scotland and the sustainable development goals: a national review to drive action - gov.scot (www.gov.scot)

[58] Link to webinar NHS Place and Health: How NHS land and estates can deliver community wellbeing

conversations around the complex issues within places, allowing local people, decision-makers and other interests a common platform to assess the existing and future potential of an area.

31. The Scottish Government, Public Health Scotland, Adaptation Scotland, Sniffer and the Sustainable Scotland Network are working together to develop a climate lens to work in conjunction with the Place Standard Tool. This will support community place making to better understand how climate change will impact communities locally, and the sort of actions that can be taken to build resilience and reach net-zero. We will promote the use of the Place Standard tool and climate change resource both within the NHS and within communities.

Actions we will take

To increase our engagement with local communities and partner organisations we will:

- ✓ promote more, and clearer, inclusion of local communities in decision making
- ✓ raise awareness of how sustainable living supports wellbeing including place-based working
- ✓ work with local authorities and others on planning, providing good access to services, active travel options and public transport both on our own sites, and beyond them
- ✓ increase use of the Place Standard and climate change resource both for our own work and together with partners and local community groups
- ✓ explore new and innovative ideas for sustainable and green improvements to services and community use

Sustainable communities: summary of actions

Theme	Action	Relevant SDG
Supporting health and wellbeing	1. Actively manage our greenspaces to improve provision, access, quality and regular use (for example, increasing use for community food growing) 2. Work with local authorities to ensure the NHS estate contributes to local open space strategies and that our green spaces are well linked to other local greenspace and active travel networks 3. Maximise the potential benefits of the NHS in its role as an 'anchor organisation' providing good local employment options which generate community wealth 4. Maximise community benefits through procurement 5. Encourage ideas and innovative approaches to support communities in successfully taking more control in decisions about how NHS land and property assets are used 6. Work with other partners and local communities to share information about NHS land and identify opportunities to collaborate on development, use and management where possible 7. Publish contact details of named contacts for land and buildings in line with the information that will be detailed in the Land Register and Register of Controlled Interest in Land 8. Ensure that that community engagement practices meet the Scottish Government Place Principle and the standards set out in the Scottish Government Guidance on Engaging Communities	3 GOOD HEALTH AND WELL-BEING 11 SUSTAINABLE CITIES AND COMMUNITIES 13 CLIMATE ACTION 15 LIFE ON LAND
Building community resilience	1. Work with our partners, including Public Health Scotland, to understand the risks to each area and to different population groups 2. Support our patients, staff and partner organisations in creating homes, communities and transport networks that increase resilience and minimise the impact on climate change 3. Work with our partners to increase community resilience to climate change impacts 4. Develop appropriate emergency planning procedures for flooding, major outbreaks of disease and other risks that we know have become more likely due to the climate emergency	3 GOOD HEALTH AND WELL-BEING 11 SUSTAINABLE CITIES AND COMMUNITIES 13 CLIMATE ACTION

Theme	Action	Relevant SDG
	5. Consider the non-traditional disaster response role of community healthcare settings and ensure plans are in place to provide a healthcare response to people in the community following extreme weather events 6. Support opportunities for building social capital and connectedness, access to fair and green jobs and tackling child poverty	
Engaging our communities	7. Promote more, and clearer, inclusion of local communities in decision making 8. Raise awareness of how sustainable living supports wellbeing including place-based working 9. Work with local authorities and others on planning, providing good access to services, active travel options and public transport both on our own sites, and beyond them 10. Increase use of the Place Standard and climate change resource both for our own work and together with partners and local community groups 11. Explore new and innovative ideas for sustainable and green improvements to services and community use	3 GOOD HEALTH AND WELL-BEING 11 SUSTAINABLE CITIES AND COMMUNITIES

Reporting our Progress

1. We want to have as accurate an understanding of our carbon footprint, environmental impact and our contribution to the UN Sustainability Development Goals as possible. We want this information to be accessible and published in a format which is easily understandable for our local communities, patients and staff.

Where we are now

NHS Scotland has developed a National Sustainability Assessment Tool (NSAT) which all Health Boards use on an annual basis to measure their progress across sixteen different areas of sustainability. We will continue to use this tool to assess progress on the actions set out in this strategy and our contribution to the UN Sustainable Development Goals and national outcomes.

NHS Scotland also reports against a number of statutory targets such as reductions in greenhouse gas emissions and biodiversity. Nineteen health boards are required to prepare annual climate change reports under the Climate Change (Scotland) Act.

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2. Starting in October 2022, each Health Board will publish an annual report, approved by its Chief Executive, summarising its progress against the aims of this strategy.

3. The annual report will include the Health Board's NSAT score and highlight any examples of best practice which could be adopted across the whole of NHS Scotland. These reports will form a key part of each Health Board's annual ministerial review.

4. Starting in 2023, we will publish an annual NHS Scotland Climate Emergency and Sustainability Report setting out the progress being made across all of NHS Scotland in implementing this strategy.

5. We recognise that there are gaps in our data and we will work to address these. There is a lack of consistency in the information that NHS Boards provide in their statutory annual climate change reports and three NHS Boards are not currently required to provide them. Starting in 2022, all NHS Boards bodies will report on their greenhouse gas emissions and these reports will include the following categories as a minimum:

   - building fossil-fuel energy use
   - owned and leased fleet fuel use
   - fluorinated gases and anaesthetic gases (where relevant)
   - purchased energy use (electricity, heat, steam)
   - energy transmission and distribution
   - waste
   - water consumption

- waste water treatment
- business travel, including the use of grey fleet
- leased assets

6. One of the major gaps we have is in accurately setting out the carbon footprint of the NHS supply chain. While there are methods for estimating this, they all have their limitations which make it challenging to accurately monitor changes in the total carbon emissions resulting from our purchase of goods and services. Instead of taking a broad-brush approach to estimating these carbon emissions, we intend to identify the actual carbon emissions in priority categories and monitor the change in those over time.

Getting Involved

1. Already, networks of people have come together across NHS Scotland to work on making the health service more sustainable. The Scottish Environmental Anaesthesia Group is a fantastic example of a grassroots group which has created real change. Thanks to their work, a number of Scottish hospitals have significantly reduced their use of desflurane, a potent and volatile greenhouse gas. To support existing networks, the formation of new ones and to make it easier to get involved, the NHS Sustainability Action website will include a directory for grassroots groups to publish their details so that people who want to join and work with them can get in touch more easily.

2. We have also developed Active Global Citizenship resources have been developed to increase knowledge and understanding of the United Nations' Sustainable Development Goals (SDGs) within NHS Scotland and are available to NHS staff who wish to engage their colleagues in wider global issues and sustainability: www.scottishglobalhealth.org/active-global-citizenship

3. The people who work within the NHS and use its services have fantastic ideas on how to make it more environmental and socially sustainable. If you have an idea you wish to share, please do so at: Link to dedicated page on NHS Sustainability Action website.

Annex A – Building Energy Efficiency Measures

1. These are the building energy efficiency measures that Health Boards will work on implementing in the period 2022 to 2026:

   a. **BMS (Building Management System), Controls and Plant Improvements**

2. Current BMS systems in hospitals should be updated and expanded, preferably using an open standard protocol, to allow for improved monitoring and full remote control, with the assistance of Health Board IT departments.

3. Upgrades of air handling unit fan, motor, motor drives and circulation pumps to the highest standard are necessary, as well as installation of heat recovery systems.

4. All fan and pump motors should have differential pressure switches fitted to them for auto changeover via the BMS.

5. Air Handling Unit (AHU) filters should be fitted with a Differential Pressure (DP) sensor which constantly monitors DP across each filter. Each filter DP should be properly configured to provide a Red, Amber and Green status so that filters are changed at the correct time, both from a health perspective but also from an energy conservation perspective as well.

   b. **Energy management & sub-metering**

6. Savings for electricity, heating fuels and water can be generated through:

   - setting up green teams with local responsibility for energy use
   - allocating an energy manager to monitor and take actions on collected data
   - setting site-by-site benchmarks and targets
   - conforming to ISO 50001 or equivalent
   - carrying out regular staff energy awareness training
   - installing smart fiscal meters on all of our smaller properties for electricity and water
   - sub-metering of major plant
   - analysis of data via our NHS Scotland – Energy Monitoring and Targeting system
   - where feasible, installing smart heating controls in all properties that do not have a BMS system

   c. **Building improvements**

7. Improvements to buildings can reduce heat loss and energy consumption. All Health Boards will take the following actions:

   - install LED lights where they are not already in use
   - replace windows and doors on a maintenance basis with highly insulated units

- take forward a programme to install roof and wall insulation where possible to improve thermal performance and air tightness

Annex B – Data

1.   This section sets out data which is currently available at a national level for NHS Scotland and highlights areas where there is currently a lack of robust data.

Building emissions

2.   NHS Scotland has comprehensive data for its energy use for heating and power which is collected through a national reporting system. NHS Scotland's emissions from heating and electricity reduced by 4.4% between 2019/20 and 2020/21. Those emissions from territorial Health Boards have fallen by 64% between 2020/21 and the baseline year of 1989/90.

NHS Scotland energy use 2020-21

Energy Resources	Use (kWh)	% Use	CO_2 equivalent (tonnes)	% of energy emissions
Gas kWh	1,390,542,787	70.7 %	288,927.0	67.0 %
Electricity	440,294,053	22.4 %	111,478.1	25.8 %
Heavy Fuel Oil	35,259,840	1.8 %	11,230.6	2.6 %
Gasoil (Class A2)	25,648,985	1.3 %	8,094.8	1.9 %
Biomass Pellets	25,308,385	1.3 %	1,338.6	0.3 %
Gasoil (Class D)	15,641,448	0.8 %	4,936.4	1.1 %
Biomass Woodchips	12,400,598	0.6 %	289.8	0.1 %
District Heating	7,941,323	0.4 %	1,576.8	0.4 %
LPG	6,347,280	0.3 %	1,527.9	0.4 %
Kerosene	5,848,353	0.3 %	1,742.6	0.4 %
Derv	692,257	0.0 %	218.5	0.1 %
Renewable Electricity	493,198	0.0 %	0.0	0.0 %
Total	**1,966,418,507**		**431,361.0**	

NHS Scotland energy use 2019-20 to 2021-22

3.   The following table sets out the changes in buildings energy use and associated emissions from 2019/20 to 2020/21.

Change in NHS Scotland energy use 2019-20 to 2021-22

Reporting Year	Energy Use (kWh)	CO_2 equivalent (tonnes)
2019/20	2,006,978,566	451,102.7
2020/21	1,966,418,507	431,361.0
Variance	**-40,560,059**	**-19,741.7**
%Variance	**-2%**	**-4.4%**

Change in territorial Health Board emissions since 1990

4.   The following table sets out the change in emissions for NHS Scotland's territorial Health Boards since 1990 – the year against which statutory emissions reductions targets are measured. The eight special Health Boards are not included due to a lack of robust data for 1990. For example, the State Hospital did not form part of the NHS at that point and the Golden Jubilee Hospital had not yet been built. The 14 territorial health boards were responsible for 95.9% of NHS Scotland's overall reported energy use in 2020/21.

Territorial Health Boards- change in building energy use and associated emissions – 1989/90 to 2020/21

Reporting Year	Energy Use (kWh)	CO$_2$ equivalent (tonnes)
1989/90	3,202,999,261	1,147,018
2020/21	1,885,891,393	413,579
Variance	**-1,317,107,868**	**-733,439**
% Variance	**-41.1%**	**-63.9%**

Travel to main hospital sites

8.   Data gathered by individual NHS Boards suggest that current rates of travel to main hospital sites by staff, patients and visitors are approximately:

- Active travel: 2.8% of journeys
- Public Transport: 7.4% of journeys
- Car use: 89.2% of journeys.

9.   However, as noted in the section on sustainable travel, surveys of this nature are infrequent and we will undertake work to improve the reliability of this data. To address this, we will carry out annual travel surveys at each of our sites to monitor shifts in modes of transport in travel to and from NHS sites

 Fleet

10.   We are undertaking an assessment of current progress with decarbonising the NHS fleet with a view to including this in the final version of this strategy.

Business travel

11.   We do not currently have reliable national data for NHS business travel and we will work to improve this as part of the implementation of this strategy.

Waste data

12.   We recognise that there are gaps in our waste data and are working to improve the quality of it. The following data is drawn from the statutory annual climate change reports of the nineteen Health Boards which are required to submit reports and is therefore incomplete.

Type of waste collected	NHS Scotland total - 2019/20 (tonnes)
Residual waste collected	15,440
Material collected for recycling	7,457
Clinical waste	9,029
Total waste arisings	**31,926**

Medical gases

13.   The following table sets out data on medical gas usage by NHS Scotland in 2018/19, 2019/20 and 2020/21. The emissions from gases all decreased in 2020/21, most likely as a result of the disruption to elective surgery procedures caused by the Covid-19 pandemic. However, the decrease in the use of desflurane between 2018/19 and 2019/20 is consistent with reports of individual hospitals choosing to use other methods of anaesthesia.

Medical gas usage in NHS Scotland, 2018/19 to 2020/21

	2018/19 - CO_2 equivalent tonnes	2019/20 - CO_2 equivalent tonne	2020/21 - CO_2 equivalent tonnes
Manifold Nitrous Oxide	9689	9484	7842
Portable Nitrous Oxide	819	814	407
Manifold Entonox®	14276	14518	14071
Portable Entonox®	2109	2173	1641
Isoflurane	122	120	127
Sevoflurane	1123	1136	784
Desflurane	6178	2427	883
Total	**34316**	**30673**	**25754**

Inhalers

14.   The table below sets out information on the number of metered dose inhalers and dry powder inhalers prescribed by GP practices and dispensed in Scotland in 2019/20 and 2020/21. The environmental impact of inhalers varies according to type.

We are carrying out further analysis of the impact of inhalers prescribed in Scotland with a view to including this in the final version of the strategy.

15. The number of items refers to the number of prescribing instances - the opportunities a prescriber has had to choose the type of inhaler they wish to prescribe. The number of packs refers to the number of inhalers or packs of capsules for inhalation dispensed.

Financial Year	Inhaler Type	Number of Items	% of total	Number of Packs
2019/2020	Dry powder	1,749,454	32.4	2,453,916
2019/2020	Metered dose	3,655,581	67.6	4,855,652
2020/2021	Dry powder	1,611,486	31.9	2,270,806
2020/2021	Metered dose	3,434,472	68.1	4,507,142

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