



# **Annual Climate Emergency and Sustainability report 2022/23 – template and guidance for NHS Scotland health boards**

**August 2023 Template Revision**

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# 1. About

This report was collated through NHSGGC's Sustainability Governance Framework and approved by the Corporate Management Team on Thursday 4<sup>th</sup> January 2024, chaired by the Chief Executive.:



The annual report focuses on the environmental performance of NHS Greater Glasgow & Clyde (NHSGGC) covering the 2022/23 fiscal year. This pre-dates current Annual Delivery and Medium-Term Planning Guidance and the launch of NHSGGC's Climate Change & Sustainability Strategy (September 2023). However, much of the governance framework was in place supporting the strategy development with agreed sustainability objectives:

- Sustainability and Waste Management Policy
- Sustainability Governance Framework & Strategy Development
- Sustainability Communications Plan
- Acquire Q-Pulse as Business Management System for EMS

# 2. Introduction

This is NHSGGC's annual Climate Emergency and Sustainability Report.

The planet is facing a triple crisis of climate change, biodiversity loss and pollution as result of human activities breaking the planet's environmental limits.

The World Health Organisation recognises that climate change is the single biggest health threat facing humanity. Health organisations have a duty to cut their greenhouse gas emissions, the cause of climate change, and influence wider society to take the action needed to both limit climate change and adapt to its impacts. More information on the profound and growing threat of climate change to health can be found here: [www.who.int/news-room/fact-sheets/detail/climate-change-and-health](https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health)

NHSGGC provides health care to the 1.2 million people who live in Greater Glasgow area, covering six integrated joint boards (Glasgow City, East Dunbartonshire, East Renfrewshire, Inverclyde, Renfrewshire and West Dunbartonshire). As of March 2022, NHSGGC employ over 43,500 people across a broad estate of;

- 35 hospitals
- 240 GP practices (in total around 790 GPs)
- 300 Community Pharmacies
- 270 Dental practices
- 180 Ophthalmic practices

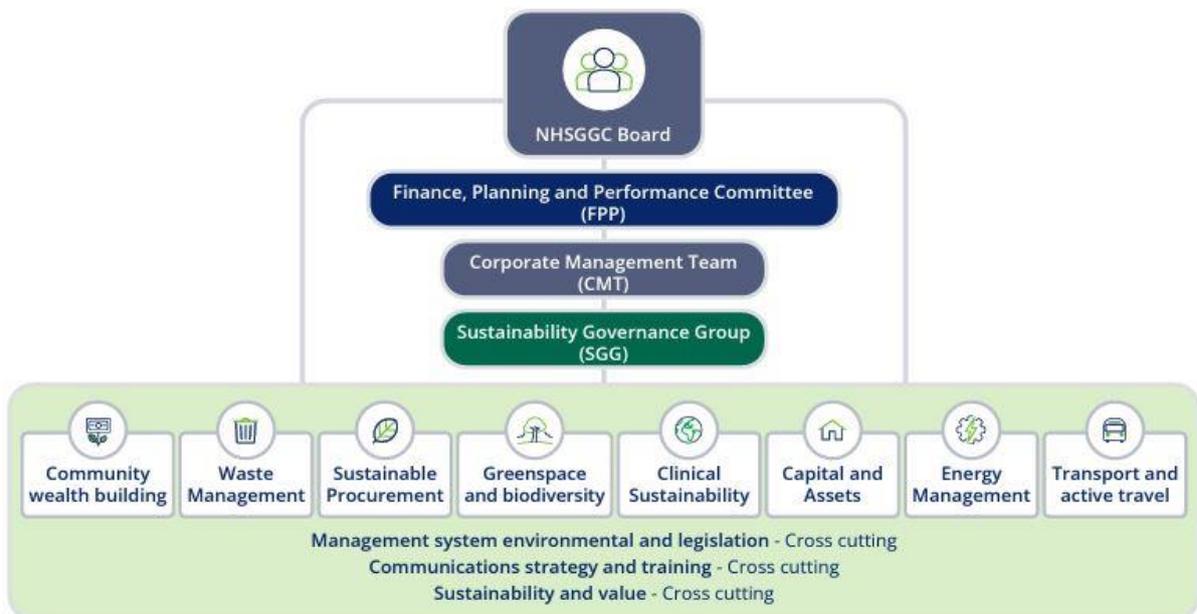
### 3. Leadership and governance

NHSGGC has designated key leadership roles within the following functions:

- The Chair of the Audit & Risk Committee is our Board Non-Exec Sustainability Champion.
- Director of Estates & Facilities is our Executive Sustainability Champion.
- Climate Change and Sustainability is overseen by the Boards Sustainability Governance Group, which the executive sustainability champion chairs. The group reports through the Corporate Management Team, Financial Planning & Performance Committee and then onto the Board itself.
- NHSGGC launched the Climate Change & Sustainability Strategy in September 2023 following rigorous development and governance approval during much of 2022/23. We will report to the Board bi-annually and to our external stakeholders on progress through our communications team.

[Climate Change and Sustainability Strategy 2023 -2028 - NHSGGC](#)

NHSGGC Sustainability Governance Structure



## 4. Greenhouse gas emissions

NHSGGC aims to become a net-zero organisation by 2040 for the sources of greenhouse gas emissions set out in the table below. The table sets out the amount of greenhouse gas produced annually by NHSGGC;

### Greenhouse gas emissions 2021/22 & 2022/23, tonnes CO2 equivalent

Source	2021/22 – emissions	2022/23 – emissions	Percentage change – 2021/22 to 2022/23	2022/23 – target emissions	Percentage difference between actual and target emissions – 2022/23
Building energy *	95908	90518	-6%	N/A	N/A
Non-medical F-gas use	1,966	728	-63%**	N/A	N/A
Medical gases	5,459	6,180	13%	N/A	N/A
Metered dose inhaler propellant	19,958	19,748	-1%	N/A	N/A
NHS fleet use	1365	1278	-6%	N/A	N/A
Waste	1766	1660	-6%	N/A	N/A
Water	449	362	-19%	N/A	N/A
Business travel	2873	3290	15%	N/A	N/A
Total greenhouse gases emitted	129,744	123,764	- 5%	N/A	N/A
Carbon sequestration	N/A	N/A	N/A	N/A	N/A
Greenhouse gas emissions minus carbon sequestration	129,744	123,764	- 5%	N/A	N/A

\*Inc. transmission/distribution of electricity (Scope 3)

\*\* No internal targets set for FY 22/23 other than clinical waste specifically

## 5. Climate change adaptation

The climate is changing due to the greenhouse gases already emitted into the atmosphere. While efforts to reduce the rate and scale of climate change continue, we must also adapt to new conditions we are facing.

The changing climate is increasing risks for health and health services. More information on these risks in the UK can be found in the UK Climate Change Committee's Health and Social Care Briefing available here:

[www.ukclimaterisk.org/independent-assessment-ccra3/briefings/](http://www.ukclimaterisk.org/independent-assessment-ccra3/briefings/)

*What are the main risks from climate change that the Health Board has identified through its Climate Change Risk Assessment?*

NHSGGC has completed its Climate Change Risk Assessment Tool and is working in collaboration with GGC, NHS Scotland Assure and our Moving Forward Together Programme Team to develop this further to fully understand and plan for the effects of climate change on our assets and services.

*What actions has the health board taken to reduce those risks?*

NHSGGC is now factoring climate change into business continuity and resilience planning. Adaptation to climate change is a key consideration on long term strategic planning.

*What are we doing to be prepared for the impacts of climate and increase the resilience of our healthcare assets and services?*

NHSGGC is now factoring climate change into its clinical infrastructure strategy (Moving Forward Together). By recognising, over the next 15 to 20 years net zero and climate change impacts on our population demographic and physical infrastructure.

## 6. Building energy

The largest component of measured carbon footprint arises from use of natural gas (71% of all emissions and 77% of all building energy emissions). Decarbonisation of heat is going to be the major challenge going forward. Natural gas is used for space heating across most of the built estate, including acute hospitals, primary care buildings. Natural Gas is also used for process heat in some of the Specialist Facilities, this includes Laundry Facilities and Decontamination Centres.

We aim to use renewable heat sources for all the buildings owned by NHSGGC by 2038.

In 2022/23, 90518 tonnes of CO2 equivalent were produced by NHSGGC use of energy for buildings. This was a decrease of 5.62 % since the year before.

In 2022/23, NHSGGC used 474358 MWh of energy. This was a decrease of 1.78% since the year before.

In 2022/23, NHSGGC generated 93.3 MWh of energy from renewable technologies.

**Building energy emissions, 2015/16, 2021/22 and 2022/23 – tCO<sub>2</sub>e**

	2015/16 energy use	2021/22 energy use	2022/23 energy use	Percentage change 2015/16 to 2022/23
Building fossil fuel use	78,154	63,361	61,936	-21%
District heat networks and biomass	5,558	5	4	-99.9%
Grid electricity	83,061	29,010	28,578	-66%
<b>Totals</b>	<b>166,773</b>	<b>92,376</b>	<b>90,518</b>	<b>-46%</b>

**Building energy use, 2015/16, 2021/22 and 2022/23 – MWh**

	2015/16 energy use	2021/22 energy use	2022/23, energy use	Percentage change 2015/16 to 2022/23
Building fossil fuel use	366,305	345,932	338,525	-8%
District heat networks and biomass	28,051	311	342	-99%
Grid electricity	164,546	136,626	135,398	-18%
Renewable electricity	54	93	93	72%
<b>Totals</b>	<b>558,956</b>	<b>482,962</b>	<b>474,358</b>	<b>-15%</b>

What are we doing this year to reduce emissions from building energy use?

NHSGGC has committed to a 6% reduction in emissions for 23/24 as part of our Annual Delivery Plan. In support of this several Energy & Carbon reduction schemes have been submitted to the Scottish Government for funding during 23/24. As can be seen below the total FYE saving is forecast to be:

- 2,767 t/CO2 saving
- 13,018,226 Kwh saving

What projects are we planning for the longer-term to reduce emissions from building energy use?

NHSGGC in collaboration with Scottish Water, plan to utilise waste heat from the Shieldhall Sewage Work. This project will require significant funding to realise this opportunity and will likely take several years to implement.

There are a range of scenarios involved, with a possible solution showing an indicative saving of ~88% of the QEUH gas use and subsequent carbon reduction of ~14000t (based on previous studies and forecast calculations during 2022). The full site cooling load could also be provided. By way of comparison, this would see the QEUH carbon emissions similar to a small health centre.

What did we do last year to reduce emissions from building energy use?

The table below shows the projects conducted across 2022/23

Site	Project Description	Savings (Kwh)	Savings (tCO2)
All sites across estates	Main Boiler Temperature reduction	17,850,000	3302
Gartnavel Royal Hospital (GRH)	Installation of Variable Speed Drives (VSD's)	63,380	19
Vale Centre for Health & Care (VCHC)	Supply & Installation of LEDs	361,613	76
Stobhill Hospital Trust HQ building, McKinnon Ward, Ailsa ward, Ailsa ward Annex, Jura ward, & Isla Ward	Supply & Installation of LEDs	840,910	177
Vale of Leven (VoL) Hospital	Supply & Installation of LEDs	404,298	86
Queen Elizabeth University Hospital (QEUH) Basement & Mortuary	Supply & Installation of LEDs	53,580	10

Queen Elizabeth University Hospital (QEUH) Lab Block	Upgrade Building Management System (BMS) - Phase 1	665,290	121
Greenock Decontamination Building	Installation of Variable Speed Drives (VSD's)	62,535	19
Inverclyde Royal Hospital (IRH)	Installation of Variable Speed Drives (VSD's)	133,858	43
Glasgow Royal Infirmary (GRI)	Installation of Variable Speed Drives (VSD's) – Phase 1	669,884	212
Gartnavel General Hospital (GGH)	Installation of Variable Speed Drives (VSD's)	1,514,359	477
Gartnavel General Hospital (GGH) – Beatson	Upgrade of Building Management System (BMS) – Phase 1	629,464	115
Hillington Laundry	Supply & Installation of Plate Heat Exchanger (PHX)	1,947,000	360

NHSGGC are planning to deliver the following projects during 23/24 to support Net Zero in the Built Environment;

Site	Project Description	Savings (Kwh)	Savings (tCO2)
All sites across estates	Main Boiler Temperature reduction	8,180,000	1826
Queen Elizabeth University Hospital (QEUH) Multi Storey Car Park (MSCP) No 1	Supply & Installation of LEDs	241,110	51
Queen Elizabeth University Hospital (QEUH) Multi Storey Car Park (MSCP) No 2	Supply & Installation of LEDs	224,449	48
Queen Elizabeth University Hospital (QEUH) A&C	Supply & Installation of LEDs – Main Corridors Phase 2	52,557	10
Queen Elizabeth University Hospital (QEUH) A&C	Supply & Installation of LEDs – Stairwells Phase 2	52,660	10
Queen Elizabeth University Hospital (QEUH) Lab Block	Upgrade Building Management System (BMS) - Phase 2	629,464	115
Stobhill Hospital Block CX, Block AW, Block AV, Block AO, Skye Therapies Block C,	Supply & Installation of LEDs	334,886	66

Skye therapies Block A,			
Springburn Health Centre	Supply & Installation of LEDs	156,839	34
Inverclyde Royal Hospital (IRH)	Upgrade of Building Management System (BMS) to Class A	433,328	96
Royal Alexandra Hospital (RAH)	Upgrade of Building Management System (BMS) to Class A	-	-
Glasgow Royal Infirmary (GRI)	Supply & Installation of LEDs – various areas	229,530	49
Gartnavel General Hospital (GGH)	Installation of Variable Speed Drives (VSD's)	1,514,359	477
Gartnavel General Hospital (GGH) – Beatson	Upgrade of Building Management System (BMS) – Phase 1	629,464	115
Hillington Laundry	Supply & Installation of Plate Heat Exchanger (PHX)	1,947,000	360

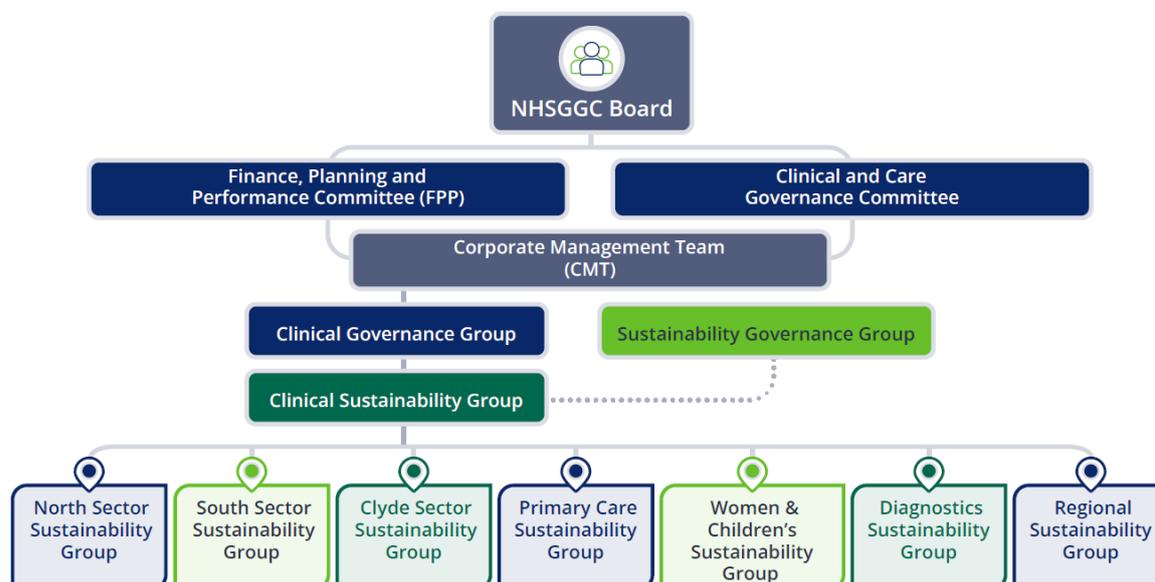
NHSGGC are investigating the possibility of supporting the following long-term Net Zero projects to support the Built Environment;

Site	Project Description	Savings (Kwh)	Savings (tCO2)
7 Health Centres	Installation of Photovoltaics (PV Solar Panels)	417,155	88
Gartnavel General Hospital – Beatson	Replacement of Chillers and installation of photovoltaics	66,484 (Electricity) 782,849 (Gas)	13 125
Queen Elizabeth University Hospital (QEUH)	Waste Water Heat Pump (WWHP) Installation	TBA	TBA

## 7. Sustainable care

Clinical Sustainability is a key component within the Sustainability Framework at NHSGGC. It is the focal point and catalyst in the development of a sustainable health service. The Clinical Sustainability Group oversees the delivery of the National Green Theatre Programme objectives (Bundles A – E) contributing to the aims of NHS Scotland's Sustainable Development Policy and Strategy in developing a sustainable health service. The Clinical Sustainability Group strives to broaden this remit and undertakes any clinical sustainability or quality initiative that meets its triple bottom line approach: Staff/patient improvement, financial sustainability and environmental benefit. By changing how we deliver our clinical services we can empower people to have more control over their health and achieve a long-lasting change which is sustainable and reduces health inequalities.

### Clinical Sustainability Structure



### Key Highlights from 2022/23:

1. **Desflurane** - 99% eliminated from clinical use.
2. **Decommission Nitrous Oxide Manifolds** - MGPS Cylinder Manifold system providing piped Nitrous Oxide supplies to Vale of Leven Hospital - (Theatre Suites - No1, No2 and No3) and the (X-Ray CT Scanner Suite), has been fully decommissioned, as part of a planned improvement initiative that is being rolled out across acute sites.
3. **Heating Ventilation Air Conditioning (HVAC)** – Business Case for QEUH Trial going through governance process and expecting to start in early 2024. If successful the trial will upscale and roll out across all acute sites.
4. **Switch off of out of hours Anaesthetic Gases Scavenging Systems (AGSS)** – Business case is in development and will be taken through appropriate Clinical Governance for approval in early 2024.
5. **Change to Surgical Fluid Suction System** – Trial is currently on going within QEUH Theatres, with view to expansion to other sites. Clinical Sustainability Leads are involved in the National Working Group and Framework development for suction systems. Findings from the trial to date indicate that the system is financially viable in theatres will high volumes of fluid.
6. **Change pre-operative paracetamol from intravenous to oral** - process changes being advanced via HEPMA and realistic medicine leads within the Clinical Sustainability Framework.

7. **Clinical waste segregation** – 5% reduction of Orange Waste volume target was exceeded in 22/23, hitting 10.8%

## 8. Anaesthesia and surgery

Greenhouse gases are used as anaesthetics and for pain relief. These gases are nitrous oxide entonox and the ‘volatile gases’ - desflurane, sevoflurane and isoflurane.

Through improvements to anaesthetic technique and the management of medical gas delivery systems, the NHS can reduce emissions from these sources.

NHSGGC total emissions from these gases in 2022/23 were 470 tCO<sub>2</sub>e a decrease of 84% from the year before.

More detail on these emissions is set out in the tables below:

### Volatile medical gas emissions, 2018/19, 2021/22, 2022/23 – tCO<sub>2</sub>e

	2018/19 (baseline year)	2021/22	2022/23	Percentage change 2018/19 to 2022/23
Desflurane	2499	112	142	-94%
Isoflurane	11	3	2	-82%
Sevoflurane	376	279	326	-13%
<b>Total</b>	<b>2886</b>	<b>394</b>	<b>470</b>	<b>-84%</b>

### Nitrous oxide and entonox emissions, 2018/19, 2021/22, 2022/23 – tCO<sub>2</sub>e

Source	2018/19 (baseline year)	2021/22	2022/23	Percentage change 2018/19 to 2022/23
Piped nitrous oxide	2509	1706	2013	-20%
Portable nitrous oxide	67	76	92	37%
Piped entonox	3502	2917	3228	-8%

Portable entonox	370	366	377	2%
<b>Total</b>	<b>6448</b>	<b>5065</b>	<b>5710</b>	<b>-11%</b>

What did we do last year to reduce emissions from anaesthetic gases?

Desflurane is all but eliminated within NHSGGC and the 1% consumption is being dealt with via clinical colleagues.

What are we doing this year to reduce emissions from anaesthetic gases?

NHSGGC clinical sustainability team is striving to eliminate the remaining 1% through education with local teams and procurement. Unless there is a specific clinical need that can be evidenced.

What are we doing this year to make surgery more sustainable?

NHSGGC has deployed a dedicated corporate resource within the Sustainability Team to coordinate and report on Green Theatres progress. The Green Theatre Sustainability Manager will work closely with clinical sustainability leads and sector level general managers to implement and report on bundle action progress – please refer to clinical sustainability structure - (Page 10).

## 9. Respiratory medicine

Greenhouse gases are used as a propellant in metered dose inhalers used to treat asthma and COPD. Most of the emissions from inhalers are from the use of reliever inhalers – Short Acting Beta Agonists (SABAs). By helping people to manage their condition more effectively, we can improve patient care and reduce emissions.

There are also more environmentally friendly inhalers such as dry powder inhalers which can be used where clinically appropriate.

Estimations show that emissions from inhalers in NHSGGC were 19,747 tonnes of CO2 equivalent.

### Inhaler propellant emissions, 2018/19, 2021/22, 2022/23 – tCO2e

Source	2018/19 (baseline year)	2021/22	2022/23	Percentage change 2018/19 to 2022/23
Primary care	17,790	18,498	19,126	8%
Secondary care	611	598	621	2%

<b>Total</b>	18,401	19,096	19,747	7%
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What are we doing this year to improve patient care and reduce emissions from inhalers?

NHSGGC will develop a plan to prioritise the implementation of this best practice in respiratory health and to switch to low carbon inhaler alternatives in community, primary and acute care settings. This will be supported with appropriate resources and will involve working with partners, including respiratory specialists, HSCPs, GP practices, patients/carers, and others, to develop quality improvement, inhaler switching and preventive health care programmes. This will benefit patient health, reduce hospital admissions and overall healthcare costs, and cut climate emissions.

Progress in reducing MDI prescribing will be reported annually towards the national target of reducing MDI emissions by 70% and implement the Scottish Quality Respiratory Prescribing guide across primary care and respiratory specialities to improve patient outcomes and reduce emissions from inhaler propellant.

## 10. Travel and transport

Domestic transport (not including international aviation and shipping) produced 26% of Scotland's greenhouse gas emissions in 2021. The highest contributor to these emissions being car travel.

NHS Scotland is supporting a shift to a healthier and more sustainable transport system where active travel and public transport are prioritised.

What did we do last year to reduce the need to travel?

Improved Business Travel policy, retained hybrid working and encouraging the use of MS Teams where possible.

What did we do last year to improve active travel?

Increased on site events to promote cycle to work schemes and promote public transport. Remove barriers in salary restrictions on access to season tickets. Extended staff shuttle services.

What did we do last year to improve public and community transport links to NHS sites and services?

Worked with the main bus operators, rail providers and engaged with community transport providers.

What are we going to do this year to reduce the need to travel?

Promote the enhanced Business Travel Policy and promote flexible working/ MS Teams, where possible.

What are we going to do this year to improve active travel?

Increased active travel sessions within the main acute sites and promote cycle to work schemes. Improving awareness and knowledge of alternative, more sustainable public transport options. This will be carried out through positive promotion of NHSGGC hospital sites on all media platforms.

What are we going to do this year to improve public and community transport links to NHS sites and services?

Carry on with the solid relationships we have with the main bus operators and SPT. Introduction of technology to support use of public transport – Real Time Information.

The following table sets out how many renewable powered and fossil fuel vehicles were in NHSGGC’s fleet at the end of March 2022 and March 2023:

	March 2022		March 2023		Difference in % Zero Emissions Vehicles
	Total vehicles	% Zero Emissions Vehicles	Total vehicles	% Zero Emissions Vehicles	
Cars	106	28%	104	40%	12%
Light commercial vehicles	271	20%	260	23%	3%
Heavy vehicles	16	0%	19	11%	11%

There is no information for e-Bikes within the 2022/23 reporting period. For 2023/2024 there has been consultation with Glasgow City and OVO Bikes. This will provide NHSGGC staff discounted membership to the Glasgow Bike Hire Scheme. Hiring a bike will cost £5, plus a £5 deposit. Providing unlimited 60-minute push bike journeys, as well as two 20 minute e-bike journeys every 24 hours. These memberships will last until 31st March 2024. Bike hire facilities are available, or near many sites across NHSGCC. The following table sets out how many bicycles and e-Bikes were in NHSGGC’s fleet in 2022/23:

	March 2022	March 2023	Percentage change
Bicycles	483	500	4%

## 11. Greenspace and biodiversity

Well-managed green and open spaces support can contribute to enhanced biodiversity, climate change adaptation and mitigation, active travel, and a reduction in the effects of air pollution, excessive noise, heat, and flooding. As well as the environmental benefits of greenspace, there is an increasing body of evidence linking access to high quality greenspace with enhanced physical and mental health and wellbeing. Spending time in greenspace has been shown to have both a preventative and restorative effect on health and wellbeing, and this effect is observed most strongly among those living in more deprived areas.

NHSGGC has a significant environmental footprint due to the nature and size of the organisation. As one of the largest public sector landowners in Scotland, this also presents a

significant opportunity to enhance biodiversity and access to greenspace for staff, patients and members of the wider community. Additionally, much of the NHSGGC estate is located within and adjacent to some of Scotland's most deprived areas and communities.

Given the positive impact of Greenspace in Health and Wellbeing facilities, the delivery of Greenspace and Biodiversity improvements will directly contribute towards alleviating Health and Wellbeing inequalities across the NHSGGC estates. Thus, helping to improve quality of life for all.

NHSGGC health board are custodians of a large amount of publicly accessible greenspace. Our vision is to manage this greenspace in a way that benefits both people and planet. We are committed to increasing biodiversity across our outdoor estate, and ensuring our green spaces make a meaningful contribution towards to achieving the national net-zero target. Some of the current initiatives going on across the Board are:

1. Individual projects at some of our hospital sites such as the 'Grow Garden' at the Queen Elizabeth University Hospital.
2. We work with site-based Estates and Facilities teams at our hospital sites to ensure we are continually striving to improve how we manage our outdoor estate.
3. We are working with Public Health Scotland to map our outdoor estate so that we have a better understanding of greenspace provision, access, and quantity.
4. We work with partners such as Nature Scot, The Conservation Volunteers, and Local Authorities. Ensuring our work aligns with wider greenspace and biodiversity agenda.

**Our Objectives:**

- Managing hospital campus sites in a way that improves the extent and quality of greenspace. This will be supported through education and training opportunities. To increase Estate's contribution to biodiversity and improve the value of the Ecosystems services.
- Ensure greenspace is managed to increase provision, and improve access and regular use by staff, patients, and local community.
- Ensure greenspace management is informed by a wider understanding of the current greenspace extent, quality, and biodiversity value across NHSGGC estate.
- Ensure socio-economic deprivation is considered when planning for greenspace improvements.
- Ensure greenspace is managed to assist with climate change mitigation and adaptation.
- Utilise dedicated funding to ensure working group deliverables can be achieved.
- Embed greenspace and biodiversity improvements into capital planning decision making.
- Promote the Greenspace and Biodiversity Work group as a key part of the Sustainability communications strategy.
- Ensure regular reviews of the progress of greenspace interventions to assess the added value of greenspace and demonstrate the impact of greenspace enhancements on health and wellbeing.

What actions have been taken to identify, protect and enhance biodiversity across your organisation?

- Management, maintenance and improvements of existing wetland and aquatic habitats. Such as the 'Halo Gardens' Project, located at the RAH.
- Biodiversity enhancement and protection of habitats, such as wildflower areas.
- Habitat diversity for a range of fauna including bats, nesting birds such as swans, aquatic species and variety of insects and pollinators such as bees.
- The development of NHSGCC Climate Change and Sustainability Strategy 2023 – 2028.
- The development of a Sustainable Management Plan for Royal Alexandra Hospital in Paisley.

What actions have been taken to contribute to the NHS Scotland and Estate Mapping programme, or to develop an internal mapping programme?

- Working alongside the GEP and Nature Scot, NHSGGC aims to begin using GIS to map the NHS estate. Sourcing publicly accessible greenspace, location and type of health activities, deprivation and health data. This information will be used to target the provision and resourcing of future green health activities.

How have nature-based solutions been utilised to address the climate and biodiversity emergencies?

- Wildflower meadow installation and management, located at various sites
- Sustainable urban drainage (SuDs) - Located at the QEUH

What actions have been undertaken to raise awareness, engagement and understanding of biodiversity and nature?

- NHSGGC Sustainability Team aims to improve sustainable development and environmental performance across the board, in line with the UN SDGs. As one of Scotland's largest employers, NHSGGC is well placed to achieve significant positive behavioural change through fostering environmentally conscious thinking due to its size and stature.
- The Sustainability Team aims to achieve this through our Communications Strategy, utilising and improving our use of multiple communication tools and channels, both internally and externally working closely with the board's Communications Department.

Awareness Campaigns

We delivered engaging internal communications to promote greenspace projects such as advertising volunteering opportunities. Our Awareness Calendar allows us to promote Environmental Awareness Days such as Climate Week, Earth Day.

StaffNet enables staff to access a wide range of service information, resources and systems from a single online portal. This includes greenspace and biodiversity initiatives within the board and highlights the benefits and importance of green projects.

Project name/ location	Benefits of project	Details of project
QEUH - AMB Grow Garden	Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing	Semi-permanent structures created with wildflower meadows on brownfield land to encourage access to a relaxing outdoor space on a bustling site. Promoting a quiet and reflective space to practice mindfulness and decompress through for staff, patients and visitors
QEUH - NRU	Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing	Clinically lead greenspace and outdoor improvements for patient rehabilitation
QEUH - Langlands	Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing	Clinically lead improvements to enhance entrance spaces and courtyard gardens for patients during rehabilitation
QEUH – CMB Building Garden	Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing	Transform brownfield land into a respite garden that can serve as a resting and rejuvenating point for staff, patients, and visitors.
RHC – Elsewhere garden	Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing	Royal Hospital for Children, Teapot Trust, and Semple Begg Designers collaborated to relocate the Elsewhere Garden from Chelsea Flower Show to the RHC children’s play area to enhance the area for patient and family respite
RAH – Pond and Beyond	Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing	The Halo Gardens and the Pond are an award winning project that provides access to grassland, wet land and aquatic biodiversity for patients, staff and visitors.

<p>RAH – sustainable management plan</p>	<p>Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing</p>	<p>A first of its kind sustainable maintenance plan to support the works at RAH by encouraging biodiversity with light touch maintenance and community, patient and volunteers involvement. Improving community wealth building indicators and reducing our impact on the environment</p>
<p>Stobhill - Food growing</p>	<p>Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing</p>	<p>Growing beds and polytunnel to be installed to encourage local food growing and green prescribing on site</p>
<p>Leverndale Hospital - Phase 2</p>	<p>Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing</p>	<p>Phase 2 of Design in the Vale where access to improved outdoor space, greenspace and artwork benefit patients and staff</p>
<p>Lennox Castle</p>	<p>Climate change adaptation Climate change mitigation Biodiversity Health and wellbeing</p>	<p>Members of the local community have come together to establish a charity group through which they hope to make improvements to the Lennox Castle site, including the castle. Funding has been secured from various bodies and are applying for National Lottery funding to turn the castle into a university building for art students, and the surrounding grounds to be turned into a 'country park' style greenspace.</p> <p>NHSGGC are owners of this land and are considering proposals to gift the land to the community.</p>

## **12. Sustainable procurement, circular economy and waste**

'Earth Overshoot Day' refers to the date when our demand for resources exceeds what earth can regenerate in that year. In 2023, Global Earth Overshoot Day is 2 August.

For the UK, the picture is more worrying. In 2023, the UK's Earth Overshoot Day is 19 May. The current level of consumption of materials is not sustainable and is the root cause of the triple planetary crises of climate change, biodiversity loss and pollution.

We aim to reduce the impact that our use of resources has on the environment through adopting circular economy principles, fostering a culture of stewardship and working with other UK health services to maximise our contribution to reducing supply chain emissions to net-zero by 2040.

Environmental impact is embedded in the strategy documentation of every procurement process undertaken by the Health Board. Procurement Officers must assess the impact of contract utilisation through the Sustainable Procurement Tools listed on the Scottish Governments Procurement Journey website- including (but not limited to) The Prioritisation Tool and Sustainability Test. Outcome of these assessments are listed within the relevant section of the contracting strategy document for review and sign off by Head/Deputy Head of Procurement.

All procurement processes with a listed value of £4m or above are listed as Priority Contracts with regards to climate change. In most instances the National Procurement organisation would conduct the process on behalf of all NHS Scotland Health Boards. The national organisation will embed selection and award criteria relating to climate change, and include Sustainability Leads within its Advisory Panel prior to the tender process being undertaken. In the case of a local tendering process, the procurement department would liaise with the Health Boards sustainability leads prior to tendering.

NHSGGC attends a monthly National Sustainability Steering Group (Head/Deputy Head of Procurement representation) to ensure the Health Board contributes and impacts the national sustainability strategy for procurement.

Engagement has been ongoing with key suppliers to ensure the Scottish Governments "Net Zero by 2045" requirement will be met.

Maximising utilisation of the National Distribution Service (NDS) - the central distribution point for NHS Scotland- mitigates vehicle emissions impact. The majority of the Health Boards fast moving common medical consumables are sourced through the NDS Supply Route.

In the post covid landscape, tendering activity has settled to a more strategic approach both locally and nationally. NHSGGC procurement department will continue to identify key priority projects to maximise engagement and ensure environmental impact is mitigated.

What did we do last year to reduce the environmental impact of the goods and services we buy?

NHSGCC is committed to making net zero a key consideration for all procurement activities and no longer purchase from suppliers that do not meet or exceed a commitment to be net zero. Sustainable Procurement requires NHS Scotland to work alongside suppliers to take into consideration the whole lifecycle, environmental, social and ethical impact of procured goods & services.

The NHS purchases products from suppliers all over the world and an environmentally and socially responsible approach implements an opportunity to boost health and wellbeing throughout the UK and globally. Embedding sustainability at the heart of procurement decisions can reduce negative impacts on the local community and those around us, whilst bringing the organisation closer to our net zero goals.

What we are doing

- Invested in a Carbon Footprint Tool – allows NHSGGC to identify where we are being wasteful with carbon and taking action to reduce the waste and emissions; such as reducing packaging, take back schemes and identifying areas for managed services to move away from single use
- Increase and improve the measuring and monitoring of associate carbon emissions from all goods and service providers; by doing
- Increase the scope and weight given to contracts and product selection that support and directly reduce associated carbon emissions;
- To only purchase products or services from suppliers that are aligned with net zero commitments;
- Review and select only procurement frameworks that have committed to a net zero target;
- Change of pack size to National Uniforms to deliver a 50% plastic packaging reduction and cost cuts of waste disposal;
- Commit to reducing our reliance on single-use equipment, investing in take-back schemes and reuse schemes where possible. Such as the utilisation of new suction technology in theatres to reduce plastic waste.

What are we doing this year to reduce the environmental impact of the goods and services we buy?

Our Objectives this year in line with our Sustainable Procurement working group are the following:

**Embed sustainability criteria into local contracts**

Embed sustainability requirements within local tendering activity by ensuring that these are built into contract selection and/or award criteria and ensure whole lifecycle costing methodology is used in commercial criteria where appropriate

**Procurement Climate Literacy Training**

Ensure all Procurement Officers within Procurement and devolved departments have undertaken and are aware of Scottish Government Sustainable Procurement Tools

### Reduce carbon output of our supply chain

- Initial indications of CO2A Analysis Tool inferred a carbon output on £958m non-pay spend of 380,000 tonnes (0.397 tonnes per £ of spend). Refine output and create carbon reduction plans (including product composition and packaging) with our largest impacting suppliers by category of spend for initial 5% reduction
- Procurement team to participate fully in the national Green Theatres Programme
- Continue with the Warp-It programme but undertake refreshed appraisal as to cost/benefit and future viability.

### Increase Sustainable procurement communications

Develop a communications plan to highlight work being undertaken by Procurement in order to raise awareness and gain traction.

### Fair Work Practices

Full implementation of SPPN 6/2021 (Fair Work First implementation) within local contract tendering process.

### Ethical Standards within Supply Chain

Ensure maximum use of Project Bank Accounts within in scope construction projects to ensure prompt payment to contractors and sub-contractors in line with SPPN 10/2016

Ensure Ethical Standards are enshrined in all local contracting activity where appropriate, including Human Rights, Modern Slavery, Whistle blowing, and application of the Serious Organised Crime Protocol and use of Fairtrade products.

### Waste Management & Circularity

We want to reduce the amount of waste we produce and increase how much of it is recycled.

The table below sets out information on the waste we produce and its destination for the last three years:

Type	2020/21 (tonnes)	2021/22 (tonnes)	2022/23 (tonnes)	Percentage change (2021/22 to 2022/23)
Waste to landfill	0	0	0	0
Waste to incineration	6243	5,255	5,103	-3%
Recycled waste	315	921	969	5%
Food waste	359	292	280	-4%
Clinical waste	Not available	5,915	5,530	-7%

We have set targets to reduce the amount of waste we produce, and the tables below provide information on our performance against those targets:

<b>Reduce domestic waste by a minimum of 15%, and greater where possible compared to 2012/2013 – by 2025</b>	
Target – reduce domestic waste by	1056(tonnes)
Performance – domestic waste reduced by	1073 (tonnes)
Outcome	ACHIEVED
Further reduction required	N/A

Domestic waste (General/Recycling - food/organic omitted as no data available in 2012/13)  
**Ensure that no more than 5%, and less where possible, of all domestic waste is sent to landfill – by 2025**

Target – reduce waste sent to landfill by	No baseline
Performance – waste sent to landfill reduced by	No domestic waste sent to landfill (tonnes)
Outcome	ACHIEVED
Further reduction required	N/A

**Reduce the food waste produced by 33% compared to 2015/16\* – by 2025**

**\*No data available for 2015/16, data based on 2019/20**

Target – reduce food waste by	173 (tonnes)
Performance – food waste reduced by	245 (tonnes)
Outcome	ACHIEVED
Further reduction required	N/A

**Ensure that 70% of all domestic waste is recycled or composted – by 2025**

Target – recycle or compost	4436 (tonnes) /70%
Performance – recycled or composted	1323.90(tonnes)/20.8%
Outcome	Action Plans in place to achieve target. Risks identified and escalated to reflect national procurement re-tender of waste contract to support target.
Further increase required	3112.49 (tonnes)

What did we do last year to reduce our waste?

- Consistent auditing across acute sites to monitor waste segregation
- Development of training materials to improve education
- Improved signage and posters to improve ease of segregation
- Implementation of equipment i.e. balers to enable cardboard compaction and rebate

What are we doing this year to reduce our waste?

- Waste Champion programme – each site having a designated person to promote and drive recycling on site
- Continued auditing of sites
- Further training around the implementation of equipment which improves segregation and handling of waste
- Training staff (external training) to perform audits to improve waste segregation, reduce environmental impact, costs and ensure compliance.

## 13. Environmental stewardship

Environmental stewardship means acting as a steward, or caretaker, of the environment and taking responsibility for the actions which affect our shared environmental quality.

This includes any activities which may adversely impact on land, air and water, either through the unsustainable use of resources or the generation of waste and pollution. Having an Environmental Management System (EMS) in place provides a framework that helps to achieve our environmental goals through consistent review, evaluation, and improvement of our environmental performance.

What steps did we take last year to develop and implement our EMS?

The Sustainability Team continued with the development of the Environmental Management System (EMS), progressing on the below;

- Procurement of the Business Management System software tool, Q-Pulse.
- Conducting training to improve ISO standard awareness and auditing experience
- Restructuring of the Sustainability Team and recruitment of Sustainability & Environmental Manager

What did we do last year to improve our environmental performance?

- Waste Targets<sup>1</sup>
- Ensure compliance with statutory permitting (PPC Permits) at Glasgow Royal and Queen Elizabeth University Hospital

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<sup>1</sup> Section 12 – Waste Targets

*What steps will we take this year to further develop and implement our EMS?*

The Gap analysis has been conducted against ISO14001:2015 and the common elements of ISO9001:2015. This is in recognition that quality management systems standardise and streamline organisations by promoting improved product/ service provision, customer satisfaction, and overall operational efficiency.

For Estates and Facilities Directorate developing the strategic intent has initiated to adequately contextualise the organisation and finalise scope. At an operational level, the Aspects & Impact Registers are being developed as well as the compliance obligations via an end-to-end review of the legal and permit register.

*What are we doing this year to improve our environmental performance?*

- Quality & Environmental Policies
- Legal Register Development
- Integrated Management System Approach
- Implementation of Environmental Management System

Through implementing the EMS, the compliance obligations and in turn respective requirements established to be monitored, measured, analysed and evaluated. The EMS will provide the structured framework to establish a robust baseline of environmentally related performance, acting as a benchmark for implementation of continual improvement initiatives and the basis for setting environmentally related performance targets and objectives.

## **14. Sustainable construction**

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.

By adopting sustainable construction practices, NHSGGC can reduce our environmental impact, improve their resilience, and promote a healthier environment for patients and staff.

The NHS Scotland has published a guidance document, Sustainable Design and Construction (SDaC) Guide (SHTN 02-01), which provides advice on sustainable design, construction, and refurbishment of health and social care facilities. The guide details the process and various approaches, actions, plus considerations required to deliver sustainable performance outcomes, with additional supporting standards, signposting to good practice case studies, and reference to several leading industry frameworks, methodologies, and detailed sustainability targets.

NHSGGC is working on the following building projects with either BREEAM or SDAC has been used:

### **Glasgow North-East hub**

- Construction progress on programme to complete July 2024. New building scheduled to open to public circa October 2024 with sectional completion of car park. Once occupied the existing Health Centre will be demolished and the car park completed by August 2025. Key aspects of the design include
- Enhanced insulation and triple glazing throughout
- Natural ventilation where applicable
- Enhanced air permeability rating of  $2\text{m}^3/\text{m.m}^2@50\text{Pa}$
- 75kWp of photovoltaic panels on roof
- Heating via air-source heat pumps
- Point of use water heaters to minimise overheating
- 34 EV charging points.
- Extensive Social Value programme being monitored by SG and SFT together with long-term benefits in relation to targets for impact on health inequalities.
- Promotion of green travel plan.
- Total Embodied Carbon to be  $475\text{kgCO}_2/\text{m}^2$ .

### **New build small scale primary care centre at Dargavel / Bishopton**

- Part of Dargavel masterplan. Layouts agreed and building designed with focus on embodied carbon. Planned site start Q2 2024 with completion Q2 2025. Fully compliant with new SDAC guidance. Key aspects of the design include:
- Enhanced insulation and triple glazing throughout
- Natural ventilation where applicable
- Enhanced air permeability rating of  $2\text{m}^3/\text{m.m}^2@50\text{Pa}$
- 25kWp of photovoltaic panels on roof
- Heating via air-source heat pumps
- Point of use water heaters to minimise overheating
- 2 EV charging points.
- Total Embodied Carbon to be  $<600\text{kgCO}_2/\text{m}^2$  or better.

### **Radionuclide Dispensary Relocation**

- Outline Business Case approved at NHSGGC Board meeting on 28<sup>th</sup> February 2023.
- Approval required from Scottish Government at CIG meeting on 22<sup>nd</sup> March 2023. Fully compliant with new SDAC guidance.
- Enhanced insulation and triple glazing throughout
- Natural ventilation where applicable
- Enhanced air permeability rating of  $0.6\text{m}^3/\text{m.m}^2@50\text{Pa}$
- 100m<sup>2</sup> of photovoltaic panels on roof
- Heating via air-source heat pumps
- Point of use water heaters to minimise overheating
- 4 EV charging points.
- Total Embodied Carbon to be  $<600\text{kgCO}_2/\text{m}^2$  or better.

Over the next year we will be undertaking the following activities with our construction projects:

- Develop and implement a sustainable capital projects plan which ensures all potential opportunities in new builds and major refurbishments are leveraged for sustainability benefit, including climate change and net zero.
- Develop a process to undertake a comprehensive Buildings Performance Evaluation during design development and post project evaluation stages and disseminate our finding to others.
- Identify opportunities for waste minimisation, streamlining operations, increasing efficiency, circular economy initiatives and financial savings
- Develop and implement a process to assess buildings (when leasing and procuring) based on their sustainability performance.
- Increase spend with local businesses
- Maximise Community Benefits
- Ensure Procurement contributes to the Community Wealth Building and Anchor Institution agendas
- Fair Work Practices
- Ethical Standards within Supply Chain

## **15. Sustainable communities**

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.

- The impact the NHS has on people’s health extends well beyond its role as a provider of treatment and care. As large employers, purchasers, and capital asset holders, health care organisations are well positioned to use their spending power and resources to address the adverse social, economic and environmental factors that widen inequalities and contribute to poor health.
- There is an increasing national, regional and local policy ambition to unlock the potential of anchor organisations, including NHSGGC. Anchor organisations like NHSGGC have power and leverage to stimulate the regional economy in their roles as both large-scale employers and high-value procurers. Additionally, they can use property and land to support local communities, reduce the environmental impact by working sustainably, collaborating with local partners to model good practice and share ideas. Clearly, there is great potential at the scale of NHSGGC, and wider when we collaborate with Glasgow City Region partners.
- The NHS has potential to not only improve the health and wellbeing of communities as part of core business, but by using its resources wisely it can have an even bigger impact on the wider determinants of health, to reduce inequalities and to contribute to building the wealth of our local communities.
- Our Strategic Delivery Plan will ensure NHSGGC works closely with our local partners, ensuring our property and assets positively benefit our local population. Our Anchor

Strategic Delivery Plan will be a route to deliver community wealth building outcomes, with a particular focus on employment, procurement and land and assets and our contribution to a range of partnerships. The first version of the delivery plan can be found at our [Community Wealth Building webpage](#). The plan outlines some of the activity that has taken place over the past few years and our aspirations for the future.

## 16. Conclusion

In response to the Scottish Government launching “A Policy for NHS Scotland on the Climate Emergency and Sustainable Development (DL 38)” our strategy was developed to encompass NHSGGCs medium term sustainability objectives (2023 – 2028) as a platform to build on for the longer term 2038 and 2040 targets. These targets are embedded objectives in the Annual Delivery Plan (ADP) and Medium-Term Plan (MTP) planning guidance issued by the Scottish Government. NHSGGC sustainability governance framework provides the appropriate governance and delivery groups ensuring engagement with relevant stakeholders, to drive objectives in the following priority areas:

1. Energy Transition
2. Waste Management & Circularity
3. Transport
4. Green Theatres
5. Environmental Management

To successfully implement the required changes to deliver our sustainability strategy, a thorough understanding of the risks associated with the delivery of objectives is key. Allowing the governance framework to highlight risks associated with implementing the sustainability agenda through the Board’s risk register and put in place control measures to lessen their likelihood. Where possible we will also flag opportunities to work with external partners and embrace technologies to meet our targets, which are currently out with the scope of business-as-usual operations.

Regular SWAT analysis will be undertaken by the working groups that will inform the Risks, Assumptions, Issues & Dependencies (RAID) log with the working group charters, covering the timespan of this strategy and as a core part function of our broader Integrated Management System approach

## 17. Glossary of Terms

<b>Term</b>	<b>Definition</b>
MDI	Metered Dose Inhalers
GEP	Green Exercise Partnership
GIS	Geographical Information Systems
UN SDG	United Nations Sustainability Development Goals
BREEAM	Building Research Establishment Environmental Assessment Methodology
SDAC	Sustainable Design and Construction Guide