

NHS Forth Valley Annual Climate Emergency and Sustainability Report 2022/23

January 2024

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1. About

It has been widely recognised that the climate crisis is a health crisis and many of the drivers of climate change are drivers of ill health and health inequalities.

Updated climate change and sustainability policy/strategy documents have been issued to NHS Scotland by the Scottish Government (SG):

- The Policy for NHS Scotland on the Climate Emergency and Sustainable Development (DL (2021) 38) can be accessed [here](#).
- The NHS Scotland Climate Emergency and Sustainability Strategy 2022 – 2026 can be accessed [here](#).

These documents set out the significant challenges that lie ahead. Priority areas for action have been identified:

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

NHS Forth Valley has acknowledged that significant and long-term changes to the way care is delivered will be required to ensure this NHS Board makes an effective contribution to the national/global drive to limit the impacts of climate change.

The NHS Forth Valley Climate Emergency & Sustainability Strategy and Action Plan 2023 – 2026 was approved by the Board's Executive Leadership Team in June 2023 and adopted by the NHS Board in July 2023.

- The NHS Forth Valley Climate Emergency & Sustainability Strategy and Action Plan 2023 – 2026 can be accessed [here](#).

2. Introduction

This is NHS Forth Valley's second Annual Climate Emergency and Sustainability Report, covering Financial Year 2022/23. It provides details of the actions taken by the Board to initiate an effective climate emergency response. Each section within the report summarises what was done in 2022/23, together with an overview of what the Board aims to deliver in 2023/24 where appropriate.

NHS Forth Valley (NHS FV) employs in the region of 6,000 people (whole time equivalents) who are responsible for delivering healthcare for more than 300,000 people living in the Forth Valley area. The Board provides a range of community based and acute hospital services from an operational property portfolio (owned and leased) that consists of 104 properties based at 55 individual sites with a floor area totalling 190,528m². Of the total NHS Forth Valley estate, 41% is owned, 1% is leased and 57% is Public/Private Partnership property.

Within the reporting period, NHS Forth Valley (NHS FV) has initiated the process to shift onto a net-zero trajectory. The mandatory targets and requirements set out in DL (2021) 38 - the NHS Scotland Climate Emergency & Sustainable Development Policy - have been adopted at NHS FV Board level.

3. Leadership and governance

An NHS FV Climate Emergency and Sustainability Board has been established to oversee the NHS Board's response to the climate emergency.

The Climate Emergency & Sustainability Board for NHS FV is chaired by the Chief Executive. Membership includes, but is not limited to:

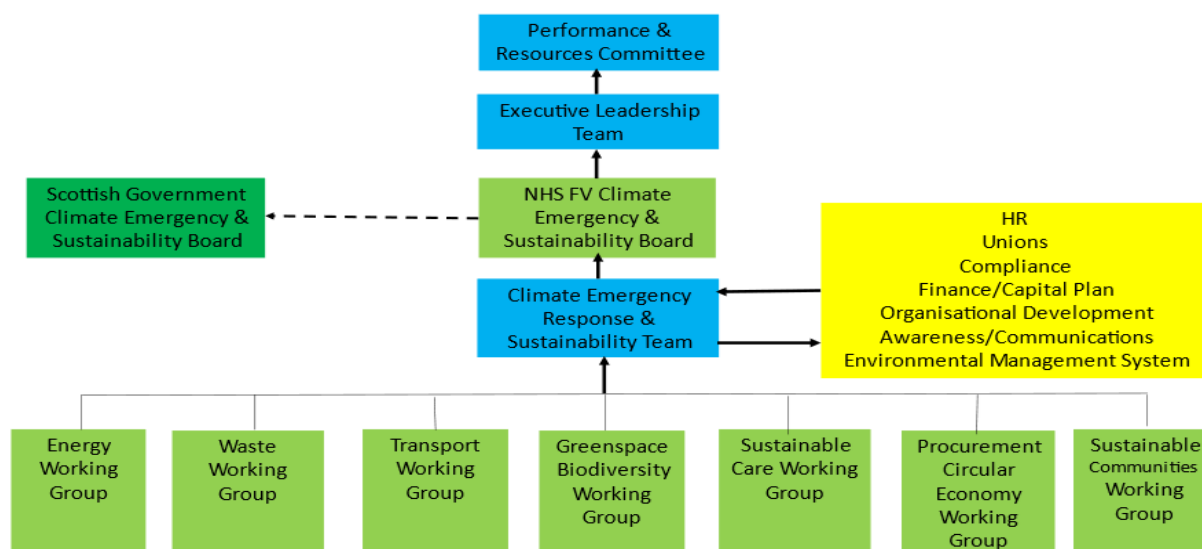
- Chief Executive
- Director of Facilities & Infrastructure (Executive Lead for Sustainability)
- Director of Finance
- Director of Pharmacy
- Director of Public Health & Strategic Planning (Board-level Sustainability Champion)
- Medical Director
- Employee Director
- Representatives from Health & Social Care Partnerships
- Associate Director of Facilities & Infrastructure
- Director of Acute Services
- Director of Corporate Portfolio Management Office, Women & Children's Directorate, Chief Midwife

The NHS FV Climate Emergency & Sustainability Board has both a governance and a strategic role and, in line with requirements within DL (2021) 38, is responsible for reporting progress to the Scottish Government's Climate Emergency & Sustainability Board. Further, the NHS FV Executive Lead for Sustainability is the Director of Facilities & Infrastructure, and the NHS FV Sustainability Champion is the Director of Public Health & Strategic Planning.

A Climate Emergency Response & Sustainability Team has been established to oversee delivery of outcomes within the Board's Climate Emergency & Sustainability Action Plan. The Response Team has both a strategic and an operational role in NHS FV's response to the climate emergency. It is responsible for reporting progress to the NHS Forth Valley Climate Emergency & Sustainability Board and coordinates output of the strategic Working Groups that have been established to address the requirements within DL38.

Figure 1 below summarises the internal governance and operational structure that has been established to respond to the climate emergency.

Figure 1: NHS Forth Valley climate emergency response governance and operational structure



In addition, outwith the reporting period, a Communications Group has been established and discussions are ongoing to incorporate representatives from IT and Medical Devices into the working group arrangements.

As summarised above, Leadership, governance and operational structures are robust, and NHS FV is well placed to build on these arrangements to respond effectively to the climate emergency.

The information presented in this report is a summary of the extensive work carried out by the Working Groups shown above in Figure 1.

4. Greenhouse gas emissions

In line with the requirements set out in DL38, NHS Forth Valley aims to become a net-zero organisation by 2040 for the sources of greenhouse gas emissions set out in Table 1 below. The table sets out the amount of greenhouse gas produced annually by NHS Forth Valley.

The information presented in Table 1 below should be reviewed and considered with the targets and outcomes that have been set by NHS FV in mind. Details of NHS FV-specific targets and outcomes are included within the NHS Forth Valley Climate Emergency & Sustainability Strategy and Action Plan 2023 – 2026, which can be accessed [here](#).

Table 1: Greenhouse gas emissions 2021/22 & 2022/23, tonnes CO2 equivalent (tCO₂e)

Source	2021/22 – emissions (tCO ₂ e)	2022/23 – emissions (tCO ₂ e)	Percentage change – 2021/22 to 2022/23	2022/23 – target emissions	Percentage difference between actual and target emissions – 2022/23
Building energy (electricity and gas)	14,322.5	14,104.2	-1.52%	NHS FV buildings energy targets are associated with consumption in kWh for gas and electricity to facilitate monitoring and measuring of absolute reductions	Comparing buildings emissions for 2022/23 against 2014/15 (the Public Bodies Climate Change Duties baseline) shows a 40% reduction (i.e. 23,511.3 tCO ₂ e in 2014/15 down to 14,104.2 tCO ₂ e in 2022/23)
Non-medical F-gas use	159	Not yet available	It is not currently possible to accurately report fugitive F-Gas emissions. The F-Gas registers for affected sites only includes data for the total gas charge (capacity) of the unit. F-Gas data was also not previously reported	Not yet available	Not yet available
Medical gases (piped and portable)	1131	1380	22%	Details of the medical	The increase in emissions in

nitrous and Entonox, Desflurane, sevoflurane and isoflurane)				gases targets adopted by NHS FV can be found below in Section 7: Sustainable Care	22/23 is mainly associated with the gas purging that was required to decommission the piped nitrous system
Metered dose inhaler propellant (Primary and Secondary)	4385*	4057.56*	-7.4%	NHS FV metered dose inhaler target is to reduce associated CO2e emissions by 20% by 2023/24 compared with the 2021/22 baseline	
NHS fleet use	<p>Core Fleet:</p> <p>Diesel 172 Petrol 124.4</p> <p>Total 296.4</p>	<p>Core Fleet:</p> <p>Diesel 171 Petrol 59.6</p> <p>Core Fleet Total emissions 230.6</p> <p>Plus emissions sources not previously reported:</p> <p>Hired vehicles 103.2 Leased diesel 7.9 Leased petrol 59.4</p>	<p>Core Fleet emissions percentage change -22%</p> <p>Progress against the New Fleet Total emissions will be reported in 2023/24</p>	<p>NHS FV fleet target is the percentage of fleet (where appropriate) that is electric compared with previous year – aligned to achieving the national target for all fleet vehicles (where appropriate) to be electric by 2025</p>	<p>Of the total Core Fleet Vehicles, 54% (135 no) are now Electric Vehicles</p>

		New Fleet Total emissions 401.1			
Waste (all waste streams)	233.2	198.51	-14%	NHS FV waste targets are associated with waste arisings in tonnes for specific waste streams	
Water	56.2	54.3	-3.3%		
Business travel	438.5	484.8	10.55%	Business travel is returning to pre-pandemic levels. NHS FV does not currently have business travel targets in place.	Not yet available
Total (N.B. These figures are different from those reported historically in the Public Bodies Climate Change Duties (PBCCD) annual report for 2022/23 due to inclusion of additional emissions sources that are a requirement within DL (2021) 38 the NHS Scotland	21,021.7	20,680.47 **	-1.6%	The NHS FV target is to Become a net-zero greenhouse gas emissions health board by 2040.	N.B. Comparing the 2022/23 emissions that were included within the original scope (i.e. excluding tCO2e that have been introduced to the baseline in the reporting year) against the 2014/15 (PBCCD) baseline shows a 38%

Climate Emergency & Sustainable Development Policy https://www.sehd.scot.nhs.uk/dl/DL(2021)38.pdf The revised PBCCD footprint for NHS FV reported in 2022/23 is: 21,715 tCO ₂ e)					reduction which also represents a 3.1% reduction compared with 2021/22 (i.e. 16,102 tCO ₂ e down to 15,193 tCO ₂ e).
Carbon sequestration	Not yet available	Not yet available	Not yet available	Not yet available	Not yet available
Greenhouse gas emissions minus carbon sequestration	Not yet available	Not yet available	Not yet available	Not yet available	Not yet available

*Data provided by SG/NHS Assure for 2021/22 and 2022/23

**As shown in Table 1, the data collection processes that inform the Board’s carbon footprint are becoming more accurate and robust, and the tonnes of CO₂ equivalent reported is more comprehensive. The emissions data presented in this report for 2022/23 is effectively a re-baselining of the NHS FV carbon footprint.

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/

The NHS Scotland Climate Change Risk Assessment (CCRA) Toolkit has been used by NHS FV to assess the risks facing the organisation. Colleagues from a range of departments and services attended an initial workshop to inform the NHS FV CCRA and identify the key risks. This was followed by another workshop, attended by representatives from the NHS Board’s Risk Management, Resilience and Contingency Teams – the risks initially identified were revisited and the scores etc verified.

NHS Forth Valley has:

1. A better understanding of how current severe weather and climate change affects service delivery.
2. Used impact and risk assessments to identify and prioritise threats and opportunities.
3. Worked with suppliers to improve organisational resilience by developing emergency plans e.g. with utility suppliers in the event of business disruption/major incidents.
4. Aligned climate change considerations with Business Continuity Plans.

NHS Forth Valley will:

1. Build on the progress made to ensure climate risks are incorporated into the Board's existing risk management processes.
2. Review, monitor and evaluate risks on an ongoing basis.

The climate emergency and compliance with DL38 is included within the NHS FV Strategic Risk Register and it was agreed following the second CCRA workshop that, whilst the NHS Scotland CCRA Tool had been useful in getting the NHS Board to this point, it was important to align this risk management process with existing Corporate Risk Assessment and scoring arrangements.

NHS FV acknowledges the importance of adapting to a changing climate; and when resources permit will ramp up efforts to finalise the Adaptation Plan.

6. Building energy

The size of the NHS FV properties ranges from small properties that are less than 500m² to Forth Valley Royal Hospital which extends to approximately 96,500m². Over 50% (by number of properties) of NHS Forth Valley's properties are less than 500m². This includes medium sized and small health centres, hospital-based buildings, stores, offices, and residential accommodation.

The NHS Board's healthcare estate portfolio consists of:

- 1 Acute Hospital (PPP)
- 5 Community Hospitals
- 57 Community Premises

Forth Valley Royal Hospital (FVRH) is the key facility in NHS Forth Valley's drive to deliver high quality, sustainable, cost-effective healthcare for residents in the Forth Valley area. FVRH is a PPP/PFI site located in Larbert, the Hospital opened in 2010 and is one of the most modern and well-equipped hospitals in Europe. At present, the Hospital has 25 wards, 16 operating theatres and 4000 rooms with 860 beds/day care spaces.

- In 2022/23, 14,104.2 tonnes of CO₂ equivalent were produced by NHS FV use of energy for buildings. This was a decrease of 1.52 % since the year before.
- In 2022/23, NHS FV used 75,843.9 MWh of energy. This was an increase of 1.8% since the year before.
- In 2022/23, NHS FV generated 83.6 MWh of energy from renewable technologies.

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

Table 2: Building energy emissions, 2015/16, 2021/22 and 2022/23 – tCO₂e

	2015/16 energy use	2021/22 energy use	2022/23 energy use	Percentage change 2015/16 to 2022/23
Building fossil fuel use (gas)	10575.4	9343.5	9471.8	-10.4%
District heat networks and biomass	n/a	n/a	n/a	n/a
Grid electricity (does not include transmission and distribution emissions)	11562.4	4979.0	4632.4	-59.9%
Totals	22,137.8	14,322.5	14,104.2	-36.2%

Table3: 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 (gas)	57334.7	51012.7	51889.0	-9.4%
District heat networks and biomass	n/a	n/a	n/a	n/a
Grid electricity (does not include transmission and distribution emissions)	25016.5	23449.3	23954.9	-4.2%

Renewable electricity (produced by NHS FV)	n/a	69.36	83.6	n/a
Totals	82351.2	74558.36	75927.5	-7.8%

The NHS FV Energy & Facilities Management Working Group has the following targets/metrics:

Emissions from Buildings Based on actual consumption Estate GIA -190528 square metres								
Source	PBCCD Baseline 2014/15		PBCCD emissions previous year (2021/22)		Annual Consumption Targets - percentage reduction compared against previous year			Total percentage reduction in consumption by 2025/26 compared with 2021/22
	Consumption	Emissions (tCO2e)	Consumption	Emissions (tCO2e)	2023/24	2024/25	2025/26	
Electricity	24,251,404 kWh	13,572.60	23,449,368 kWh	4,979	-2.50%	-2.50%	-2.50%	-7.50%
Gas	53,731,513 kWh	9,938.70	51,012,741 kWh	9,343.50	-2%	-2%	-2%	-6%
Water	189,421 m ³	65.2	171,048 m ³	18.8	-2%	-2%	-2%	-6%

The total kWhs of renewable electricity generated by NHS FV in 2021/22 = 69.36 MWh

Target increase in renewable energy generated by NHS FV by 2025/26 = 10% increase from 2021/22 baseline

In addition, NHS FV aims to use renewable heat sources for all its owned buildings by 2038.

Within the reporting period (2022/23), the main focus has been on developing and adopting the NHS Forth Valley Climate Emergency & Sustainability Strategy and Action Plan 2023 – 2026, which sets out details of the initial steps towards net-zero emissions.

In addition to initiating the recruitment process to bring an Energy & Sustainability Manager into the team, and securing recurring funding for another two new posts (Environmental & Sustainability Officer and Information & Administrative Assistant), the following activities have been ongoing:

1. Green Public Sector Estate Decarbonisation Scheme (GPSEDS) - Pre-Capital funding (£50k) was secured to survey Primary Care sites (Health Centres) to identify and quantify energy conservation measures to inform a bid for GPSEDS funding.
2. GPSEDS bid prepared and submitted - £1.9m secured for implementation of measures in next reporting period (multiple energy conservation measures in 13 sites).
3. Bid for grant funding to deliver a 'Hybrid Heating' pathfinder project resulted in a £527k grant from SG which was added to £200k Board Capital. This project scopes out the costs and implications of the DL38 requirement for NHS Scotland to shift away from

gas as the main fuel used to heat healthcare buildings: i.e 'All NHS owned buildings must be heated from renewable sources by 2038 or earlier where possible'.

4. £2m secured for investment in improving the energy performance of Forth Valley Royal Hospital, the Board's main Acute site that accounts for ~50% of the NHS FV total energy consumption. A programme of work (with significant PPP/PFI contractual implications to overcome) will see a range of energy conservation measures implemented at this site.

In 2023/24 the projects and activities outlined above will continue and shift into construction/implementation.

The GPSEDS project will deliver independently verified annual (recurring) independently verified and guaranteed savings, following procurement via an NDEE Energy Performance Contract (EnPC), for the provision of decarbonisation measures across 13 Primary Care/Community sites.

The project will see the Energy Conservation Measures (ECMs) in Figure 2 below delivered.

Figure 2: NHS Forth Valley GPSEDS ECMs

Site	Mandated Works			Aspirational Works			
	ECM1 BMS Upgrades	ECM 2 Glazing	ECM 3 LED Upgrades	ECM 4 Roof Insulation	ECM 5 TRVs	ECM 6 Solar PV	ECM 7 Electric Boilers
Airth Health Centre	✓		✓			✓	
Bannockburn Health Centre	✓	✓	✓	✓		✓	
Bo'Ness Hospital	✓			✓		✓	
Camelon Health Centre	✓	✓				✓	
Clackmannan Health Centre						✓	
Dunblane Health Centre		✓		✓		✓	
Falkirk Community Hospital – Westburn Medical Practice						✓	
Falkirk Community Hospital – Woodlands Resource Centre			✓	✓		✓	
Orchard House Health Centre	✓	✓		✓	✓	✓	✓
SHCV Livilands Resource Centre	✓					✓	
Slamannan Health Centre						✓	
St Ninians Health Centre	✓	✓		✓		✓	
Tullibody Health Centre				✓		✓	

The Forth Valley Royal Hospital PV install was originally designed to have a 1.2MWp output - Scottish Power Energy Networks declined the application due the fault levels in the local grid. The project will now see a 200kWp array installed on the energy centre roof to provide on-site electricity generation. The underspend (i.e. the difference between a 1.2 MW array and a 200kW array) will now be invested in LED lighting upgrades at the site. New free-cooling chiller equipment has already installed which delivers up to 70 tonnes saving/year.

Both projects summarised above will deliver significant savings.

7. Sustainable care

The way we provide care influences our environmental impact and greenhouse gas emissions. NHS Scotland has three national priority areas for making care more sustainable – anaesthesia, surgery and respiratory medicine.

Clinicians and staff must be at the heart of NHS Scotland’s climate emergency response. The NHS Forth Valley Sustainable Care Working Group has 7 priority areas of activity: Medical Gases, Green Theatres, Inhalers, Realistic Medicine, Care Pathways (and ‘green/active’ alternatives), Medicines and Supporting Primary Care.

8. Anaesthesia and surgery

Greenhouse gases are used in the formulation of ‘medical gases’ that are used as anaesthetics and for pain relief. These medical gases include nitrous oxide (laughing gas), entonox (a mixture of oxygen and nitrous oxide) 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.

- NHS FV’s total emissions from these gases in 2022/23 were 1380 tCO_{2e}, an increase of 22% from the year before. The increase in emissions in 22/23 is mainly associated with the gas purging that was required to decommission the piped nitrous system which has subsequently reduced piped nitrous emissions to zero.

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

Table 4: Volatile medical gas emissions, 2018/19, 2021/22, 2022/23 – tCO_{2e}

	2017/18 (baseline year)	2021/22	2022/23	Percentage change 2017/18 to 2022/23
Desflurane	365	0	0	-100%
Isoflurane	1	1	1	0%
Sevoflurane	53	40	40	-24%
Total	419	41	41	-90%

Table5: Nitrous oxide and entonox emissions, 2018/19, 2021/22, 2022/23 – tCO_{2e}

Source	2018/19 (baseline year)	2021/22	2022/23	Percentage change 2018/19 to 2022/23
Piped nitrous oxide	246	64	472	91% ** The increase in emissions in 22/23 is mainly associated with the gas purging that was required to decommission the piped nitrous system
Portable nitrous oxide	39	17	30	-23%
Piped entonox	855	940	781	-8.6%

Portable entonox	59	69	56	-5.0%
Total	1199	1090	1339	11.6%

NHS Forth Valley is fully supportive of the NHS Scotland Green Theatres Programme (NGTP) and has been involved in delivery of associated projects for several years. The Sustainable Care Working Group will continue to implement initiatives and changes where appropriate and possible.

In particular, the aim is to achieve six out of the seven 'Bundle A' targets set by the NGTP. For reference, the NGTP 'Bundle A' projects are:

1. Desflurane – this has been removed from all NHS FV stock lists and has not been used by the Board for more than 18 months.
2. Oral Paracetamol vs intravenous – NHS FV is looking to identify opportunities to reduce associated emissions.
3. Anaesthetic Gas Scavenging System (AGSS) – review options to switch the system off out of hours.
4. Theatres ventilation system – adjust settings and set-points to deliver energy savings.
5. Nitrous oxide – decommissioning the manifold for piped nitrous: now complete.
6. Surgical fluid system – roll-out following pilot project.
7. Waste segregation/minimisation – underway and ongoing.

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.

- We estimate that emissions from inhalers in NHS FV in were 4057.56 tonnes of CO₂ equivalent. 2022/23 Data provided by SG/NHS Assure

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

Table 6: 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	3420.6	-	3963.93	15.8%
Secondary care	91.05	-	93.63	2.8%

Total	3511.65	4385*	4057.56	15.5%
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*Figure provided by SG/NHS Assure for 2021/22 and reported last year

The Sustainable Care Working Group has a target to reduce MDI-associated emissions by 20% by 2023/24 - the GP Greener Practice Group is developing a plan to deliver this outcome. The Ochilview Practice have reduced CO₂e from inhaler emissions per 1000 patients by 23% when comparing Oct-Dec 2020 against Oct-Dec 2022.

NHS FV's GPs are involved in a range of activities to reduce environmental impacts through the GP Greener Practice Group – the group currently has in the region of 80 members representing 35 practices in Forth Valley.

In addition, to support sustainable care, the following activities are underway:

- Realistic Medicine - Develop aspirational targets and metrics to report environmental/sustainability benefits achieved from Patient Initiated Reviews (PIR) and Active Clinician Referral Triage (ACRT) opportunities.
- Realistic Prescribing - stressing the importance of patient centred medicines reviews to avoid inappropriate prescribing and where necessary to deprescribe. This has patient safety benefits and reduces carbon footprint as well as chemicals reaching the waterways and adversely impacting plant and animal life.
- Sustainable Care Pathways - Maximise outpatient appointments available via NearMe, with an aspirational target to shift 10% of all outpatient appointments to virtual by 2025/26.
- Nature-based interventions for patients – develop connections to nature and outdoor physical activity and link these to improved mental health which is relevant to all psychological therapies.
- Support Primary Care - Work will continue with the Greener GP Practices Group to identify and implement opportunities to reduce impacts e.g. energy efficiency, waste minimisation/recycling, sustainable transport etc.

10. Travel and transport

Domestic transport (not including international aviation and shipping) produced 26% of Scotland's greenhouse gas emissions in 2021. Car travel is the type of travel which contributes the most to those emissions.

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

Each NHS Scotland body must take action to reduce the carbon emissions resulting from travel associated with fleet operations. NHS FV will implement the NHS FV Electric Vehicle

(EV) Strategy/Plan to reduce the need for travel and remove all (where possible/appropriate) petrol and diesel fuelled cars from the owned and leased fleets by 2025 or earlier where possible.

The NHS FV Transport (Fleet Operations) Working Group has the following targets/metrics:

Fleet Operations - Electric Vehicles (EVs)									
Vehicle Class	EV's (2021/22)	Fossil Fuel/Hybrid (2021/22)	Total (2021/22)	Percentage EVs (2021/22)	Annual Targets - percentage of fleet that is electric compared against previous year				Total percentage reduction by 2025/26 compared with 2021/22
					2022/23	2023/24	2024/25	2025/26	
Cars	18	40	58	31%	52%	88%	100%		100%
Light Commercial Vehicles	25	50	65	38%	44%	74%	91%		91%
Heavy Goods Vehicles	0	0	0	0					No HGVs in NHS FV fleet

In 2021/22 reporting of emissions associated with fleet operations shifted from distance (miles) covered to fuel used (litres) to reflect the transition to EVs.

Fleet Operations - Fuel Usage							
	2021/22 Fuel Usage (litres)	2021/22 emissions (tCO2e)	Annual Targets - percentage reduction in fuel usage compared against previous year				Total percentage reduction by 2025/26 compared with 2021/22
			2022/23	2023/24	2024/25	2025/26	
Fleet Operations - Diesel	68,463	172	-44%	-74%	-91%		-91%
Fleet Operations - Petrol	56,716	124.4	-52%	-88%	-100%		-100%

Table 7 below sets out how many renewable powered and fossil fuel vehicles were in the NHS FV fleet at the end of March 2022 and March 2023.

Table 7: Zero emissions vehicles in the NHS FV fleet

	March 2022		March 2023		Difference in % Zero Emissions Vehicles
	Total vehicles	% Zero Emissions Vehicles (Electric)	Total vehicles	% Zero Emissions Vehicles (Electric)	
Cars	59	34	59	39	5%
Light commercial vehicles	63	24	63	55	31%
Heavy vehicles	n/a	n/a	n/a	n/a	n/a

NHS FV are working to remove all (where possible/appropriate) petrol and diesel fuelled cars from our fleet by 2025. As can be seen in the table above, good progress is being made and it is expected that the 2025 target will be achieved (assuming recent supply chain issues can be overcome).

In addition to shifting the NHS FV fleet to EVs, 'hub and spoke' arrangements for fleet electric vehicle charging infrastructure have been installed at key and rural sites. Fleet only hubs with multiple charging outlets have been established at our large sites, with single or dual charging posts installed at the smaller/more remote sites.

Work is also ongoing to:

- Use telematics to optimise fleet logistics to reduce the need for travel.
- engage with users of the NHS FV Leased Car Scheme to promote the shift to Ultra Low Emissions Vehicles (ULEVs) including EVs.
- explore options for car club memberships to reduce usage of polluting grey fleet vehicles and associated business mileage claims.

Each NHS Scotland body must also take action to reduce the carbon emissions resulting from travel associated with activities, including those associated with staff and patient travel. In the reporting period and ongoing thereafter, the following active travel initiatives will be progressed:

- Cycling facilities will be improved at five NHS Forth Valley sites using the Cycling Scotland funding that has been secured. Each site will benefit from covered cycle storage, small cycle repair kits, bike pumps and longer lockers (St Ninian's Health Centre, Camelon Health Centre, Bellsdyke Hospital, Bo'Ness Hospital, Bungalows area).
- Pedal Forth Groups will recommence following a Covid-19 hiatus at Bellsdyke Hospital.
- New ForthBike station locations installed on NHS Forth Valley sites; Camelon Health Centre and Lochview, Larbert. The ForthBikes are part of a pan Forth Valley ebike public network for anyone in the community to use. This builds on the existing Forthbike stations already in place at Falkirk Community Hospital and Forth Valley Royal Hospital and other key locations across the three local authority areas.
- NHS Forth Valley Walking Challenges will continue – these are free to enter and highly successful due to strong partnership working between the NHS FV Health Promotion Service, Forth Environment Link and Paths For All.
- "Stepping Into Summer" was a free walking challenge that took place between 9th May and 12th June 2022. This walking challenge was promoted to Forth Valley Healthy Working Lives workplaces which included NHSFV and the two HSCPs. 99 teams took part (funding was available to support 100 teams) with 467 people who walked a total of 143,361,397 steps or roughly 65,000 miles between them.
- "One Step Away" was a free walking challenge that took place between 26th September and 30th October 2022. This walking challenge was promoted to NHSFV and the two HSCPs. 51 teams took part (funding was available to support 50 teams) with 246 people who walked a total of 83,882,880 steps or approximately 39,000 miles between them.
- One NHS FV walking ambassador was recruited from this step count challenge. They will be receiving Walk Leader training in January 2023 to be able to support colleagues with walking more, more often for health and for travel.

- Three-month free Ebike loans for NHSFV staff if they use the ebike to cycle to work – 32 staff have used or are currently using one of the ebikes. These 32 members of staff have cycled 2,059 miles.
- Led ride from Livilands Resource Centre - 6 led ride sessions which resulted in 16.5 miles being cycled per person. In addition, two Bike Skills sessions took place. Six patients from Livilands took part in the led rides in October with 2 patients attending on a weekly basis since then.
- One additional member of staff has been recruited as a Cycling Ambassador, taking the number of Cycling Ambassadors to four.
- From 1st January 2023, NHS Forth Valley's Cyclescheme limit was increased from £2,000 to £2,500 with an increase in the payback period from 12 months to 18 months for all eligible staff.

There are no bikes in the NHS fleet. However, the NHS FV Transport (Active Travel) Working Group has the following targets/metrics:

- Number of staff accessing the Board's Cycle to Work Scheme
- Number of staff waiting to 'borrow' an E Bike
- Number of staff that have 'borrowed' an E Bike
- Number of staff accessing the 'Dr Bike' sessions provided at FVRH and SHCV.

11. Greenspace and biodiversity

Biodiversity

Biodiversity has declined at a rapid rate in the last 50 years. Evidence demonstrates that these trends are attributed to human activities, such as land use change, habitat degradation and fragmentation, pollution, and the impacts of climate change. The State of Nature report published in 2023 has highlighted the decline of nature across Scotland, with 11% of species now classed as threatened with extinction.

Public bodies in Scotland have a duty under the Nature Conservation (Scotland) Act 2004 ([Nature Conservation Scotland Act 2004](#)) to further the conservation of biodiversity, taking care of nature all around us. Furthermore, the Wildlife and Natural Environment (Scotland) Act 2011 ([Wildlife and Natural Environment Scotland Act 2011](#)) requires every public body to summarise their activities to meet this duty, through the production of a publicly available report.

The relevance and importance of nature and biodiversity on health and wellbeing is recognised by NHS FV. Access to thriving ecosystems is widely recognised as beneficial in terms of improving health and wellbeing and the recovery process. Wherever possible, NHS FV seeks to identify opportunities to maximise the benefits offered by local greenspace in provision of healthcare. The Board recognises that biodiversity is critically important, but it must also be acknowledged that the main purpose of NHS FV is provision of healthcare.

NHS Forth Valley has been recognised on two occasions in the recent past for efforts to retain, improve and enhance local greenspace, nature and biodiversity and connect people to nature.

1. Building with Nature Award:

NHS FV was awarded the Building with Nature Full (Excellent) Award at FVRH/Larbert Woods.

The case study associated with the award states that:

“Forth Valley Royal Hospital and Larbert Woods is a modern hospital development that represents an exemplar in the design, delivery and maintenance of high-quality green infrastructure, capturing the preventative health benefits of green infrastructure now and long into the future.”

Full details can be found at:

<https://www.buildingwithnature.org.uk/forth-valley-hospital-detail>

Further information about the environmental, social and health benefits together with the community-based activity associated with the woodland area and loch at FVRH can be found at:

<https://nhsforthvalley.com/hospitals/forth-valley-royal-hospital/about-the-hospital/woodland/>

2. National Award for Environmental Excellence:

NHS FV was awarded a Gold Level National Award for Environmental Excellence (NAEE) at FVRH/Larbert Woods.

NAEE comprises five main elements including the external environment, and the following benefits were noted at FVRH as part of the assessment:

- The grounds of the hospital are used by members of the public as walking routes and for outdoor education for local schools and nurseries.
- There are set health programmes associated with healthy and active living: Branching Out is a referral programme for local people using mental health services, the Woodland Activity Programme has been established for those with early-stage dementia and there is a Cardiac Rehab project using the woodland. Larbert Woods and Loch have been recognised and commended for the health benefits they can bring to patients and the community.
- Moorhens, Coots, Dragonflies, Frogs, Deer, Squirrels, Bats and a wide range of birds and insects can be found in/around Larbert Woods.
- The wild-flower meadows within and surrounding the woods provide an excellent opportunity for the creation and conservation of habitats that support a wide range of species.

Further information regarding the outdoor facilities at FVRH can be found at:

[NHS Forth Valley – Woodland](#)

https://forestryandland.gov.scot/images/pdf/rec_pdfs/larbert-woods-leaflet.pdf

Construction of the new Stirling Health & Care Village (SHCV) on the Stirling Community Hospital site was completed in October 2019. With an emphasis on being dementia friendly, the project architects have taken advantage of natural light, open spaces and landscape to create a general feeling of wellbeing. The design concept supports Stirling's wider ambition to be a dementia friendly city and was built around a series of public spaces and therapeutic courtyard gardens.

Key greenspace features that support nature, encourage biodiversity and connect people with nature to support wellbeing at the SHCV site include: a village green, landscaping, courtyard gardens, roof terraces and raised planters, all of which support newly planted trees and shrubbery that enhance a site that already has a relatively large area of mature woodland.

At other NHS FV sites, where the options to support nature are not as developed as those at Larbert Woods and Loch, the Board's Estates Grounds Maintenance Team are protecting, enhancing and encouraging biodiversity by:

- Creating wildflower gardens at Bellsdyke Hospital.
- Allowing hedges or bushes to grow freely during spring and summer to allow birds to nest at all community sites.
- Leaving piles of logs where appropriate to create new habitats at Falkirk Community Hospital and SHCV.
- Bird and bat boxes are/will be located where appropriate at SHCV.
- 'No Mow for May' – pilot to be carried out at green spaces on the SHCV site with grassland to be left uncut to allow wildflowers to be sown.
- Discussions ongoing with Bumblebee and Butterfly Conservation Trusts.
- Hedges to be protected for birds nesting.

Greenspace

The design and management of the NHS Scotland green estate for human and planetary health, offers an opportunity to deliver a range of mutually beneficial outcomes. These include action on climate change (both mitigation and adaptation), biodiversity, health and wellbeing for patients and staff, community resilience building and active travel.

The awards and activities outlined in the section above are a clear demonstration of NHS FV's commitment to the protection and conservation of biodiversity and greenspaces at our main acute site.

In terms of greenspace (and biodiversity) opportunities in the wider estate, NHS FV is contributing towards the NHS Assure-commissioned Greenspace Mapping Exercise for NHS Scotland. And, whilst further opportunities to enhance and support nature within the Board's portfolio are limited, work is ongoing in partnership with key stakeholders and through aligning

with the NHS FV Anchor Institution 'agenda' to understand what can be achieved. Further information can be found in Section 16 below.

Specifically at SHCV in 2022/23, the following activities are ongoing:

- Partnership working to maximise benefits to people in the wider community.
- Establishing a biodiversity baseline and putting in place plans for ongoing measuring and monitoring of change/improvement.
- Maximising assets and resources for climate and therapeutic benefit.
- Establishing a structure for stewardship and leadership in terms of greenspace and biodiversity activities.
- Exploring a feasibility study looking at greenspace and active travel opportunities.
- Maximising clinical recovery and wellbeing opportunities.
- Developing a plan for community growing garden.
- Undertaking biodiversity projects with relevant partners (e.g. Bumblebee and Butterfly Conservation Trusts).

Other greenspace and therapeutic etc garden opportunities have been explored and/or delivered at: Bellsdyke Hospital, Bo'ness Hospital, Stenhousemuir Health Centre. Further information can be found at the links below:

[NHS Forth Valley – Horticultural Therapy](#)

[NHS Forth Valley – New Garden Brings Fresh Air to Intensive Care](#)

[Larbert Woods, Forth Valley Royal Hospital, Larbert | My Landscape Institute](#)

[Falkirk HSCP – New-look for Bo'ness Hospital garden after £15,000 revamp](#)

The NHS FV Greenspace & Biodiversity Working Group has the following targets/metrics:

- Expand the NHS FV Greenspace & Biodiversity Working Group by including members of the SHCV Working Group along with Forth Valley wide key stakeholders by end of June 2023
- Ongoing delivery of the SHCV project – target completion by March 2024
- Map NHS FV greenspace by July 2023 (currently ongoing, commissioned by NHS Assure)
- Appoint a Green Health Champion (Executive Board level) by July 2023.
- Develop an NHS FV Greenspace Strategy and Biodiversity Action Plan by March 2024 (in addition to the Biodiversity Plan that is required by 31 December 2023).

12. Sustainable procurement, circular economy and waste

Earth Overshoot Day marks 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 2045.

Procurement/Circular Economy

The NHS FV Sustainable Procurement & Circular Economy Working Group has the following targets/metrics:

- Develop a supplier engagement programme to communicate sustainability commitments and expectations to suppliers by March 2024. Key suppliers to the Board have committed to support the NHS FV climate response and will submit details of savings and initiatives on an ongoing basis.
- Baseline NHSS product-based Scope 3 emission reduction plan maturity on a supplier level basis by 31st March 2024. The aim will be to have either contacted or will have a plan to contact all of our contracted product suppliers on all National NP contracts to understand and gauge their net zero ambitions.
- Relaunch the Warp-it reuse scheme by June 2023.
- Ensure that key suppliers are aware of their vulnerability to climate change disruptions and have resilience and contingency arrangements in place to minimise disruption resulting from extreme weather by 31/03/2024 in supply chain questions on Major tenders.
- Scoping the Procurement of forthcoming single use plastics regulations by reviewing the 8,000 items in NDC (National Distribution Centre) firstly to understand what products can be removed and swapped to reusable or more sustainable products via road map and systems and resources to complete by March 2024.
- Build on existing cardboard reuse initiative and roll out to 2 sites by March 2024.

Waste

NHS FV aims to reduce the amount of waste produced 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:

Table 8: NHS FV waste arisings (tonnes)

Type	2020/21 (tonnes)	2021/22 (tonnes)	2022/23 (tonnes)	Percentage change 2020/21 to 2022/23
Waste to landfill	n/a	n/a	n/a	n/a
Waste to incineration	575	1125	444	-22.7%
Recycled waste (mixed, WEEE, paper & board, cans and metal)	588	902	687	16.8%
Food waste	73	94	137	87.6%
Clinical waste (orange, yellow and red)	1366.23	691	665	-51/3%

Within the reporting period, NHS FV has adopted the waste targets in DL 38.

- Reduce domestic waste arising by a minimum of 15%, and greater where possible, compared to a financial year 2012/13 baseline.
- Ensure that no more than 5%, and less where possible, of all its domestic waste goes to landfill.
- Reduce the food waste it produces by 33% against a financial year 2015/16 baseline.
- Ensure that 70% of all domestic waste is recycled or composted.
- Reduce the volume of healthcare waste produced through measures including greater use of reusable items, improvements to waste segregation and increased recycling of recyclable materials (directly linked to the circular economy).

The NHS FV Waste Management Working Group has the following targets/metrics:

Emissions from Waste (*Data incomplete in some areas)						
Source	PBCCD data/emissions previous year (2021/22)		Annual Consumption Targets percentage reduction compared against previous year			Total percentage change by 2025/26 compared with 2021/22
	Tonnes	Emissions (tCO2e)	2023/24	2024/25	2025/26	
Clinical Waste Orange	683	186.4	3.0%	3.0%	3.0%	-9.0%
Clinical Waste Yellow	7	2	0.5%	0.5%	0.5%	-1.5%
Clinical Waste Red	1	0.8				
WEEE Mixed recycling	4	0.1				
Mixed Recycling	682	14.5	4.8%	4.8%	4.8%	14.4% increase
Organic Food & Drink Compost/AD	94	0.8	11.0%	11.0%	11.0%	-33.0%
Paper & Board Recycling	207	4.4				
Metal Cans/Metal Scrap	9	0.2				
Refuse Municipal/Commercial to Combustion	1,125	24	5.0%	5.0%	5.0%	-15.0%

Please note, reporting on the emissions from waste targets is directly aligned with the Public Bodies Climate Change Duties Reporting processes and timescales – annual performance is reported in November for the previous financial year.

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.

Within the reporting period, NHS FV has engaged as far as practicable with limited resources with the NHS Scotland EMS User Group. The Board acknowledges that there is much work to be done to embed an effective EMS across the whole organisation and steps have been taken to include this as a key risk within the NHS FV Strategic Risk Register.

Recurring funding has been approved by the Executive Leadership Team to allow for recruitment to a new post – Environmental & Sustainability Officer. The remit associated with this new post will focus mainly on the establishment of an NHS FV EMS; the Job Description has been developed and is awaiting evaluation/banding.

14. Sustainable construction

Where there is a need for new healthcare facilities, NHS FV is committed to delivering buildings and grounds that are safe, nature-rich, sustainable, resilient and accessible.

In the reporting period, NHS FV did not commission any large construction projects.

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.

In responding to the climate emergency each NHS Scotland body must align the role as an anchor institution with the drive for net-zero.

The NHS FV Sustainable Communities Working Group is aligned directly with the NHS FV Anchor Springboard, which has a robust measurement framework in place to monitor progress.

Within the reporting period, the NHS FV Sustainable Communities Working Group has initiated the following:

- Establish and maintain links with the Anchor Springboard and the Greenspace and Biodiversity Working Group to ensure an holistic approach to contributing towards the National Performance Framework (NPF).
- Review the NPF to develop an improved understanding of metrics and system dynamic modelling.
- Engage with the three Community Planning Partnerships and Sustainability Leads within the three Local Authorities in Forth Valley to develop a partnership approach to sustainable communities.

In the year ahead, the following will be taken forward to further improve community engagement:

- Undertake an Attitudes Survey (to sustainability and climate change)
- Develop a Communications Plan and develop materials to improve communications (around sustainability and climate change)

16. Anchor Institution

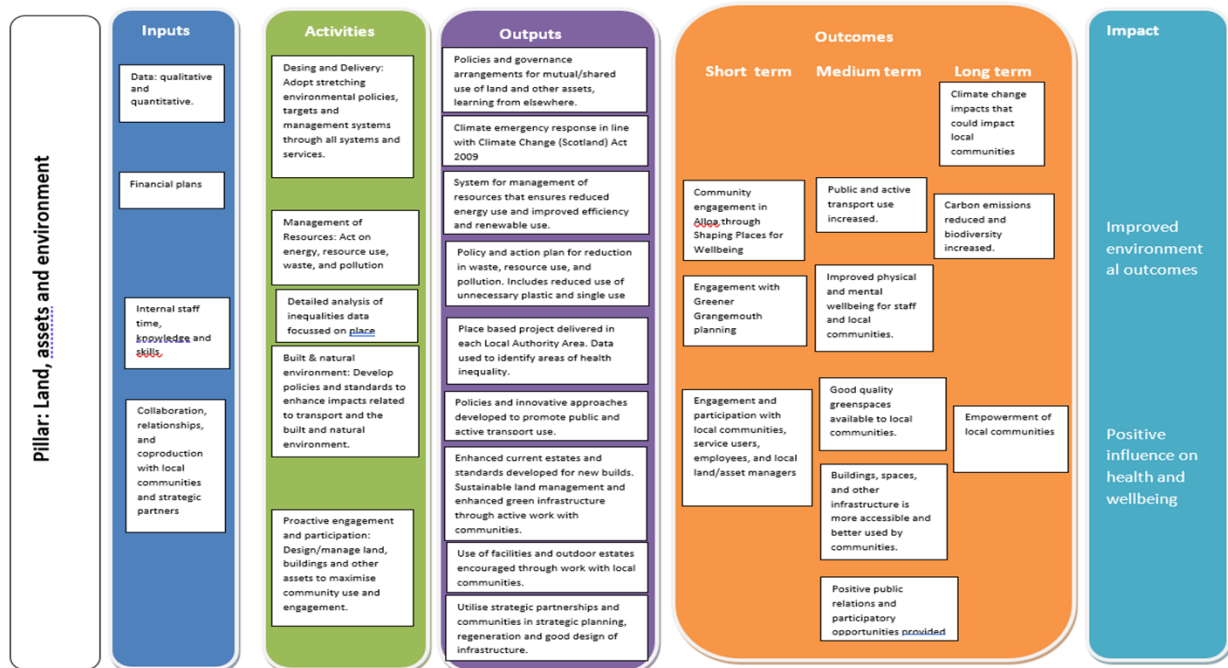
NHS FV is classed as an ‘anchor institution’, which is defined as a large organisation whose long-term sustainability is tied to the wellbeing of its population. Anchors get their name because they are ‘rooted’ in their communities, are unlikely to relocate and have significant assets and resources which can be used to influence the health and wellbeing of communities.

Our vision is to improve the health of the population of Forth Valley and decrease inequalities by using the resources of NHS FV effectively. This will initially be achieved by supporting the development of a resilient local wellbeing economy across FV where more wealth is generated, circulated and retained within local communities. The Health Board will procure more locally and for social benefit; use its buildings and space to support communities and widen access to good quality work.

The NHS Forth Valley Anchor Plan sets out our current position, our vision, our strategic priorities for the next three years and how we plan to deliver the actions. The synergies with the Board’s climate emergency response have been acknowledged within the NHS Forth Valley Anchor Strategic Plan that covers the period 2023 – 2026.

Milestones for all five anchor pillars: employment, procurement, land, assets and environment, service delivery and being an exemplar anchor have been developed. The NHS Forth Valley Anchor Springboard approach to the environmental pillar is summarised in the figure below.

Figure 3: NHS Forth Valley climate Anchor Springboard Environmental Pillar



17. Conclusion

This report is a high-level summary of the progress that has been made by NHS FV in 2022/23 in terms of shifting onto a net-zero trajectory. Further information and the Board’s Delivery Plan can be found in the NHS Forth Valley Climate Emergency & Sustainability Strategy and Action Plan 2023 – 2026 which can be accessed [here](#).

The main focus of activities in the reporting period was strategic planning. As can be seen in the sections above, a significant amount of work has been done to shift NHS FV onto a net-zero trajectory. Work is now underway to translate this into lower emissions and environmental impact reduction, and the Board is well placed to take this forward.

Significant challenges remain, however, if the NHS Board is to achieve its own targets and in doing so, contribute towards achieving NHS Scotland’s net-zero ambitions. The risk of not achieving what is required is recognised in the NHS Board’s Strategic Risk Register, and in particular the resources required to build and sustain a climate change and sustainability team commensurate with the challenge.

This NHS Board is also conscious of the significant financial pressures that are affecting NHS Scotland and must stress that budget availability is highly likely to impact on our ability to achieve targets and deliver outcomes.

This report has been compiled based on information provided by the NHS Forth Valley Climate Emergency Response & Sustainability Team. Final approval for the report was provided by the NHS Forth Valley Climate Emergency & Sustainability Board.

Approved for submission to Scottish Government:

Signature..... *A.L. Croft*

Full Name.....Amanda Croft.....

Position.....Interim chief Executive.....

Date.....29/01/24.....