# NHS Forth Valley Annual Climate Emergency and Sustainability Report 2024/25

## 1. Introduction

This is NHS Forth Valley's fourth Annual Climate Emergency and Sustainability Report, covering Financial Year 2024/25. 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 2024/25, together with an overview where appropriate of what the Board aims to deliver in 2025/26.

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.

NHS Forth Valley has acknowledged that overarching 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 and can be accessed here.

The Board submits two climate change reports to the Scottish Government annually: the statutory Public Bodies Climate Change Duties (PBCCD) submission, and this, the Climate Change & Sustainability Report which provides an update on progress against the requirements within DL (2021) 38, the Policy for NHS Scotland on the Climate Emergency and Sustainable Development.

It should be noted that this Board is monitoring performance against two emissions baselines: the original baseline that was set when the PBCCD's came into force, and a revised baseline that was established to include additional emissions sources that NHS Scotland Boards are required to monitor, manage and report following the introduction of DL (2021) 38.

The PBCCD baseline was set in 2014/15 and the DL38 baseline was set in 2022/23. For context, reference to the Board's performance against both baselines have been summarised in this update.

In the reporting year (2024/25) NHS Forth Valley employed 6,896 FTE's and provided a range of community based and acute hospital services for more than 300,000 people living in the Forth Valley area. The operational property portfolio (owned and leased) consists of 104 properties based at 55 individual sites with a floor area totalling 190,528m$^2$. Of the total NHS Forth Valley estate, 41% is owned, 1% is leased and 57% is Public/Private Partnership property.

The size of the Board's properties ranges from small properties that are less than 500m$^2$ to Forth Valley Royal Hospital which extends to approximately 96,500m$^2$. Over 50% (by number of properties) of NHS Forth Valley's properties are less than 500m$^2$. This includes medium-sized and small health centres, hospital-based buildings, stores, offices and residential accommodation.

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. Work continues to complete the construction of a new 30 bed ward, the final stage in the development of the National Treatment Centre – Forth Valley. This will create extra inpatient capacity to care for the increasing numbers of patients who require orthopaedic surgery. Along with the additional theatres and MRI scanning capacity, it will enable up to 1,500 additional operations to be carried out every year (mainly hip and knee joint replacement surgery), supporting the delivery of local and national plans.

## 2. Leadership and governance

### Governance

An NHS Forth Valley Climate Emergency and Sustainability Board has been established to oversee the Board's response to the climate emergency. This group has both a governance and a strategic role and, in line with requirements within DL (2021) 38 and is responsible for reporting progress to the Scottish Government's Climate Emergency & Sustainability Board.

The NHS Forth Valley Climate Emergency and Sustainability Board is co-chaired by the Executive Lead for Sustainability (NHS FV Director of Facilities) and the NHS Forth Valley Sustainability Champion (Non-Executive Director).

Membership includes, but is not limited to:

- Chief Executive
- Director of Facilities (Executive Lead for Sustainability)
- Non-Executive Director (Board-level Sustainability Champion)
- Director of Finance
- Director of Pharmacy
- Director of Public Health
- Medical Director
- Employee Director
- Director of Acute Services
- Director of Corporate PMO, W&C Directorate, Chief Midwife
- Representatives from the Health & Social Care Partnerships have subsequently been invited to join the Board.
- Additional members/representation may be invited to join the group and contribute as appropriate.

**Strategy/Delivery**

A Climate Emergency Response & Sustainability Team has been established which has both a strategic and an operational role in delivering 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 set up to address the requirements within DL38. The Climate Emergency Response & Sustainability Team informed development of the NHS Forth Valley Climate Emergency & Sustainability Strategy and oversees delivery of outcomes within the NHS Forth Valley Climate Emergency & Sustainability Action Plan. There are seven Working Groups:

- Energy/Facilities Management: buildings estate/facilities
- Waste Management: minimisation and recycling
- Transport: fleet operations and active transport
- Greenspace & Biodiversity
- Sustainable Care Medical Planning: aligned with existing Realistic Medicine agenda and includes Green Theatres and the Forth Valley Greener GP Practice Group
- Procurement, Supply Chain & Circular Economy
- Sustainable Communities: aligned with Anchor Institution/Community Wealth Building activity

A new Environmental Management System (EMS) Working Group is planned.

## 3. Summary of impacts

**NHS Scotland's climate emergency aim**

The overarching climate emergency outcome within DL (2021) 38 is for NHS Scotland to:

- Reduce Carbon emissions to net-zero by 2040 and decarbonise the NHS Scotland estate by 2038 (i.e. no gas heating)

This Board's climate emergency outcomes are aligned with the requirements in DL38.

## Baselines/Reporting

It should be noted that, for context, this Board is monitoring and reporting performance against two emissions baselines: the original baseline that was set when the PBCCD's came into force, and a revised baseline that was established to include additional NHS-specific emissions sources that NHS Scotland Boards are required to monitor, manage and report following the introduction of DL (2021) 38.

The PBCCD baseline was set in 2014/15 and the DL38 baseline was set in 2022/23. The Board's performance against both baselines has been summarised in this update.

## Greenhouse Gas Reduction Performance

In Table 1 below, the total emissions reported by NHS FV each year from 2020/21 to 2024/25 in tonnes of CO2 equivalent (tCO2e) is summarised.

*Table 1 – reportable emissions*

| 2040 Net-zero emissions | 2020/21 | 2021/22 | 2022/23* | 2023/24* | 2024/25* |
|---|---|---|---|---|---|
| Carbon footprint ($tCO_2e$) | 16,649 | 16,103 | 21,714 | 21,639 | 19,878 |

*** N.B. NHS-specific emissions sources added to NHS Forth Valley footprint as per NHS Scotland Policy (DL38)**

The introduction in 2022/23 of NHS-specific reportable emissions had a significant impact on the Board's carbon footprint (i.e. the emissions associated with medical gases, respiratory medicines (inhalers) etc were added to comply with requirements within DL38).

Comparing the Board's performance in 2024/25 against the original PBCCD baseline shows that between 2014/15 and 2024/25, NHS Forth Valley has reduced its carbon footprint by 10,000 tCO2e (from 25,192 tCO2e down to 15,062 tCO2e) – a 40% reduction over the past 10 years.

Comparing the Board's performance in 2024/25 against the revised DL38 baseline, that was set in 2022/23, shows an 8.54% reduction – a reduction of 1,836 tCO2e.

The remainder of this report includes a summary of the Board's performance in terms of responding to the climate emergency.

**Resource usage**

Emissions sources are typically associated with resource use and wastes arising. Table 2 below sets out details of the Board's key reportable emissions, comparing performance in 2024/25 against the previous financial year (N.B.NHS FV's current targets are associated with consumption and resource usage – not emissions).

*Table 2 - Comparison of emissions associated with usage of key resources*

| **Greenhouse gas emissions 2023-2024 & 2024-2025, tonnes CO2 equivalent (tCO2e)** | | | | **Commentary** |
|---|---|---|---|---|
| **Source** | **2023/24 emissions (tCO2e)** | **2024/25 emissions (tCO2e)** | **Percentage change – 2023/24 to 2024/25** | |
| Total Building energy | 13,775 | 13,633 | -1% | NHS FV has separate electricity and gas consumption targets – not emissions targets. See additional details in tables below regarding buildings consumption/emissions. |

| | | | | |
|---|---|---|---|---|
| | | | | N.B. Electricity consumed in buildings also includes electric vehicle charging which has increased significantly. Emissions reported do not include transmission and distribution emissions. |
| Non-medical F-gas | - | 19.9 | - | Fugitive F-gas data was not available/reported in 2023/24 |
| Medical gases | 742 | 660 | -11% | NHS FV has achieved/exceeded all existing medical gas consumption targets (Green Theatres Programme) and it is unlikely these emissions will reduce further in future years. |
| Metered dose inhaler propellant | 5,401 | 4,151 | -23% | This data is calculated/supplied by Scottish Government (SG) |
| NHS fleet travel | 211.8 | 129.4 | -38.9% | N.B. the Board's electric fleet vehicles covered 760,025 miles in 24/25 (up from 491,139 miles in 23/24). Electricity used in fleet only and other EV chargers on NHS FV sites is incorporated in the electricity consumption data figure - mileage covered/emissions associated with the NHS FV EV fleet is not reported for that reason |
| Waste | 189.9 | 209.1 | +10% | |
| Water | 50.5 | 48.3 | -4.3% | Emissions reported include wastewater treatment |
| Business travel | 512.5 | 438.4 | -14.4% | |
| **Total emissions** | **20,883** | **19,289** | **-7.6%** | |

The table below sets out in more detail usage by NHS FV of each of the key resources over the last two years (i.e. resource use, including waste arisings, associated with carbon management).

*Table 3 – resource use*

| Source | 2023/24 Use | 2024/25 Use | Percentage change – 2023/24 to 2024/25 | Commentary |
|---|---|---|---|---|
| Total Building energy (kWh) | 72,226,391 | 71,400,248 | - 1.1% | |
| ○ Building Electric (kWh) | 23,365,978 | 23,787,909 | +1.8% | Electricity consumed in buildings also includes electric vehicle charging which has increased significantly. In terms of Forth Valley Royal Hospital, the consumption figure also accounts for additional equipment e.g. MRI, CT scanner and the NTC ward. |
| ○ Building Gas (kWh) | 48,860,413 | 47,612,339 | -2.5% | |
| NHS fleet travel (Total miles travelled) | 1,126,593 | 1,135,176 | +0.7% | There is an increase in miles covered but the majority of fleet mileage in 2024/25 is by electric vehicles. |
| ○ Electric vehicles (miles travelled) | 491,139 | 760,025 | +54.7% | Reflects shift to electric fleet |
| ○ Petrol vehicles (miles travelled) | 156,991 | 27,375 | -82.5% | Reflects shift to electric fleet |
| ○ Diesel vehicles (miles travelled) | 315,203 | 213,375 | -32.7% | Reflects shift to electric fleet |
| ○ Hired vehicles (miles travelled) | 163,260 | 134,401 | -17.6% | |

| | | | | |
|---|---|---|---|---|
| Waste (tonnes) | 1969.9 | 2157.3 | +9.5% | |
| Water (cubic metres) | 180,127 | 197,496 | +9.6% | |
| Business travel (miles travelled) | 1,976,173 | 1,812,676 | -8.2% | |

**2045 Greenhouse Gas Reduction Targets**

When staff resources are available to do so, NHS FV will work with the Scottish Government and NHS Assure to support reductions to greenhouse gas emissions to net-zero by 2045 for sources of emissions over which the Board less control and influence. This will include emissions from the production and supply of the goods and material we use, patient travel and staff commuting; however, this data is not currently available.

## 4. Climate change adaptation

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 requirement to respond effectively to the climate emergency is included in the Board's Corporate Risk Register: robust monitoring arrangements are in place to ensure this risk is managed and controlled.

In terms of developing an adaptation plan, due to resourcing issues, there has been no progress in the reporting period. However, the Board has taken steps to understand the impacts of climate change and the implications for healthcare delivery.

The NHS Scotland Climate Change Risk Assessment (CCRA) Toolkit has been used by the Board to assess risks. 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 up by another workshop attended by representatives from the Board's Risk Management, Resilience and Contingency Teams – the risks initially identified were revisited and the scores etc reassessed/verified.

It was agreed following the second workshop that, whilst the NHS Scotland CCRA Tool had been useful in getting the board to this point, it was important to align this process with existing Corporate Risk Assessment and scoring arrangements. Next steps will include utilising the Board's scoring methodology and then interpreting percentage effectiveness when implementing controls to provide a more structured way of mitigating the risk in question.

Most risks identified sit within the Board's Estates/Procurement functions, but some may be jointly owned and/or could be linked with national resilience arrangements e.g. power supply. Roads and access issues would be a Local Resilience Partnership issue which would enact a multi-agency response as the NHS would not be the only service affected by this.

The Board's Business Impact Assessment has been amended to include extreme heat and extreme cold. This would then feed into the business continuity planning processes. Financial Implications have been removed from the Business Impact Assessments as it is not possible to quantify the loss of a building or service to a community.

A high-level/interim Infrastructure Failure Plan was approved, which focused on setting up a structure to manage loss of a service. Whilst this is not a site-specific plan at this stage, the aim is to develop building-specific plans for infrastructure failure.

NHS Scotland Standards for Organisational Resilience specifies minimum standards and related performance criteria for resilience within Health Boards across Scotland. Section 9 sets out a standard to enable Health Boards to begin to address the effects of climate change. This standard requires Health Boards to develop and implement a framework of actions to assure the continuity of quality healthcare services before, during and after extreme weather events, and includes six key measures (indicators) of the standard. Assurance of compliance with the standards is sought from Health Board Chief Executives by Scottish Government Health Resilience Unit on a six-monthly basis, nominally end September and end March.

To summarise, the Board has:

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

When adequate resources are available, a full Climate Change Risk Assessment using the NHS Scotland toolkit will be carried out and an Adaptation Plan developed.

## 5. Building energy

### Energy performance of buildings

In 2024/25, 13,633 tonnes of CO2 equivalent were produced using energy in NHS FV buildings. This was a decrease of 1% compared with 2023/24. Comparing the 2024/25 performance against the 2014/15 PBCCD baseline, there is a 40% reduction (23,510 tCO2e in 14/15 down to 13,633 tCO2e in 24/25).

In 2024/25, NHS FV used 71,399 MWh of energy. This was a decrease of 13.2% since 2015/16 (82,349MWh down to 71,399MWh). The tables below summarise energy related emissions and consumption.

*Table 4 – Building energy emissions*

| **Building energy emissions, 2015/16, 2023-2024 & 2024-2025, tonnes CO2 equivalent (tCO2e)** | | | | |
|---|---|---|---|---|
| | **2015/16 energy emissions** | **2023/24 energy emissions** | **2024/25 energy emissions** | **Percentage change 2015/16 to 2024/25** |
| Building fossil fuel emissions (gas) | 10,575 | 8,937 | 8,708 | -17.6% |

| | | | | |
|---|---|---|---|---|
| Grid electricity (does not include transmission and distribution emissions) | 11,562 | 4,838 | 4,925 | -57.4% |
| **Totals** | **22,137** | **13,775** | **13,633** | **-38.4%** |

*Table 5 – Building energy usage*

| **Building energy use, 2015/16, 2023-2024 & 2024-2025, MWh** | | | | |
|---|---|---|---|---|
| | **2015/16 energy use** | **2023/24 energy use** | **2024/25, energy use** | **Percentage change 2015/16 to 2024/25** |
| Building fossil fuel use (gas) | 57,334 | 48,860 | 47,612 | -16.9% |
| Grid electricity | 25,015 | 23,365 | 23,787 | -4.9%<br>N.B. Electricity consumed in buildings also includes electric vehicle charging which has increased significantly. In terms of Forth Valley Royal Hospital, the consumption figure also accounts for additional equipment e.g. MRI, CT scanner and the NTC ward. |

| | | | | |
|---|---|---|---|---|
| Renewable electricity | n/a | 102 | 376 | N.B. NHS FV was not generating energy in 2015/16. This Board's baseline is 2021/22 = 64MWh |
| **Totals*** | **82,349** | **72,225** | **71,399** | **-13.2%** |

*** Totals exclude renewable energy generated**

It is worth noting that in 2024/25 gas consumption at Forth Valley Royal Hospital (FVRH) reduced by 1,366,435 kWh's but electricity consumption increased by 503,565 kWh's (noting comments in the table above re electricity demand at FVRH), and at Clackmannanshire Community Healthcare Centre (CCHC) in 2024/25, gas consumption increased by 498,725 kWh's

In terms of the remainder of the estate (largely Primary Care sites), if energy consumption at FVRH and CCHC (two of the Board's largest sites) is excluded, gas consumption reduced by 475,938 kWh's and electricity reduced by 118,453 kWh's.

Good progress is being made decarbonising the Primary Care Estate:

- In recent years, lighting has been upgraded to LEDs at around 60 sites/buildings, 25 boiler sets have been replaced across the Primary Care estate and the steam boilers at the Stirling Health & Care Village site have been de-commissioned. Several sites also benefited from window and door replacements, increased insulation and Building Management System upgrades.

- Investment to generate renewable energy on-site from solar PVs increased in 2024 which resulted in the installation of roof mounted solar PV arrays at thirteen Primary Care sites, with a projected total annual electricity saving in the region of 320,000kWh/year. Three sites with Solar PV installed also had Battery Energy Storage Systems (BESS) added early 2025.

- With a view to shifting away from gas as the primary fuel used for heating and hot water in NHS Scotland buildings (by 2038 - NHS Policy), electric boilers have replaced gas boilers at Orchard House Health Centre and Air Source Heat Pumps (ASHP) have been installed at Westburn Medical Practice building on the Falkirk Community Hospital site. The electric boiler and ASHP installations are pathfinder projects that will help this Board (and the wider NHS) understand fully the implications and costs associated with the NHS Scotland Policy requirement to shift away from gas as the main fuel used for heating and hot water.

The Board's renewable electricity generation target is to increase on-site generation from the 2021/22 baseline of 64,410 kWh/year by 10% by 2025/26.

A total of 375,000 kWhs of electricity was generated on NHS FV sites in 2024/25.

Renewable energy generated on NHS FV sites has increased by 482% since 2021/22.

Work to decarbonise buildings will continue in 2025/26 and beyond:

- In addition to available Board Capital, funding has been secured from SG (limited in comparison with previous years), for further investment in Primary Care estate in 2025/26
    - Planned projects in 2025/26 include: Further lighting upgrades to LED, installation of solar PV/battery storage and Building Management System (BMS) upgrades and optimisation
- Arrangements are in place and SG funding has been secured in 2025/26 to understand the implications/costs of de-steaming/decarbonising Falkirk Community Hospital (FCH)
    - Optioneering work has been commissioned in 2025/26 to define the works required to implement a full District Heating Network (DHN) on the Falkirk Community Hospital site. This would de-steam the site, removing a significant maintenance risk and burden, and assist the stepped transition to further carbon savings for NHS Forth Valley. The

work will deliver steam boiler plant replacement optioneering site-wide at Falkirk Community Hospital and inform a bid to SG in 2026/27 for funding to initiate the first phase of the decarbonisation process.

- PPP/PFI Partners at CCHC and SHCV are engaged in the process of improving energy efficiency and decarbonisation
    - Lighting upgrades to LED will continue at CCHC in 2025/26
    - Discussions are ongoing with Partners and Facilities Management providers regarding installation of PV at CCHC, and additional PV at SHCV.
    - Energy management/efficiency is a standing agenda item at the Joint Utility Management Group meetings for each of these sites.
- Contractual issues are affecting the Board's ability to shift FVRH onto a net-zero trajectory
    - Significant funding was secured from the SG for investment in improving the energy performance of FVRH. A programme of LED lighting upgrades is planned – this site has 33,000 light fittings in total. An initial plan to install 1.2MW roof mounted Solar PV array at the site was opposed by Scottish Power Energy Networks (SPEN) due to fault levels in the grid infrastructure and the project was resized to 200kW.
- Discussions are ongoing with Stirling and Clacks Councils regarding inclusion of NHS FV sites (as anchor loads) in District Heating plans as part of the Regional Energy Masterplan
- Power Purchase Agreement opportunities are being scoped out
    - This could potentially result in 'private wire' renewable energy supplies to key sites (where appropriate and viable) and in particular the higher energy consuming sites e.g. FVRH. NHS FV has worked with NHS Assure to prepare a Prior Information Notice (PIN) that has been issued to the energy market. A total of 14 potential suppliers responded

to the PIN with options - an open day was held to enable suppliers to attend and discuss with Boards details of potential energy saving/renewables opportunities.

Future decarbonisation funding opportunities:

- NHS FV has been particularly successful in terms of securing SG funding for energy efficiency projects – in the region of £6M has been secured since 2019, from various SG sources and Board Capital, and invested in the Board's estate to improve energy performance.
- SG funding for energy efficiency and decarbonisation projects has more recently become significantly more challenging to access. However, there is now a commitment in the Board's 5 Year Capital Plan to provide a climate and sustainability budget annually, and SG has also contacted all NHS Boards in August 2025 regarding 'Core Allocation' and Major Projects' decarbonisation funding for NHS Scotland in 2026/27 and beyond. The opportunity to access core allocation funding is being taken forward by NHS FV, and it has been agreed with SG that decarbonisation of FCH (and potentially at other large sites such as Bellsdyke and Lochview) would be considered within the major project's allocation (for viable/phased projects).
- Other capital (e.g. from PPP/DBFM partners) will be required to plug any funding gaps and/or other opportunities explored

## 6.0 Sustainable care

The way we that care is provided influences the environmental impacts of the Board and the greenhouse gases that are emitted. NHS Scotland has three national priority areas for making care more sustainable – anaesthesia, surgery and respiratory medicine.

### 6.1 Anaesthesia and surgery

Medical gases are used as anaesthetics and for pain relief. These gases are nitrous oxide, entonox and the 'volatile gases' - desflurane, sevoflurane and isoflurane which have greenhouse gas implications.

Through improvements to anaesthetic technique and the management of medical gas delivery systems, NHS FV has reduced $tCO_2e$ emissions associated with these sources.

The data to calculate medical gas emissions is supplied by SG (to all Boards). N.B. the following tables include some revised data from SG that has changed from what was provided in previous years.

Details of NHS FV's medical gas emissions is set out in the tables below:

*Table 6 – Medical gas emissions*

| **Nitrous oxide and entonox emissions, 2018/19, 2023-2024 & 2024-2025, tonnes CO2 equivalent (tCO2e)** | | | | |
|---|---|---|---|---|
| **Source** | **2018/19 (baseline year)** | **2023/24** | **2024/25** | **Percentage change 2018/19 to 2024/25** |
| Piped nitrous oxide | 219 | 4 | 0 | -100% |
| Portable nitrous oxide | 35 | 41 | 36 | +2.8% |
| Piped entonox | 760 | 538 | 511 | -32.7% |
| Portable entonox | 53 | 41 | 49 | -7.5% |
| **Total** | 1067 | 624 | 596 | -44.1% |

Volatile medical gas emissions for NHS FV is based on revised data provided by SG in 2024/25, this is summarised in Table 7 below:

*Table 7 – Volatile gas emissions*

| Volatile medical gas emissions, 2018/19, 2023-2024 & 2024-2025, tonnes CO2 equivalent (tCO2e) | | | | |
|---|---|---|---|---|
| | **2018/19 (baseline year)** | **2023/24** | **2024/25** | **Percentage change 2018/19 to 2024/25** |
| Desflurane | 115 | 0 | 0 | -100% |
| Isoflurane | 2 | 0 | 0 | -100% |
| Sevoflurane | 54 | 46 | 49 | -9.2% |
| **Total** | 168 | 46 | 49 | -70% |

**National Green Theatres Programme**

A National Green Theatres Programme was officially launched in 2023 to help reduce the carbon footprint of Theatres across NHS Scotland and enable more environmentally sustainable care by:

- Working with clinicians and professionals to develop actions that reduce carbon emissions, waste and resource use.
- Supporting Boards to implement, measure and report on these improvements.

NHS Forth Valley has participated for several years in delivery of initiatives that fall under the banner of the National Green Theatres Programme (NGTP). This Board has performed particularly well in several key areas which have been summarised below.

In the reporting period, NHS Forth Valley has maintained delivery of NGTP projects and initiatives, including:

- Desflurane – this has been removed from all NHS FV stock lists and has not been used by the Board for more than three years.
- Oral Paracetamol vs intravenous – NHS FV is looking to identify opportunities to reduce associated emissions.
- Anaesthetic Gas Scavenging System (AGSS) – reviewing options to switch the system off out of hours.
- Theatres ventilation system – reviewing options to adjust settings, run-times and set-points to deliver energy savings.
- Nitrous oxide – The manifold for piped nitrous has been decommissioned and usage of portable nitrous oxide is being closely monitored and managed.
- Entonox – usage is being closely monitored and managed to identify efficiencies.
- Surgical fluid system – further consideration required regarding options to roll-out following pilot project.
- Waste segregation/minimisation – initiatives are underway and ongoing. A primary area of focus now being non-infectious healthcare plastics and reducing the number of single-use items currently used – further details in Section 9 under waste minimisation
- Seeking opportunities to collaborate with NHS FV Pharmacy – the carbon footprint of medicines is significant, and work is underway at national level to understand more fully the environmental impacts associated with medicines by 2028
- The ‘Be Glove Aware’ campaign has been promoted with a view to reducing unnecessary glove use

## 6.2 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, it is possible to improve patient care and reduce emissions. There are also dry powder inhalers which can be used where clinically appropriate.

N.B. The information in Table 8 is based on revised data provided by SG in August 2025.

*Table 8 – Inhaler propellant emissions*

| **Inhaler propellant emissions, 2018/19, 2023-2024 & 2024-2025, tonnes CO2 equivalent (tCO2e)** | | | | |
|---|---|---|---|---|
| **Source** | **2018/19 (baseline year)** | **2023/24** | **2024/25** | **Percentage change 2018/19 to 2024/25** |
| Primary care | 3,597 | 4,629 | 4,068 | +13% |
| Secondary care | 91 | 112 | 83 | -8.7% |
| **Total** | 3,688 | 4,741 | 4,151 | +12.5% |

NHS Forth Valley is acutely aware of the need to address the emissions associated with respiratory medicine. The following activities have been delivered:

- An education session with GPs took place to discuss the greenhouse gas impact of inhalers, and thereafter representatives from pharmacy team and GP practices met and developed a plan to reach SG climate targets related to inhalers over the next 5 years.
- Information leaflets and SABA use slide calculators have been issued to all GP practices in Forth Valley.

In 25/26, to improve patient care and reduce emissions from inhalers, the Board has made changes including:

- An alert has been added by pharmacy team to EMIS to remind GPs to consider switching generic salbutamol and/or ventolin to Salamol.
- Practices are being encouraged to reduce SABA overuse by focusing on the percentage of patients being prescribed more than 6 salbutamol inhalers in 1 year.

To raise awareness with staff and patients, including primary care, NHS FV has ensured:

- A Switchscript reminder in EMIS prompts prescribers to change inhaler when safe to do so.
- Nursing teams have had educational sessions and been encouraged to discuss appropriate use of inhalers and the risks of SABA overuse with patients

## 6.3 Other sustainable care action

Work will continue in 2025/26 to support delivery of NGTP projects and, in parallel, the NHS FV Sustainable Care Working Group will identify/implement additional opportunities. Numerous opportunities have been identified for cost and carbon savings. Recognising resourcing capacity is limited, it is proposed that there is a focus on the following five projects:

*Table 9 – Other sustainable care opportunities*

| Name | Project Summary | Target timescale for completion |
|---|---|---|
| **Non-sterile gloves** | In the first quarter of 2025 a total of 3,115,110 pairs of non-sterile gloves were used in FVRH costing £64,114 pounds. In quarter two 3,506,130 pairs were used at a cost of £71,930. Extrapolation suggests that this equates to 13 million pairs per year costing £272,000 per year. Evidence shows that up to 60% of usage could be avoided. | 2027-28 |
| **Lean surgical trays** | Theatres staff in FVRH have reduced the number of knee replacement trays used/procedure in theatre from 4 to 2.5 and reduced the number of instruments per tray. Assuming a figure of 588 knee replacements per year these savings are significant. NGTP have flagged NHS FV as an example in this regard to other health boards in Scotland.<br><br>The plan is to roll this approach out to hip replacements, trauma trays, Cholecystectomy trays, Gynec and ENT trays | 2026-27 |
| **Compressed air storage** | Current bulk gas storage capacity is significantly oversized, leading to substantial losses through natural boil-off and leakage. At the time of writing, the replacement of existing tanks would have an indicative payback period of just over three years.<br><br>The Sustainable Care Working Group and Medical Gases Committee will revisit the 2013 Synthetic Air Plant Modifications Feasibility Report for Forth Valley Royal Hospital. | 2026-27 |
| **Patient labels** | Patient Sticker labels Rationalisation: Every patient has a 21-sticker sheet in OPD. A recent audit has shown that on average only 2 stickers are used. Moving to three-sticker sheets, saves 2.5 million stickers annually (based on annual outpatient figures) and 144,000 sheets that the stickers are printed on.<br><br>If this rationalisation approach is expanded to other clinical areas e.g. day surgery and wards etc there is potential for further substantial savings. | 2026-27 |

| | | |
|---|---|---|
| **Expand HVAC shutdown out of hours** | NGTP data shows that if theatres in Scotland shut down HVAC outside operating hours (where appropriate to do so) savings of £7.7 million is estimated. In FVRH currently there is a setback of 30% out of hours. Extrapolation suggests potential additional savings of 30% could be achieved - however, it must be noted that contractual and other operational matters could impact progress. | 2026 |

## 7. Travel and transport

Domestic transport (not including international aviation and shipping) produced 28.3% of Scotland's greenhouse gas emissions in 2022. 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.

**Fleet and Business Travel**

NHS FV has successfully implemented the Electric Vehicle Strategy that was adopted by the Board in 2020.

The tables below present the key information regarding fleet operations and business travel.

*Table 10 – Fleet and business travel emissions*

| Greenhouse gas emissions, tCO2e | 2023/24 | 2024/25 | Percentage change | Comments |
|---|---|---|---|---|
| Fleet emissions (petrol, diesel and hired vehicles) | 211.8 | 129.4 | -38.9% | N.B. the Board's electric fleet vehicles covered 760,025 miles in 24/25 (up from 491,139 miles in 23/24). Electricity used in fleet only and other EV chargers on NHS FV sites is incorporated in the electricity consumption data figure - |

| | | | | |
|---|---|---|---|---|
| | | | | mileage covered/emissions associated with the NHS FV EV fleet is not reported for that reason |
| Business Travel | 512.5 | 438.4 | -14.4% | |

The following table sets out the number renewable powered (electric) and fossil fuel vehicles were in NHS FV's fleet at the end of March 2024 and March 2025:

*Table 11 – EVs in fleet*

| Number of EV's in fleet | March 2024 | | March 2025 | |
|---|---|---|---|---|
| | **Total vehicles** | **% Zero tailpipe emissions vehicles** | **Total vehicles** | **% Zero tailpipe emissions vehicles** |
| Cars | 58 | 89.65% | 58 | 94.28% |
| Light commercial vehicles | 65 | 95.38% | 65 | 100% |

The Board's core fleet will be 100% electric in 2025 and the Board's electric vehicle charging infrastructure installation programme is complete. This Board's performance in terms of switching to an all-electric fleet is significantly ahead of the many other NHS Scotland Boards - The efforts of the Fleet Management Team have been acknowledged by SG and congratulations received from Scottish Ministers.

Table 12 clearly shows, in terms of mileage covered, the extent of the shift away from fossil fuelled vehicles to an all-electric fleet; this transition has been complex and challenging.

*Table 12 – Miles travelled by fleet vehicles*

| **Fleet vehicles distance travelled, (miles)** | **2020/21** | **2022/23** | **2023/24** | **2024/25** | **Percentage change 2020/21 to 2024/25** |
|---|---|---|---|---|---|
| Electric | 19,549 | 226,062 | 491,139 | 760,025 | **+3,787%** |
| Petrol | 194,964 | 173,889 | 156,991 | 27,375 | **-85%** |
| Diesel | 1,096,446 | 459,615 | 315,203 | 213,375 | **-80%** |
| Hired | 215,012 | 375,895 | 162,260 | 134,401 | **-37.5%** |
| **Total** | **1,525,971** | **1,235,461** | **1,125,593** | **1,135,175** | **-25%** |

**Bicycles and eBikes**

The 20x ebikes purchased by the Board and made available for NHS staff use in 2020, together with an additional 20x ebikes purchased and used by NHS FV patients involved in the oncology 'pre-habilitation' pilot project, are still available. In 2024/25 there were 40x NHS FV eBikes available for use by patients and staff.

**Reducing the need to travel, active travel, public and community transport**

The table below summarises other travel related activity in the reporting period and in 2025/26.

*Table 13 - other travel related activity*

| | |
|---|---|
| What did we do in 2024/25 to reduce the need to travel? | Continued to promote the use of Teams |
| What did we do in 2024/25 to improve active travel? | • Provided access to staff E Bike 'free trail scheme'<br>• Provided support to cyclists with free Dr Bike maintenance sessions at FVRH and SHCV<br>• Continued to provide staff with access to a 'Cycle to Work Scheme' |
| What did we do in 2024/25 to improve public and community transport links to NHS sites and services? | No action taken |
| What are we going to do in 2025/26 to reduce the need to travel? | No planned action(s) at the time of reporting (Oct 25) |
| What are we going to do in 2025/26 to improve active travel? | Expansion of Dr Bike sessions to CCHC and FCH |

| | |
|---|---|
| What are we going to do in 2025/26 to improve public and community transport links to NHS sites and services? | In accordance with the new obligations place upon the Board, NHS Forth Valley will be asking Community Transport Operators if they wish to undertake a range of patient related services such as Renal Transport, discharge to home etc. |

## 8. Greenspace and biodiversity

The design and management of the NHS Scotland green estate to protect and enhance biodiversity, and 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.

In the reporting period, NHS FV has:

- Successfully piloted the 'No Mow May' approach at key sites and this is being rolled out at a range of other sites where the number of grass cuts per year is being managed to support biodiversity (where appropriate)
- Developed a small garden area at Stenhousemuir HC using Community Benefits funding from a large energy efficiency project that was commissioned, and
- funding secured in 2024/25 was used to provide planters (with soil and plants) at a range of Primary Care sites – the planters are now in place at each site and will be maintained by volunteers at each site (sites that have benefited are: Orchard House, St.Ninians, Bannockburn, Camelon, Tullibody, CCHC, FCH Admin, Airth, Cowie, Fallin, Balfron, Killearn, Bo'Ness, Drymen, Slamannan, Dunblane and Clackmannan)

Following the learning achieved through the partnership working across the SHCV greenspace project (reported in the 2023/24 submission), a wider multi-disciplinary working group has been established to plan and/or co-ordinate greenspace and biodiversity action across NHS FV. The focus for the Board in 2025/26 is the Falkirk Community Hospital site which Offers several greenspace and biodiversity as well as health and wellbeing opportunities.

## 9. Sustainable procurement, circular economy and waste

**Procurement and Circular Economy**

NHS Forth Valley aims to reduce the impact that 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. All of the Board's procurement contracting strategies consider the implications of sustainability in relation to the procurement under consideration. Where appropriate, tenders had Climate and Sustainability as well as Clinical Waste handling matters embedded to ensure that the awarded supplier was required to comply with these conditions.

Much of what needs to be achieved in terms of sustainable procurement sits at the National Procurement level and there is a significant amount of work ongoing. Areas of focus include:

- Addressing the significant carbon footprint associated with the manufacture and supply of medicines, chemicals, equipment and other materials used by the NHS
- Engaging NHS Scotland's extensive supply chain in the drive for net-zero (NHS Scotland has around 8,000 suppliers)
- Reviewing the forthcoming single use plastics regulations by reviewing the 8,000 items in NDC (National Distribution Centre) to understand what products can be removed and swapped to reusable or more sustainable products
- Developing and piloting a revised national procurement system that incorporates the NHS Scotland net-zero ambitions. The system includes information for each supplier, where the annual spend is greater than £1M, which can be filtered down to individual board level, demonstrating how these suppliers aim to deliver their own net-zero plans between 2025 to 2035.

At the local NHS FV procurement level (NHS FV has 184 local suppliers), the following initiatives are underway:

- Warpit Project Team formed to re-introduce the system within NHS Forth Valley to facilitate reuse of furniture and equipment.
- Community Benefits built into local Tenders. Also reporting any delivered Benefits on local and national contracts.
- CSD Transport/Logistics review underway – this will reduce miles travelled/fuel used and CO2 emissions. such as consolidated deliveries to its Central Warehouse in Stirling. This is for various commodities e.g. Orthopaedics and Theatres consumables, Stationery & Paper and walking aids.
- Progress the National Telematics system for fleet logistics to understand supplier options and costings. A Business case will be submitted when all the information is available.
- Review and understand local options associated with the new national HPA/PPA Category for Energy (heat and power purchase agreements) – this provides Boards with the option to purchase renewable energy from local wind and solar etc arrays/farms.
- The Board also has in place a process to facilitate the recycling/reuse of Walking Aids to reduce costs for purchase of new equipment and shift away from single use followed by disposal.
- In addition, procurement activity has KPIs that reduce $CO_2$ by putting best practice initiatives in place.

**Waste minimisation**

Operational waste management challenges and efforts to minimise risk and ensure compliance continue to impact this Working Group's ability to focus on waste minimisation.

- A new campaign – Think before You Throw - has recently been launched (providing guidance to ensure metal and battery waste is disposed of in the correct waste streams), and
- A ground-breaking pilot project is underway at FVRH to identify recycling solutions for non-contaminated plastics from Theatres:

- Working with the Serco, the Board's FM provider at FVRH and their main waste contractor, Biffa, it was suggested that a range of plastic waste generated in the preparation phase of operations/procedures carried out by the Theatre Team at FVRH could not be recycled. Typically, the waste arising was associated with the packaging used to house medical equipment and this could not be recycled by Biffa due to the presence of the 'sealing' strip around the edge of the plastic tray. The plastic wastes arising in Theatres was being processed at a Materials Recovery Facility (MRF) and then disposed of via the Refuse-derived fuel (RDF) stream.
- The Board's WMO initiated discussions with an alternative waste management company – Cireco. Several site visits took place with members of the Cireco Team and representatives from the Board's Theatre's Team in attendance to discuss options, and a range of plastics, including the trays, were taken by the Cireco team for analysis. Cireco advised that they would be able to recycle all the plastic waste, and a pilot was set up to help understand the recycling rates and costs etc. Since the pilot began in mid-July 5,100kgs (an average of 300kgs per week) of mixed plastic waste have been collected and processed by Cireco.
- Cireco have advised that all of the plastics presented to them have been recycled. To date, the outcomes of the pilot have been hugely positive in terms of expanding the range of plastics that can be recycled in NHS Scotland Theatre settings. A full cost analysis will be undertaken in the early part of 2026 to understand the cost implications to NHS Forth Valley. It must also be noted that, due to the nature of the PFI arrangements at FVRH there may be contractual implications that need to be resolved to formally shift away from Biffa to Cireco as the waste management provider for the Theatre's waste plastics.
- It will be around six months before the data from this pilot project is available, thereafter discussions will continue with NHS Assure and the National Green Theatres Programme with a view to replicating this approach across NHS Scotland (where appropriate).

**Waste management**

Table 14 below sets out information on the waste produced by NHS FV for the last four years:

*Table 14 – Waste arisings summary*

| Type | 2021/22 (tonnes) | 2022/23 (tonnes) | 2023/24 (tonnes) | 2024/25 (tonnes) | Percentage change – 2021/22 to 2024/25 |
|---|---|---|---|---|---|
| Waste to landfill | 1,125.01[1] | 444.18 | 353.6 | 54.4 | Comparison based on 22/23: **-16.5%** |
| Waste to incineration | | | | 316.5 | |
| Recycled waste | 897.03 | 808.63 | 854.6 | 892[2] | **-0.6%** |
| Food waste | 94.11 | 137.5 | 158.8 | 154.5 | **+64.16%[3]** |
| Clinical waste[4] | 799.7 | 787.76 | 594 | 731.2 | **-8.6%** |

Targets have been set to reduce the amount of waste produced – The remaining tables in this report provide a summary of the Board's performance against those targets:

*Waste targets summary tables*

| **Reduce domestic waste by a minimum of 15%, and greater where possible compared to 2012/2013 – by 2025** | |
|---|---|
| Target – reduce domestic waste by | 91.77 (tonnes) |

[1] Caution advised, low confidence in this data. Unclear if bins were weighed when emptied or if industry standards were applied to bin weights.
[2] Combined weights of Paper/board, metals and DMR
[3] Food waste currently not being 'dewatered'. New dewatering equipment is planned to be fitted at FVRH, no confirmed date at this time.
[4] Orange, Red and Yellow streams only

| | |
|---|---|
| Performance – domestic waste reduced by | 240.87 (tonnes) |
| Outcome | ACHIEVED[5] |
| Further reduction required | [INSERT NUMBER] (tonnes) |

| **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 more than 18.6 (tonnes) |
| Performance – ~~waste sent to landfill reduced by~~ | 54.4 (tonnes) |
| Outcome | NOT ACHIEVED YET |
| Further reduction required | 35.8 (tonnes) |

| **Reduce the food waste produced by 33% compared to 2015/16 – by 2025** | |
|---|---|
| Target – reduce food waste by | 31.1[6] (tonnes) |
| Performance – food waste reduced by | 0 (tonnes)[7] |

[5] The 2012/2013 figure for domestic waste (not in DMR) is 611.77t and should be treated with some caution. There is a higher level of confidence on the data for 22/23. The target of 15% based on the 22/23 figures is 66.63t; which has been met in 24/25.
[6] Based on 21/22 figures.
[7] Food waste has increased, on 21/22 figures, by 60.38t. As noted, food waste is not currently being dewatered.

| | |
|---|---|
| Outcome | NOT ACHIEVED YET |
| Further reduction required | 31.1 (tonnes) |

| **Ensure that 70% of all domestic waste is recycled or composted – by 2025** | |
|---|---|
| Target – recycle or compost | 884 (tonnes) |
| Performance – recycled or composted | 892 (tonnes) |
| Outcome | ACHIEVED |
| Further increase required | Nil |

Waste-related activities in 2024/25:

- Promote correct segregation of waste via 'toolbox' talks. Several sessions have been carried out by the Boards Clinical Waste Auditor.
- Work in close collaboration with large projects such as the partial decant of the Board HQ, the removal and fit out of new pharmacy robots and bed replacement programme to ensure maximum recovery of recyclable streams away from the general waste streams.

Waste-related activities planned for 2025/26:

- Undertake procurement exercise for waste contractors for all waste streams (less clinical wate) for all sites (not including Forth Valley Royal). Contracts will set a range of KPI's including the requirement to weigh all bins at point of collection.
- New waste contractors will be required to carry out waste audits and support the Board with waste reduction behaviour change projects/initiatives.

## 10. 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 environmental goals through consistent review, evaluation, and improvement of environmental performance.

Implementation of an EMS is a key component that will underpin the Board's climate emergency response. It will, however, be challenging to implement across all areas of healthcare delivery and will have staff and financial resource implications.

It was hoped that the Board's core sustainability team would increase from 3 to 5 FTE's, however, this was not possible in the current financial climate. Consequently, it has not been possible to progress implementation of an EMS due to limited staff resources. Members of the core sustainability team have attended NHS Assure-led training sessions and two of the team achieved the Auditor qualification - it is hoped that implementation will progress in 2025/26.

## 11. Sustainable construction

No large construction projects were commissioned by the Board in the reporting period.

## 12. Sustainable communities

The NHS touches every community in Scotland and has a responsibility to use its 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 communities' health in every way possible.

There are five ways in which NHS organisations act as anchor institutions:

- Workforce – employ more local people and provide fair stable work
- Spend – buy more goods and services locally and develop the local supply chains to contribute to local economic growth
- Land and assets – use our land and buildings for community benefit
- Environmental sustainability – minimise our impact on the environment
- Partnerships – work with partners to develop good practice and anchors approaches

Further information can be found in the Board's Anchor Plan 2023 – 2026 - here.

In response to the climate emergency NHS FV has aligned its role as an anchor institution with the drive for net-zero. A wide range of actions are being driven forward by the NHS FV Anchor Springboard. The Sustainable Communities Working Group feeds into the Anchor Springboard and has the following activities/initiatives ongoing:

- A framework has been developed using a logic model to fully understand the requirements around establishing a collaborative approach to delivery of this area of work (with a particular focus on linking the Sustainable Communities activity with development of greenspace and Public Health).
- An excellent example of the collaborative approach required to successfully deliver shared outcomes is the Greenspace development project at SHCV. Standout learning points include - the challenges and opportunities for inclusion of anchor

organisation and community development approaches and aligning NHS FV finance and procurement processes to support community and third sector inclusion.

- The Local Policy innovation partnership (LPip) - rebranded as FortH2O - secured £5 million funding for research into water-related opportunities in the Forth river basin area, with NHS FV being one of the key partners. The programme of work is being delivered over the next three years. NHS FVB will maximise opportunities to bid for funding/research opportunities for local projects.
- A Public Health Action Team, with a focus on sustainability, has been set up to develop a framework for climate emergency adaptation. The Public Health Directorate priorities/workplan will be communicated across NHS FV

## 13. Conclusion

NHS FV is making good progress in many areas in terms of decarbonisation and its response to the climate emergency. Current gaps are EMS and Adaptation: which NHS FV is unable to progress at pace within current resources (staff).

The position regarding funding for decarbonisation projects has improved: there is now commitment within the Board's 5-year Capital Plan and SG is liaising with Board's regarding an annual core allocation from 2026/27 and beyond and a separate funding allocation for major (decarbonisation) projects.

NHS FV's fleet will be all electric in 2025 - the efforts of the Fleet Operations Team in delivering this challenging outcome should be acknowledged.

This Board has supported the National Green Theatres Programme (NGTP) since its inception. NGTP has 14 workstreams currently being implemented across NHS Scotland, and this Board has fulfilled 13 of these. The focus of the Sustainable Care Working Group has now shifted to projects that can be delivered outwith NGTP. A range of opportunities have been identified, and additional resource (staff time and spend-to-save funding) is being sought to develop and deliver these initiatives.

The Waste Working Group's ability to focus on waste minimisation and recycling etc is still affected by ongoing operational waste management challenges, managing risk and ensuring compliance. However, the theatres plastics recycling pilot project that is underway could provide a learning opportunity that may bring benefits in many areas across NHS Scotland.

This Board is content with its climate emergency response in 2025/26 and can report positive progress to the Scottish Government.