# Annual Sustainability Development Report 2022-23

## Background

The Greener NHS campaign is a national programme with statutory targets aimed at achieving Net-Zero (NZ) carbon dioxide ($CO_2$ or $CO_2$ equivalent) emissions from NHS activities. This involves developing and following an ambitious route map to reach NZ by 2040[1].

To support this, the Royal Devon University Healthcare NHS Foundation Trust (RDUH) has developed a Green Plan, covering the period 2022-2025. This plan was approved by the Board of Directors in January 2022 and sets out how the Trust plans to go about achieving their long-term sustainability goals and 'Net Zero' targets. The Green Plan is a supporting pillar of the Trust's corporate strategy, being delivered as part of the "Collaboration and Partnerships" objective with the Deputy Chief Executive as Senior Responsible Officer (SRO) and led by the Director of Business, Innovation and Sustainability. The Green Plan will help guide the design and implementation of our future service sustainability and will act as a strong foundation to ensure that our environmental ambitions are embedded into everything we do.

The plan sets out the objectives, approach, key messages and outputs required to support delivery alongside a timeline and is due to be revised next in 2025. Delivery is managed by a core sustainability team who support Trust operational leads. A Sustainability Steering Group, chaired by the executive SRO, meets every two months and issues a progress report to the Board of Directors every six months.

Sustainability ideas may arise from the core team or the operational departments. Through strong teamwork and a focus on best practice project management those ideas are turned into value creating initiatives which complement the plan.

This sustainability report covers the majority of the information that will be contained in the Annual Report and therefore details progress against the Green Plan, and at a minimum, includes the mandatory reporting requirements as required by NHSE/I's Greener NHS team. The scope of this report is to capture performance over the last year of the Trust activities and historic data pre-merger where available as well as point towards future priorities.

[1] And by 2045 net zero for the NHS footprint including all emissions influenced but not directly controlled by the service.

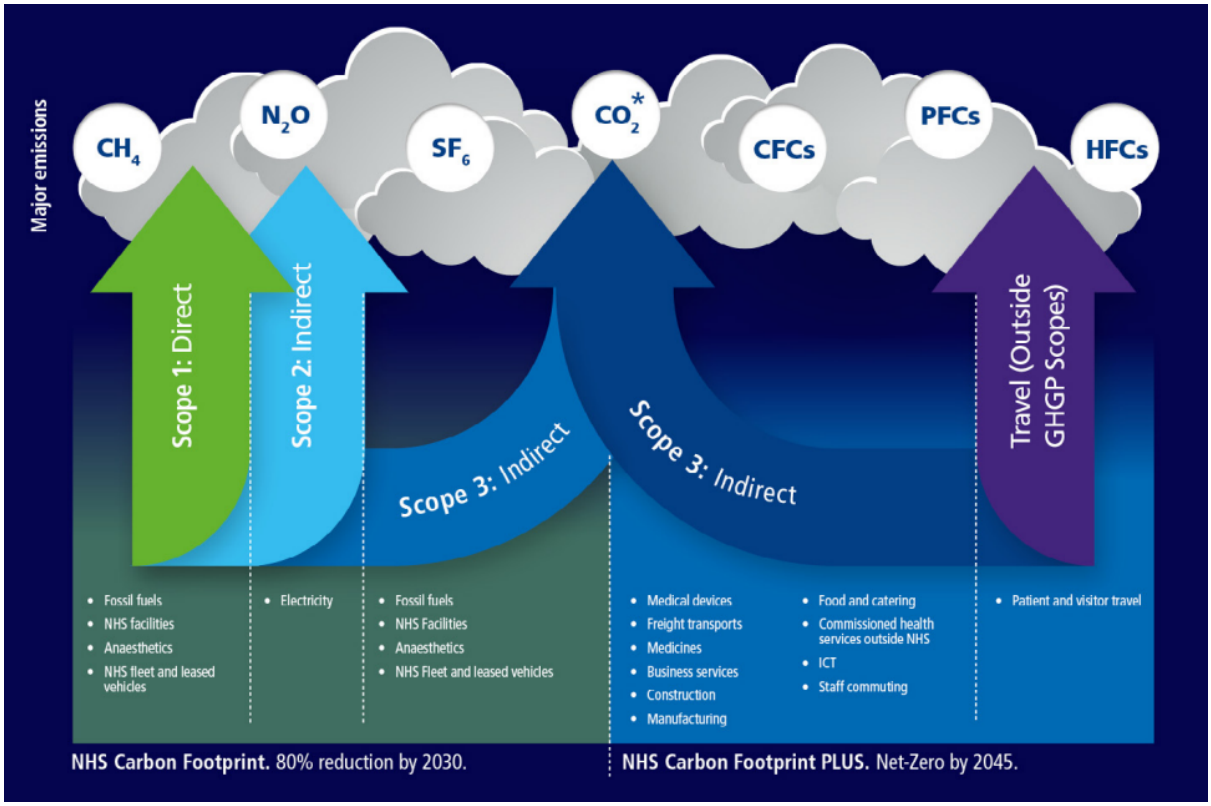
## Our Sustainability Targets:

In our Green Plan there are three overarching strategic targets with supporting objectives:

1. **Embody Sustainable Healthcare**
   Prioritising sustainability objectives in order to make sustainable healthcare a 'business as usual' activity.

2. **Staff Engagement**
   Our ability to deliver on this ambitious Green Plan will be dependent upon all parts of the organisation pulling together as one team. Whilst the Sustainability Steering group will have co-ordination, measurement and assurance roles, it will be the individual actions of our thousands of staff members, and the cumulative effect of these, that will make the plan impactful.

3. **Carbon Reduction**
   The table below shows the elements that make up NHS carbon emissions – the carbon "footprint".




"NHS Carbon Footprint" includes carbon emissions that are directly produced through the use of building energy, water, waste processes, anaesthetics, inhalers and business travel.

"The NHS Footprint PLUS" includes the emissions associated with products and services that we purchase."

In line with the NHS commitment to become Net Zero $CO_2$, we are committed to the following targets:

| Objective |
|---|
| **Carbon Footprint**<br>• Reduced 80% by 2030,<br>• Net-Zero $CO_2$ by 2040<br>• All above are against the 1990 baseline |
| **Carbon Footprint Plus**<br>• Net-Zero $CO_2$ by 2045 |
| **Establish Methods to:**<br>• Quantify, measure, monitor and reduce $CO_2$ emissions |

The Trust's estimated carbon footprint is 26,439 tonnes $CO_2$ equivalent. Adding personal travel, medicines, medical equipment and supply chain the broader measure of the Trust's NHS Carbon Footprint Plus is 151,711 tonnes of CO2 equivalent. See below.

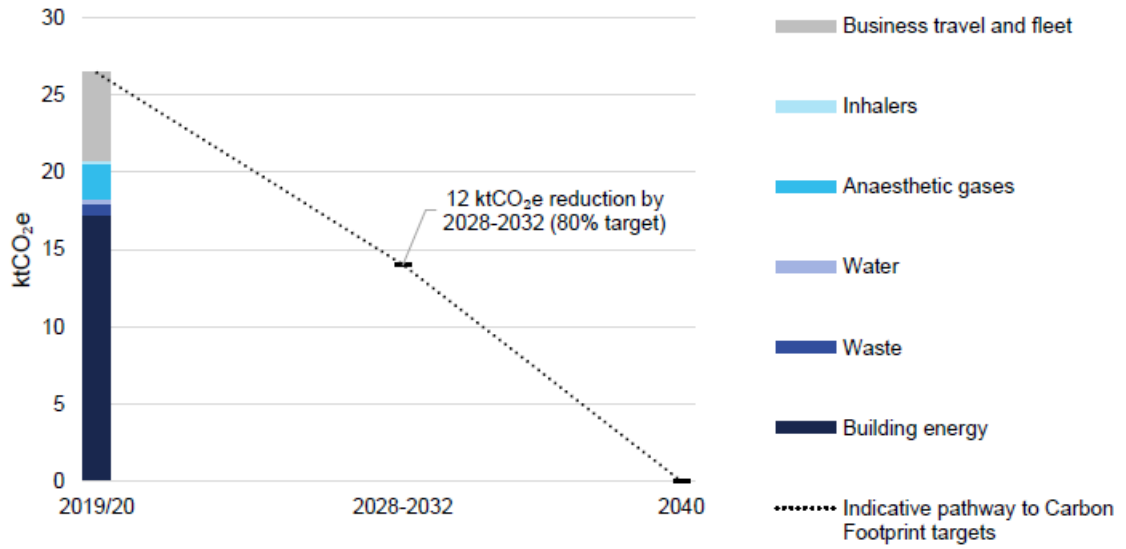
| | | |
|---|---|---|
| **NHS Carbon Footprint** | **26,439** | **$tCO_2e$** |
| *Building energy* | *17,190* | $tCO_2e$ |
| *Waste* | *735* | $tCO_2e$ |
| *Water* | *302* | $tCO_2e$ |
| *Anaesthetic gases* | *2,373* | $tCO_2e$ |
| *Inhalers* | *113* | $tCO_2e$ |
| *Business travel and fleet* | *5,726* | $tCO_2e$ |
| **Personal travel** | **23,090** | **$tCO_2e$** |
| *Staff commuting* | *8,549* | $tCO_2e$ |
| *Patient travel* | *9,942* | $tCO_2e$ |
| *Visitor travel* | *4,599* | $tCO_2e$ |
| **Medicines, medical equipment and other supply chain** | **100,564** | **$tCO_2e$** |
| *Medicines and chemicals* | *34,245* | $tCO_2e$ |
| *Medical equipment* | *20,527* | $tCO_2e$ |
| *Non-medical equipment* | *11,004* | $tCO_2e$ |
| *Other supply chain* | *34,788* | $tCO_2e$ |
| **Commissioned health services outside NHS** | **1,618** | **$tCO_2e$** |
| **NHS Carbon Footprint Plus** | **151,711** | **$tCO_2e$** |

Source: NHS England

Applying average targeted reductions on an annual basis to the 2019/20 baseline (the period from which NHS England defined measuring the net zero trajectories in their reports) the Trust would need to deliver a 12,000 tonnes reduction in its Footprint and 111,000 tonnes reduction in its Footprint Plus to achieve an 80% reduction by 2028-32 and 2036-39 respectively. See below.

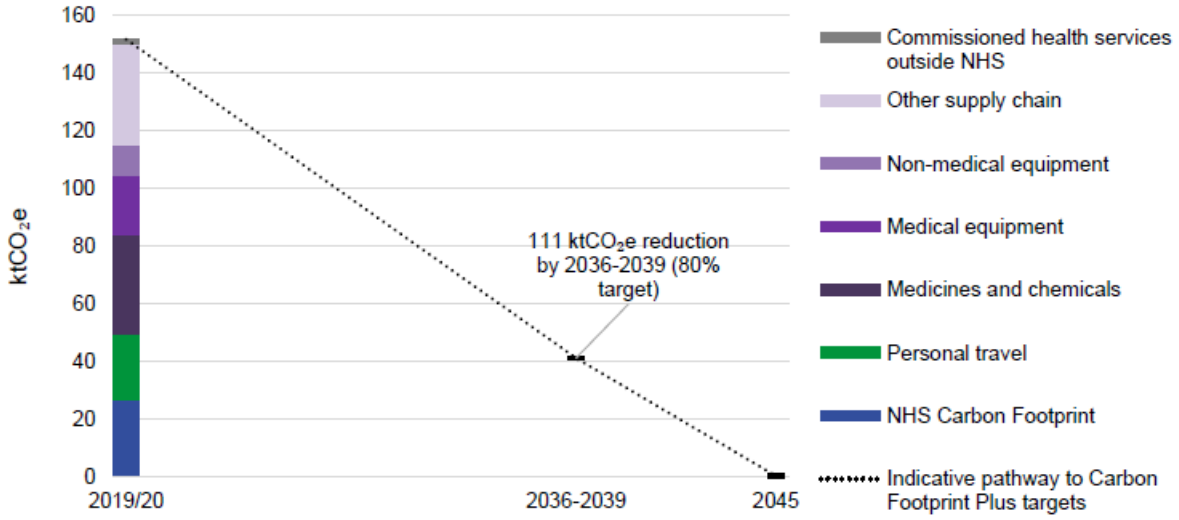
NHS Footprint Reduction Graph

APPENDIX A: Royal Devon University Hospital NHS Foundation Trust, Greener NHS




Source: NHS England

## NHS Footprint Plus Reduction Graph

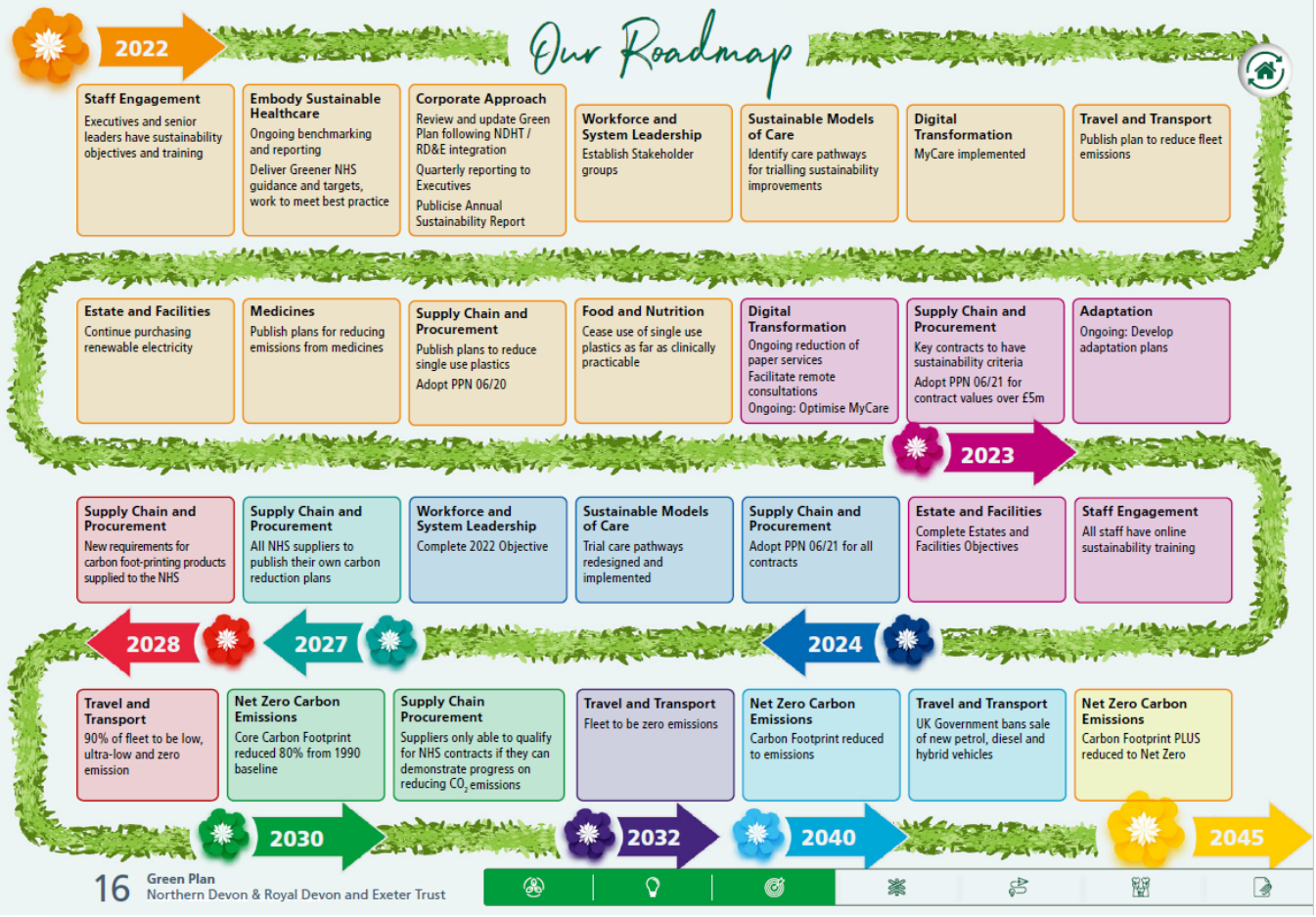



## Place-Based Initiatives and targets

The Trust has also agreed to work alongside its Exeter based public sector civic partners to accelerate the net zero objective for its Wonford and Heavitree services and aim for net zero by 2030. As a member of Exeter City Futures the city of Exeter has an ambitious plan[1] of action based on four themes: Sustainability, Transportation Energy and Capacity. The Trust teams are working alongside colleagues from civic partners exploring collaboration opportunity's across energy projects, waste management and transport initiatives.

## Our Net Zero roadmap

The Green Plan establishes a series of work initiatives that are designed to make progress on the three strategic targets and their supporting objectives. These are shown in the roadmap below, which includes Royal Devon's goals and National targets.




NHS England have developed several "Key Areas of Focus" that the NHS is required to target, in order to reduce carbon emissions, costs and improve our impact on people and the environment.

[1] https://www.exetercityfutures.com/netzeroexeter/

The updates below explain how we are tackling these areas of focus and are able to report on out progress.

## Workforce and System Leadership

In order to embed sustainability into 'business as usual', the Trust has been working to set up sustainability workstreams and where possible link them into existing initiatives. An example of this is how the Sustainability Team has supported the Brilliant Ideas initiative; anyone can submit suggestions for improvements to the Brilliant Ideas team and in the first few weeks over 70 ideas were received with many of them having a strong sustainability focus.


*Sustainability Awareness Survey and Behaviours at work:*

- 38.84% of staff agreed that the Trust actively supports the environment, such as resource efficiency, reducing carbon emissions and reducing waste
- 38.64% of staff said that they always turn off equipment and lights when leaving an empty room
- 51.24% of staff said they always recycle products when they can
- 47.41% of staff said they always reduce paper usage by thinking about if something can be kept digitally
- 75 staff members have accessed the training

*Training*

From September 2022 Net Zero NHS training has been available on Learn+. Our staff can learn about climate change and how the NHS aims to reduce its carbon footprint. The online training helps to raise awareness about the effects of climate change both on our planet and our hospital and the steps we can take to make healthcare more sustainable. The training takes 30 minutes to complete and there is no pass or fail rate.

Together, we can act to reduce the impact of climate change on our environment, and completing this training program is a great place to start.

APPENDIX A: Royal Devon University Hospital NHS Foundation Trust, Greener NHS

## Sustainable Models of Care

### *Case Study 1 - Virtual Wards*

Our Acute Hospital at Home (AHAH) service, which is nationally referred to as the 'Virtual Ward' programme, is a safe and efficient alternative to receiving care as an inpatient on a hospital ward.

The service runs across both our Eastern and Northern services and we currently have capacity to support fifty-five patients (planned to increase to 100 by December 2023) across a wide range of pathways from, amongst others, cardiology, respiratory, acute kidney injury (AKI) and frailty.

Patients referred to our AHAH service receive the same care, monitoring and treatment that they would from a hospital bed or from a local community service, but from the comfort of the patient's own home. Our AHAH team, which includes doctors, nurses, pharmacists, therapists and advanced care practitioners, are in touch with patients on a regular basis throughout the day as required.

As part of the development of the AHAH service the Trust is trialling the use of wearable devices. Devices such as watches, connecting through smart phones, are recording real time data on oxygen saturation and heart rate monitoring and transferring this data into the patient's electronic record. Twice daily blood pressure monitoring from our community teams add to this daily data collection fed directly to the electronic record. This remote working allows the patient's named consultant to monitor their condition using their own smart technology.

We expect these services to develop further to include cardiology (ECGs) and respiratory (spirometers) and to also incorporate digital weighing scales. These technologies support people living with frailty, heart failure and are likely to be suitable for people receiving home based IV antibiotics as an outpatient service (OPAT: outpatient parenteral antimicrobial therapy service).

We know that being treated in your own home can have a hugely positive impact – patients can continue with their daily routine and make choices about what they can eat and wear, with the people they know and love around them. Patients also avoid the risks that an inpatient stay may have, such as deconditioning and delirium. All of this leads to a better chance of recovery for our patients.

By freeing up hospital beds and creating more capacity in this way, our AHAH service positively impacts on both healthcare service and environmental sustainability and improves the flow of patients, easing pressures on our emergency departments and helping to reduce waiting times for both planned and emergency care.

## Case Study 2 - Outpatient Redesign

During 2022 the NHS's elective recovery strategy included targets to reduce outpatient follow-ups by 25% and moving 5% of outpatient attendances to patient-initiated follow-up (PIFU) pathways by March 2023.

Patient-initiated-follow-up (PIFU) are a pathway redesign to routine follow-up pathways, putting patients and clinicians together to understand short, medium and long-term conditions. They rework the routine pathways to change from routine time-based appointments which patients attend and may or may not be demonstrating issues, to a focus on patients who are experiencing symptoms to the condition they have.

This has gone live in 20 specialties across the Trust and now provides patients with the opportunity to take their health into their own hands. This leads to a sense of empowerment for patients, that they are not only the key player in their healthcare journey as their engagement improves and increases, but that their relationship with their clinician.

Whilst it is early days for reporting benefits there is some promising evidence that PIFU results in fewer overall outpatient appointments compared to fixed appointment schedules, leading to a reduction in wasted (and low value-added) activity, avoided energy use and reduced carbon miles for patents.

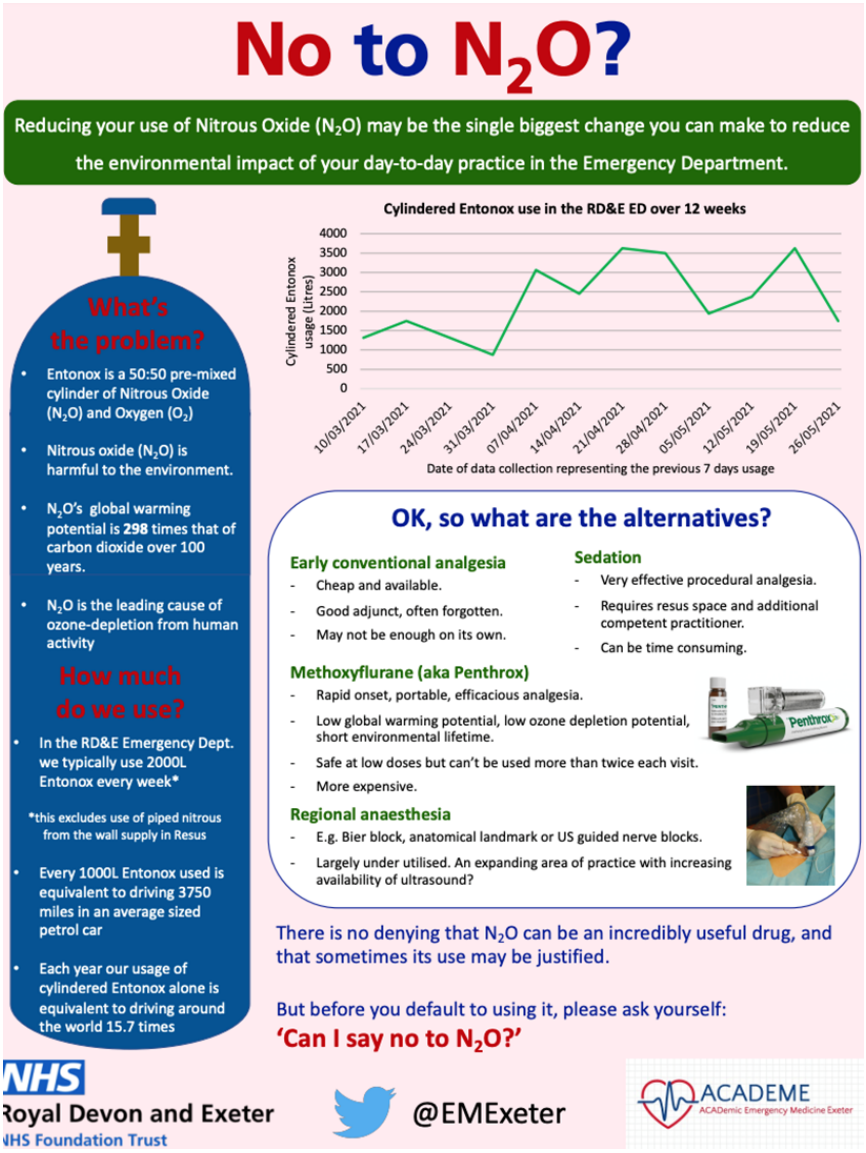
## *Case Study 3 - Greener ED*

The Eastern Services Emergency Department has been leading the way as a national pilot site for the Royal College of Emergency Medicine Greener ED programme. Under the leadership of ED Consultant Dr Steve Fordham, the department has undertaken many of the initiatives required to reach Gold standard under the college's accreditation framework. This includes reduced paper, increased digitisation of services and information, reduced cannulisation, reduced use of Entonox (saving around 1000 litres of Nitrous Oxide per week) – see poster below - dry powder inhalers replacing some metered dose inhalers, introduction of social prescribing and an increased modal shift for staff travel and transportation.

With a silver accreditation under their belt, the department looks to push on to embed sustainable ED practices into 'business as usual' in 2023. This would achieve Gold accreditation and be facilitated by the allocation of time for managing green projects within job planning and departmental capacity.

APPENDIX A: Royal Devon University Hospital NHS Foundation Trust, Greener NHS

Reduced Entonox campaign in ED




In addition to the Greener ED initiative the department was selected by the DHSC to run a 3-month national trial of reusable facemasks. This trial was successfully completed during the year and we are the first healthcare team ever to have successfully trialled this Type IIR tracked (RfID) washable facemask.

In the 4 months of the trial we achieved 8927 washes and over a year this would be over 25,000 single use facemasks avoiding incineration in ED alone. The Trust is participating in an evaluation of the whole life costing of this mask replacement to enable a comprehensive assessment to be completed by the DHSC. We hope to move to using more sustainable product under 'business as usual' shortly.

NHS Supply Chain

NHS Royal Devon University Healthcare NHS Foundation Trust


## Travel and Transport

### *Salary Sacrifice Lease cars*

Through the trust's lease car provider (Tusker), staff have an opportunity to acquire an electric vehicle and this includes free installation of home charging points. The tax benefits of this scheme have contributed significantly to the affordability of EV's although we recognise that at this time the scale of adoption has been partially limited by the higher cost of current models. We expect the EV market to mature leading to the introduction of more affordable EV's and we will work with Tusker to promote these in order to achieve a broader adoption across all staff levels in the trust.

### *Cycling Friendly UK Accreditation NDDH – Achieved September 2022*

We have begun a journey to increase our use of sustainable and active modes of travel that deliver environmental and health benefits. This includes the introduction of new cycle storage infrastructure, changing and shower facilities and becoming a Gold standard Cycle Friendly Employer. Northern Services were awarded a Gold standard of accreditation by Cycling UK during the year and have embraced the Cycle Friendly Employer accreditation to assess and aid its planning and continual improvement. The audit highlighted the lack of secure cycling parking at our Community Hospital sites and we are planning on installing secure cycling parking in 2023 to address this. We are also working on extending the accreditation to include Eastern Services.


### *EV Charging for Estate Vehicles and visiting Clinicians*

We are working towards decarbonising the travel and transport relating to our own operational activity by undertaking Green Fleet Reviews ahead of procuring EV fleet where operationally appropriate and subject to funding. We have also installed, or are finalising insulation, for 43 charging points across the estate.

In Barnstaple the initial installation of five 7kW single charge points and two 22kW single charge points for our Estate Vehicles to use as well as four 22kW single charge points for visiting clinicians has begun to reduce travel related $CO_2e$. In Exeter 6 charge points are installed for our fleet (4 of which are at our warehousing facility) and 10 are planned for staff use at the trusts dedicated park and ride service.

### *Try B4U Buy – Implementation 2023*

As part of facilitating active and sustainable travel options for staff the team have developed a ‘Try B4U Buy’ trial for foldable e-bikes. Grant funded, these foldable e-bikes provide staff with a folding e-bike for a trial period, so that they can test whether this commuting experience works for them before perhaps committing to a purchase.

This project is being linked with the opening of the new Marsh Barton train station in Exeter with the Trust working with GWR and DCC to promote active travel. The foldable e-bikes will be available for Northern and Eastern staff to trial and the team are looking forward to launching this alongside a

new loyalty benefit scheme to reward staff undertaking sustainable behaviour change

### *Air Quality Monitoring - Implementation 2023*

Looking into next year we are adopting the Clean Air Hospital Framework tool in order to monitor air quality internally and externally to our buildings. Initially working alongside the Council in North Devon we will provide a passive air quality monitoring system for the loading bay and the main entrance and look to assess 12 months data before assessing the potential need for a dynamic monitoring system. This work will then replicate across the Eastern site.

Minimising the environmental and health impacts associated with the movement of goods and people through our estate by becoming a Clean Air Hospital is a key objective of the Trust and links to work we are planning for decarbonising our heating across the estate.

## Estates and Facilities

Whilst both the RDE and NDDH have benefited in terms of reduced cost and Co2 from investment via Energy Performance Contracts, the current constraints on capital investment make this a more challenging area to progress. There is of course significant potential to improve energy efficiency via the Our Future Hospital programme, albeit the timing is currently unclear. Therefore, for now, the Trust will prioritise investment bids based on those schemes that can deliver both a financial and $CO_2$ payback

Current examples of successful projects include:

- Installation of over 16,000 LED lights, which last year delivered energy savings of 4,283,185KWh.
- The Trust utilises software to automatically monitor building performance
- In 2022-23 £30,000 has been spent on identifying and fixing leaks across the estate, which combined with efficiencies in the Linen Decontamination Unit have saved 14,000m3 of hot and cold water reducing emissions by 116t/$CO_2$.
- Replacing oil boilers with Air-Source Heat Pumps, saving 5t/$CO_2$ per year.
- Installation of 746kw PV across RD&E Wonford, RD&E Heavitree, North Devon District Hospital and Mardon Neurological Rehabilitation Centre. This generates enough energy to run 216 homes and last year saved 121t/$CO_2$.

The Trust has also signed a letter of intent, committing to work with partners across the City of Exeter to develop and deliver a low-carbon district heating solution. While this builds on previous work carried out in this area, there are key differences to the previous proposal including siting of the primary heat generation plant no longer on Trust land and collaborating with a private sector provider who has secured £110m of funding to deliver the revised scheme.

## Energy

## Waste

For three months during the year northern services conducted a reusable sharps container trial. These Stericycle Bio Systems re-usable sharps containers were installed in three areas:

- Main theatres 1-6,
- Emergency Department and
- Seamoor Unit.

Staff have embraced the change to their clinical practice and reported no issues with use of the different containers. The bins are emptied and decontaminated after each use, with these sharps now having an expected life of 600 uses rather than being single-use and incinerated. So far 374 single use containers have not been required and saved from incineration. Also 722kgs of single use plastic has not been required resulting in a saving of 2114 Kgs of carbon.

Waste and recycling is also a particular issue being raised by staff through the ‘Bright Ideas’ portal and the Facilities team are now reviewing how to move away from single room waste bins to communal recycling bins.

## Biodiversity

As well as carbon, energy and water related improvements, the Trust has used its Biodiversity and Outdoor Wellbeing Action Plan (BOWAP) to inform planting options in the Wonford Bereavement garden design and through the Spring will be designating a further 1,000m2 of land as “No-Mow” in order to enhance biodiversity.

## Medicines

### *Desflurane*

The Trust no longer uses Desflurane, the most polluting of all the anaesthetic gases, across any of its sites. Other anaesthetic volatile agents - the halogenated hydrocarbons- have seen their harmful impact reduced due to an increase in the use of total intravenous anaesthesia (TIVA). A business case is being developed to evaluate and install "capture and recycle" technology across all anaesthetic

machines in the Trust to reduce the environmental harmful effects still further.

#### *Nitrous Oxide.*

Within the eastern services, nitrous oxide is no longer used in non-maternity anaesthesia. This has allowed work to begin on the permanent decommissioning of the nitrous oxide cylinder manifold and its associated pipeline in Exeter.
Northern services anaesthesia are reducing the use of nitrous oxide by switching to cylinder use only and have similarly started the work required to decommission the cylinder manifold.

#### *Entonox*

Both Trust emergency departments have moved away from Entonox and are now using Penthrox except in paediatrics. Other departments that use Entonox, are also moving over to Penthrox where clinically appropriate e.g. fracture clinic.

In maternity where Penthrox is contraindicated a business case to install "capture and fracture" technology is being developed.

### Supply Chain and Procurement

With 60% of NHS emissions coming from procurement related activities, new rules were introduced in 2022 that require all NHS Trust's to have a minimum of 10% weighting applied to social value criteria in its procurement exercises.

Proposals for the practical use of this evaluation criteria are being incorporated into the procurement strategies of a number of new Trust cases.

### Food and Nutrition

The Trust has previously (for eastern services) been awarded exemplar status for its food and nutrition service. Waste food collection currently takes place across both sites and sent to anaerobic digestion

### Adaptation

The latest science presented through UK climate predictions (2018) suggest we can expect wetter, warmer winters and hotter, drier summers with alongside an increased frequency and intensity of extremes.

The Trust has begun work on developing its adaption plan and is engaged with the University of Exeter's European Centre for Environment and Human Health (ECEHH) – in the use of their Local Climate Adaption Tool (LCAT) to support evaluation and local decision making.

## Future priorities

The plan for 2023/24 concentrates our efforts across 5 key areas:

1. Supporting Culture Change
2. Process Driven Change
3. Policy Driven Change
4. Operationalising the Plan
5. Carbon Measurement

## Supporting Culture Change

We will support the process of a maturing greener culture change across the organisation through our engagement and coms work - including embedding our new online rewards scheme (Jump) and introducing a series of tests of change (Try before U Buy e-bikes for example). Our magazine style hub page is a step-change in how we communicate our activity and entice staff involvement into our green work, with the recent Green Champions network a good example of this. We will seek to get feedback on how this new style coms are being received by staff.

Another important aspect of supporting the change process is how we provide an opportunity for staff education and training. The newly developed training regime on Learn + and through the nationally supported carbon literacy training will support the spread of green knowledge across all levels of staff in the organisation. We will establish targets to measure the consumption of training including capturing new appointees undergoing induction.

## Process Driven Change

We will expend a considerable amount of effort to ensure the work of the sustainability team is complementary to the projects being led under the Transformation team. We will support joint working to ensure that the success of green initiatives is agnostic to their origin – whether from our sustainability channels or through the “Brilliant Ideas” programme, these initiatives required the right type of skilled support to maximise their opportunity and impact. We will focus on creating ‘slick-process’.

## Policy Driven Change

National Policy change over the coming few years has the potential to lay the foundations for significant decarbonisation of the Trusts footprint. We will work with our colleagues in procurement to establish, through the adoption of Cabinet Office PPN notices, the methodologies required for incorporating Carbon Reduction Plans (CRP’s) into our supply-chain. National initiatives like the Evergreen Supplier Assessment Tool be monitored in 2023 and we will assess adoption plans during its national launch period.

## Operationalising the Plan

The Green Plan document approved by the trust in 2022 has a series of aspirations and work during the latter part of 2022/23 has been to begin to ‘operationalise’ this plan. This work programme will now accelerate during 2023 through a series of

deep-dive assessments between the sustainability and operational teams. These assessments have established the need for more detailed planning and investment case development across the following areas:

### i) Heat decarbonisation

The Trust has previously prepared a high-level decarbonisation strategy that aims to decarbonise the circa 80 buildings that make up the estate. The team wishes to progress its strategy to an organisation level Heat Decarbonisation Plan / delivery plan and HDPs for each site, with particular focus on the RD&E Wonford (General Hospital) and RD&E Heavitree sites and will seek a 100% funded grant to complete this work. These sites have the potential to connect to the Place based decarbonisation solution described earlier in this report. Early indication suggest that this scheme might be up to 30% cheaper than a site-based solution, with the anchor load that the Trust offers supporting local rollout of large-scale decarbonisation. HDPs up to Investment Grade Audit level are essential to prepare a business case that identifies whether to connect to the network or opt for an on-site heat decarbonisation solution.

Should the investment case select the place-based option as the preferred solution (best risk adjusted value for money), and is subsequently approved by the Board of Directors, the team will seek a funding solution through the Public Sector Decarbonisation Scheme (PSDS) to pay for connection charges.

### ii) EV and low emissions fleet

Work will progress during 2023 to establish the investment case for the proportion of our fleet that represents an opportunity to move to electric vehicle or ultra-low emissions vehicle. Subject to funding approval we will establish the procurement strategy by assessing the different EV/ULEV vehicle frameworks. Recent studies have shown that life-time cycle costs of petrol/diesel vs EV’s have now tipped in favour of EVs.

## Carbon Measurement

We will work to significantly improve our carbon measurement processes and the management of carbon reporting. Whilst NHS England are supporting a ‘top-down’ approach for the organisational level footprint, it is increasingly evident that the trust requires greater skill and capability for recording and reporting its carbon impact from change projects. We will focus on developing a carbon reporting data-library to ensure documentary evidence of validated carbon information is kept by the trust.