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NHS
The Newcastle upon Tyne Hospitals
NHS Foundation Trust

Shine

Sustainable Healthcare in Newcastle

Sustainable Healthcare in Newcastle (SHINE) Report 2021-22

Contents

1. Foreword

Three years ago, Newcastle Hospitals made the bold step of becoming the first healthcare organisation in the world to declare a climate emergency, publicly acknowledging the link between the health of our planet and the health of our people and committing to take action to fast track a reduction in our carbon emissions.

The climate emergency is severe and acute, but not yet chronic. We still have time to take action – but only just.

Since then, many other healthcare organisations have also taken that step, the NHS has created its 'Delivering a Net Zero NHS' strategy and established Greener NHS with the remit to take us as a healthcare system to Net Zero Carbon by 2045.

There have been a number of excellent advances in sustainable healthcare this year, with the world's first zero emissions ambulances unveiled at COP26, and at our very own Newcastle Birthing Centre at the Royal Victoria Infirmary the first baby in the UK was born using climate friendly gas and air for example.

In parallel to these efforts, the Intergovernmental Panel for Climate Change (IPCC), the world's leading body of climate scientists, released its latest report[1] stressing that it is Now or Never to transition to a low carbon way of working to 'keep the goal of 1.5 alive' and avoid setting off a catastrophic chain of events leading to run away climate change.

Here at Newcastle Hospitals, despite many advances we have continued to see our carbon footprint increase, which is why we are calling this issue of our Annual Sustainability Report our Red Flag issue.

The climate emergency presents a huge threat to human health with the predicted impacts likely to dramatically increase the strain on already over-burdened healthcare systems. I feel a professional and moral duty to sound the alarm about the seriousness of the climate emergency and drive urgent action within Newcastle Hospitals. As a group of trusted professionals, I believe that we have

We must adopt a leadership position and drive the scale of change that is needed across the NHS system and wider economy.

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an obligation to raise awareness of the risk, much as we did when scientists first raised concern about the links between smoking tobacco and risks to health.

The climate emergency is severe and acute, but not yet chronic. We still have time to take action – but only just.

Our staff across the organisation are doing amazing work in their own spheres of influence, and we must encourage and empower them to do even more, but we also need to speak up for action beyond our organisation.

We must adopt a leadership position and drive the scale of change that is

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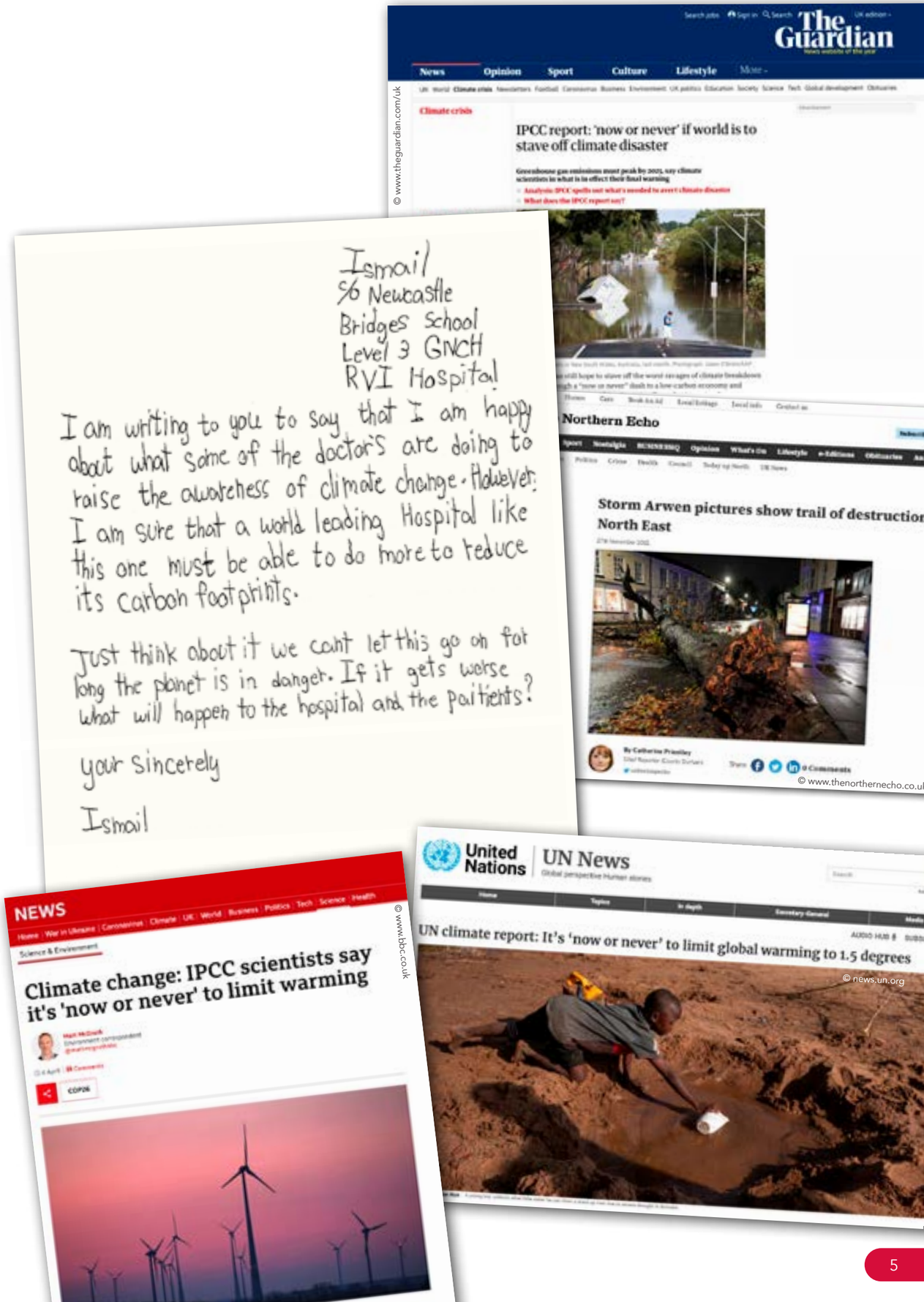
required across the NHS system and our wider economy. After all, with the multiple challenges faced by the NHS, if we can rise to the challenge, surely everyone can.

As a result of the findings in this year's report we are doing two new things. Firstly, we have taken notice of the red flags and have given a new mandate to our Executive Oversight Group for Climate Emergency to address these concerns with renewed urgency, seeking additional action to get back within our carbon budget.

Secondly, we are calling for more support to address the systemic barriers to change identified throughout this report, without which it will be impossible to reach our goals of Zero Carbon, Zero Waste and Clean Air.

As a COP26 Ambassador I attended the event in November and was encouraged that the healthcare sector had a prominent role. I remain optimistic that although the challenge is great it is achievable, and with our history of excellence and innovation within the NHS, we can be a significant part of the solution to this global crisis if we all act together and act now.

Dame Jackie Daniel
Chief Executive



2. Introduction

At Newcastle Hospitals we have gained a reputation for sustainability leadership within the healthcare sector, but the reality is that we are falling dangerously behind expectations, and more importantly, what the science demands.

This year our total carbon emissions have risen at an alarming rate despite continuing to embed sustainable healthcare activity across many areas.

In our Climate Emergency Strategy published in 2020, we established our carbon budget which showed the requirement for a 12.8% year on year reduction and highlighted the requirement for early action. Informed by the latest science on carbon budget setting, this budget translates the 'well below 2°C and pursuing 1.5°C' global temperature target in the United Nations Paris Agreement.

This year, not only have we exceeded the budget for the second year, but our carbon footprint has risen beyond our baseline year of 2019.

It's now or never!

In April 2022, the UN's Intergovernmental Panel on Climate Change (IPCC) published its latest guidance on what the world can do to avoid an extremely dangerous future.

The world must cap the rise in temperatures at or under 1.5°C this century to have the best chance of avoiding climate tipping points, beyond which feedback loops are predicted to drive run away warming and present an existential threat to the human race.

The report states that there must be "rapid, deep and immediate" cuts in carbon dioxide emissions in order for us to have a chance of keeping temperature rises below 1.5°C.

Newcastle Hospitals was the first healthcare organisation in the world to declare a climate emergency, publicly acknowledging that the climate crisis is a health crisis and committing to fast tracking our carbon reductions. Three years since that declaration we are failing to achieve that aim.

However we have succeeded in inspiring other institutions to take action and have become established as leaders, with a trusted voice on sustainability in healthcare. Both

The world must cap the rise in temperatures at or under 1.5°C this century to have the best chance of avoiding climate tipping points, beyond which feedback loops are predicted to drive run away warming and present an existential threat to the human race.

This year, Newcastle Hospitals' annual sustainability report is our 'red flag' issue. We are sounding an alarm – without dramatic, systemic, transformational change across healthcare, we cannot achieve our goals of Net Zero Carbon, Clean Air and Zero Waste.

Dame Jackie Daniel (CEO) and James Dixon (Associate Director, Sustainability) attended COP26 in November 2021 and contributed to the event from a healthcare perspective.

As an organisation in a position of influence we are once again making a bold statement.

This year, Newcastle Hospitals' annual sustainability report is our 'red flag' issue. We are sounding an alarm – without dramatic, systemic, transformational change across healthcare, we cannot achieve our goals of Net Zero Carbon, Clean Air and Zero Waste.

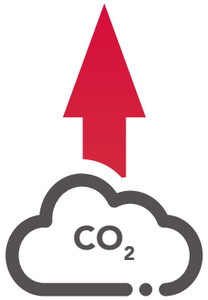
In this report we are highlighting not only the actions and achievements made across our Shine themes of Energy & Water, Buildings & Land, Waste, Journeys & Clean Air, Procurement, Models of Care and People, but also the areas where we have not done so well, and the barriers to change that we are encountering. These are highlighted as our 'red flags' throughout.

We also explore the impact of our overall performance on the remaining carbon budget, and how our annual reduction targets will have to be adjusted to bring us back in line with science

This year we have undertaken more stakeholder engagement than ever before, and have heard from staff, suppliers and our service users about what the climate emergency means to them and where they want us to prioritise action.

All of this, as well as our usual case studies of ambitious sustainability action, is explored in this report where we detail our performance and activities over the last 12 months, and outline what we plan to do in the coming year.

Despite all of these achievements... our emissions continue to rise



First UK baby born using **climate friendly** gas and air

Introduced **recycling for metal instruments**

Introduced **no-idling policy**

Trained Directors on Climate & Health Emergency

Expanded fleet of electric bikes and vehicles

Launched project to **'Green the Grey!'**

Produced a **Biodiversity Action Plan**

Trained **25 Managers** and new **Sustainability Ambassadors**

Recycled over 50% of our non-healthcare waste

Carried out feasibility studies for the journey to **a Net Zero Estate**

Supported 7 directorates to embed sustainability

Developed heat decarbonisation plans for our hospitals

Engaged and supported our suppliers with climate emergency action

Switched off N_2O and **desflurane** at Freeman Hospital

Increased LED lighting Trust-wide

Installed air quality monitoring on site

Embedded **low carbon design** in new-builds

Introduced SusQI into Newcastle Improvement

Worlds first **carbon neutral cataract surgery**

3. Overall Performance Update

In 2019 we were the first Healthcare organisation in the world to declare a climate emergency. In 2020 we published our Climate Emergency Action Strategy 2020-2025. The strategy is available on the Trust website (bit.ly/CEStrategy_NUTH) and sets out the plans we've developed, across all eight Shine (Sustainable Healthcare in Newcastle) themes, towards the following long term goals:

1. Zero Carbon Care

- By 2030 the emissions we control will be net zero – our 'Newcastle Hospitals Carbon Footprint'
- By 2040 the emissions we can influence will be net zero – our 'Newcastle Hospitals Carbon Footprint Plus'

2. Clean Air

- By 2030 our operational transport activities generate no harmful air pollution
- By 2040 our healthcare facilities are accessed by only zero emission travel

3. Zero Waste

- By 2030 we will reuse and repair everything that can be reused and repaired
- By 2040 we will produce no waste. We will manage resources within the circular economy, with items surplus to requirements becoming a resource in another part of the system

3.1 Carbon Footprint

Red Flags!

We are now two years into our five-year climate emergency strategy and the key performance indicators are going in the wrong direction. Far from reporting the required "rapid, deep and immediate" cuts in carbon dioxide emissions, our carbon footprint is increasing in almost all areas, and at a significant level.

Category	Sub-category	Total tCO_2e			% change from baseline
		2019-20	2020-21	2021-22	
Newcastle Hospitals carbon footprint	**Scope 1**				
	Building energy – fossil fuels	54,858	53,901	55,626	1
	Refrigerant gases	477	246	246	-48
	Anaesthetic gases	4,336	3,345	3,360	-23
	Trust fleet	112	42	25	-78
	Scope 2				
	Building energy - purchased electricity[4]	4,933	4,924	6,394	30
	Scope 3				
	Water	441	454	229	-48
	Waste	105	99	113	8
	Inhalers	1,399	903	1,331	-5
	Business Travel	1,278	724	657	-49
Newcastle Hospitals Carbon Footprint Total		**67,939**	**64,638**	**67,980**	**0**
Medicines, medical equipment and other supply chain*	*Medicines and chemicals*	*87,971*	*94,239*	*159,908*	*82*
	Other supply chain	*55,793*	*78,293*	*65,696*	*18*
	Medical equipment	*57,615*	*52,123*	*76,165*	*32*
	Procurement total	***201,379***	***224,655***	***301,770***	***50***
Personal travel	Staff commute	14,863	13,089	10,338	-30
	Patient and visitor travel	24,127	16,520	22,264	-8
Newcastle Hospitals Carbon Footprint Plus Total		**308,308**	**318,902**	**402,352**	**31**
Patient numbers		1,788,469	1,432,307	1,837,107	
Carbon intensity (tCO_2e per patient contact)		**0.172**	**0.223**	**0.219**	27

Table 1: Breakdown of Total Newcastle Hospitals Carbon Footprint in our baseline year 2019/20 and this year 2021/22[5]

** these figures are estimated based on spend code analysis, the limitations of which are explained in the case study in the Procurement section of this report.*

NEWCASTLE HOSPITALS CARBON FOOTPRINT

This year we have seen a 5% increase in our Newcastle Hospitals Carbon Footprint compared to last year, and no change compared to the baseline year.

We have overshot our target by a cumulative amount of 21,500 tCO_2e since 2019, which will need to be compensated for in future years.

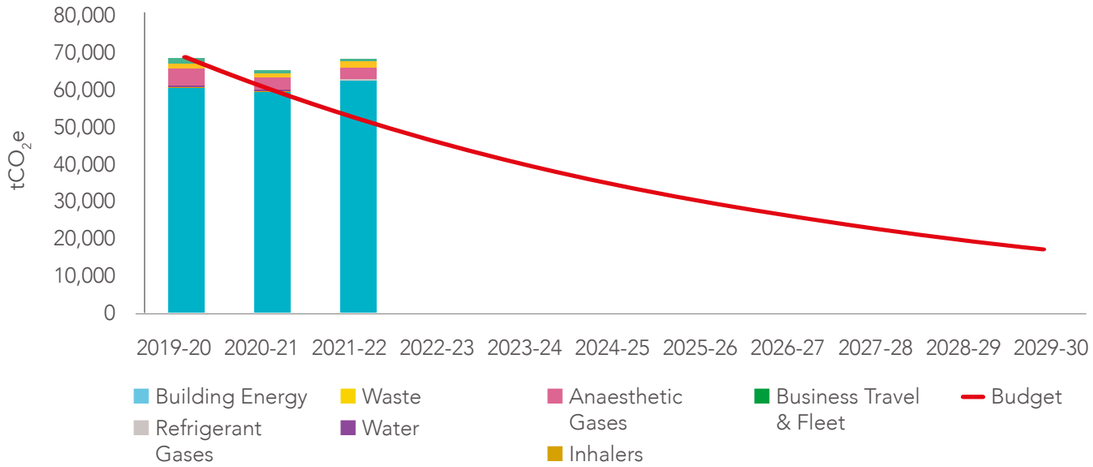


Fig 1: Newcastle Hospitals Carbon Footprint

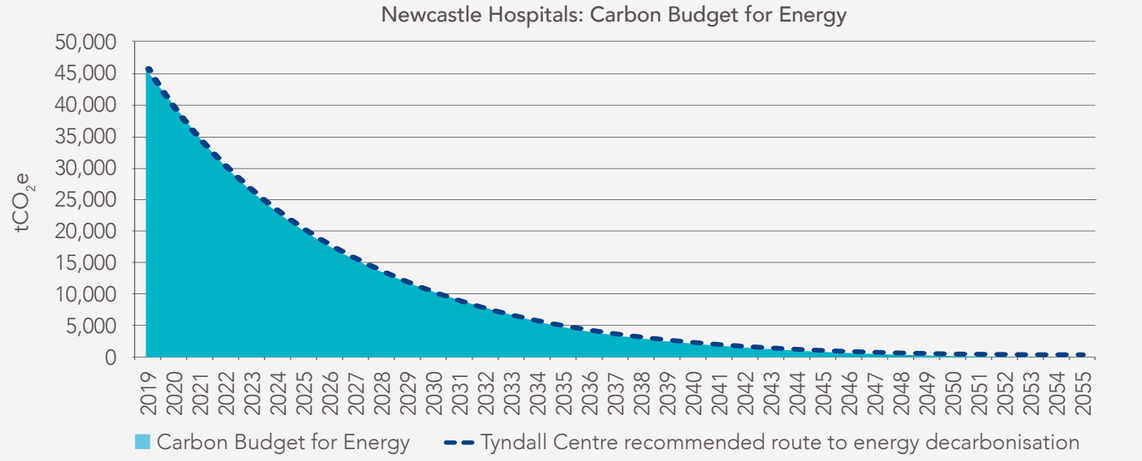
The level of action required to stay within the carbon budget is now even greater.

CARBON BUDGET – WHAT DOES IT MEAN?

In our Climate Emergency Strategy we stated that we have incorporated the principle of carbon budgets into our plans, calculating a limit on how much carbon dioxide we can emit over the rest of the century, with the emphasis on immediate action.

The Tyndall Centre for Climate Change Research uses the principles of science and equity that are aligned with the commitments in the United Nations Paris Agreement to set budgets at national and sub-national levels, providing local authorities with recommendations that translate the 'well below 2°C and pursuing 1.5°C' global temperature target.

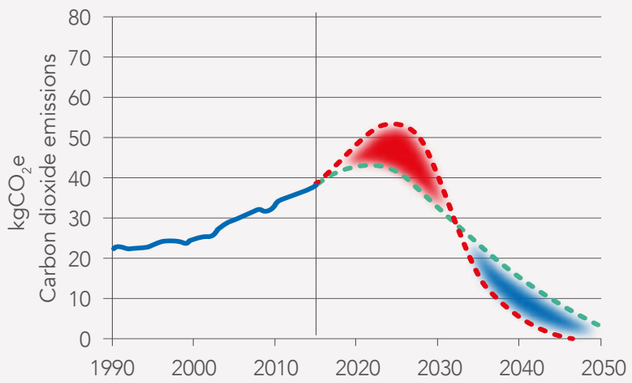
We took that method and applied it at our organisational level for Newcastle Hospitals, which showed a requirement to reduce our building energy carbon emissions by 12.8% annually from our 2019 baseline. The carbon budget is the total amount of carbon dioxide we can emit and in 2020 was calculated to be the shaded area beneath the line in the graph below:



As has been reported we have not achieved that level of reduction for the last two years, meaning the level of action required to stay within the carbon budget is now even greater.

In order to stay within budget we will need to compensate for that overshoot with more dramatic decreases before we reach the end of the period.

In the example on the right, the area beneath the blue dashed line is the same as the area beneath the red dashed line, as the extra emissions are compensated for by more dramatic reductions later on.



By far the greatest portion of the Newcastle Hospitals Carbon Footprint is Building Energy. The only components of this footprint to have seen a decrease this year are Business Travel & Fleet and Water.

Each of these are explored in more detail throughout the report.

NEWCASTLE HOSPITALS CARBON FOOTPRINT PLUS

Even more concerning is the increase in the Newcastle Hospitals Carbon Footprint Plus. This is a 26% increase from last year, and a 30% increase compared to the baseline year.

As can be seen in figure 2 **procurement is estimated to account for the vast majority of the Carbon Footprint Plus**, at almost 80%, and is expected to increase further as our methodology improves and we are able to report a more complete and accurate picture. This presents a huge challenge when considering how we will reach the goal of Net Zero Carbon by 2040.

The Greenhouse Gas Protocol recognises four methods for calculating emissions from purchased goods and services. We are progressing up the hierarchy of methods from the spend based method to the hybrid method (see glossary for an explanation of these terms).

Further information about our work with suppliers, and how that will improve the data available for all NHS organisations reporting their supply chain carbon footprints, is included in the Procurement section of this report.

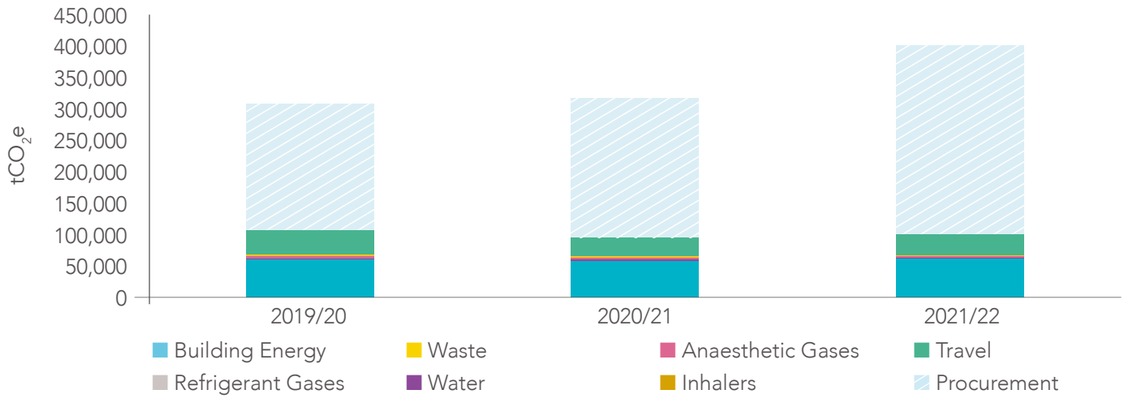


Fig 2: Newcastle Hospitals Carbon Footprint Plus

CARBON OFFSETTING

Within the Climate Emergency Strategy there is an aim to research and investigate innovative carbon offsetting, or insetting, options for our residual carbon emissions.

The Science Based Targets Institute's Net-Zero Standard[6] requires that an organisation should aim for emission reductions of at least 90-95%, allowing for a maximum 5 -10% offsetting. Although we have not formally adopted Science Based Targets at Newcastle Hospitals this provides us with a good indication of stakeholder expectation that, if used, offsets should make up a small proportion of the portfolio of actions and that effort should be focused on significantly eliminating and reducing emission sources ahead of offsetting.

SUSTAINABLE DEVELOPMENT ASSESSMENT TOOL

In previous reports we have reported our progress against the SDAT, developed by the Sustainable Development Unit (SDU) to help healthcare organisations understand and measure their progress and plan for the future.

This tool has been removed and at the time of writing Greener NHS are reviewing resources and still considering whether a similar tool will be developed to replace it.

Progress against all the areas of focus of the SDAT is reported in the relevant sections.

3.2 Stakeholder Engagement

STAFF SUSTAINABILITY SURVEY

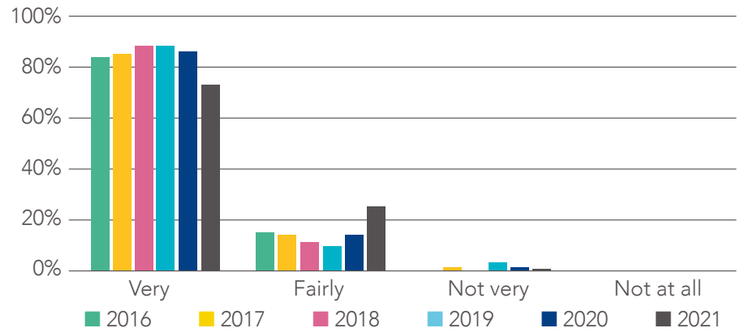
Over the last eight years we have been carrying out an annual staff sustainability survey to gain insight into their opinions and understanding of sustainability.

In recent years, despite huge challenges in the NHS, **99% of our staff believe that it is important for us to work in a more sustainable way.** Although we have seen a reduction in the number of staff who think it is 'very important' to those who think it is 'fairly important' in the last two years.

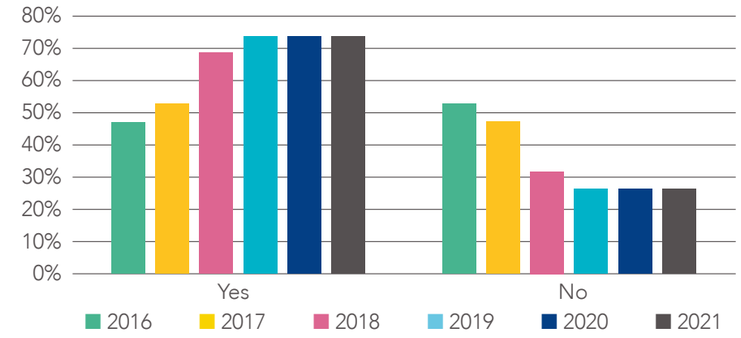
To assess the effectiveness of our communication and engagement work, we also ask our staff if they are aware of the sustainability work of the Trust. Since the launch of our Shine brand in 2016 this increased year-on-year up to 74% of staff in 2019, a rate that has remained consistent since then.

We also asked staff to let us know their views on sustainability and we have **woven this feedback throughout the report to demonstrate how our staff are feeling about the Climate Emergency and our response to it.**

How important do you think it is for the Trust to work in a more sustainable way?



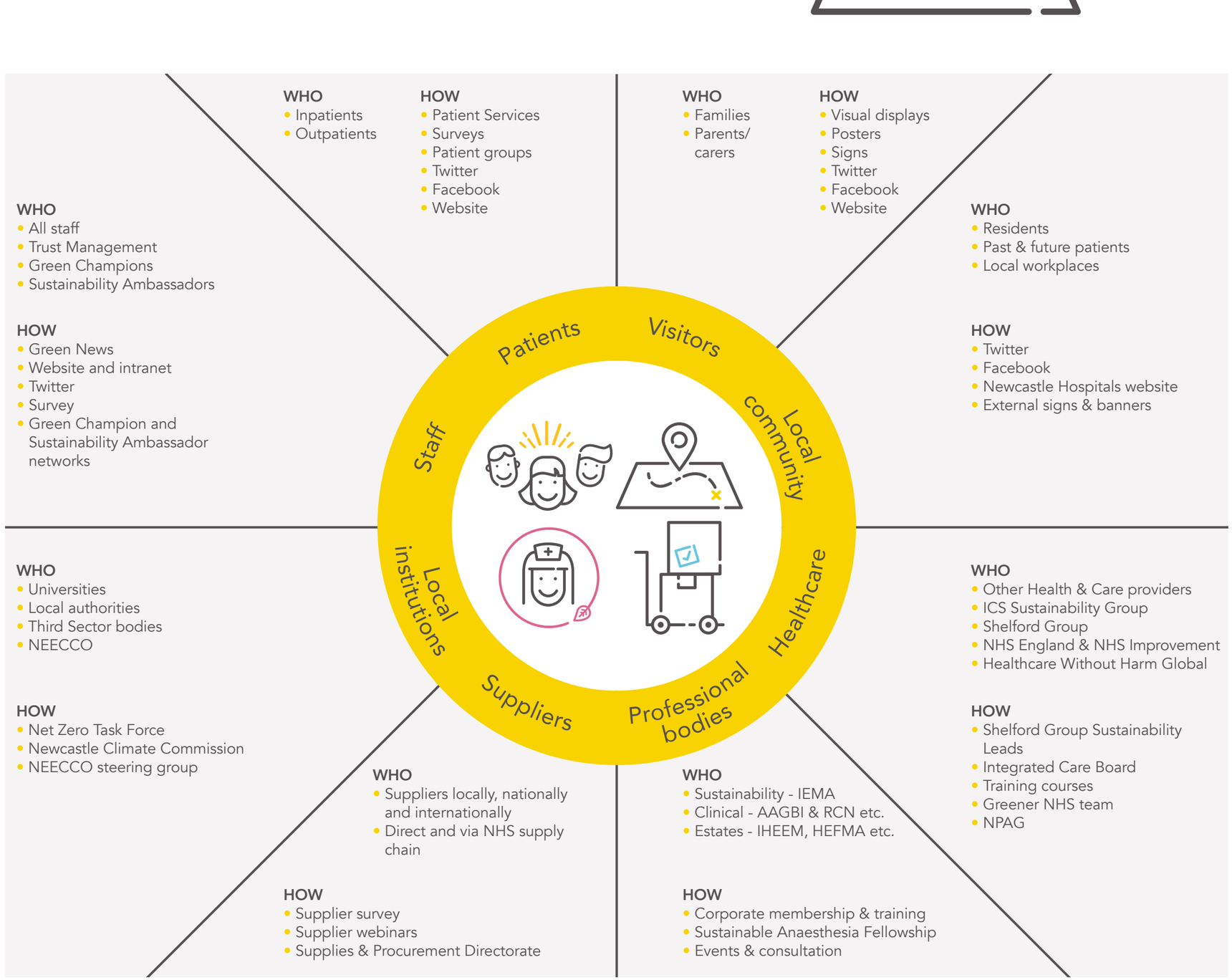
Are you aware of the sustainability work of the Trust?



STAKEHOLDER ENGAGEMENT

As well as engaging with our staff we have carried out the following stakeholder engagement activities this year:

- Attended the APEX (Advising on the Patient Experience) patient group meeting to present our Climate Emergency Strategy and listened to the feedback that patients and service users would like to hear about our plans and progress, which will now be shared via an external facing webpage as part of the new Newcastle Hospitals Flourish website
- Invited service users to comment on our Climate Emergency Strategy via twitter and included their voice in our video for COP26 Newcastle Hospitals and COP26 - YouTube



- Continued our supplier engagement programme (see procurement section for more details and case study)
- Commenced development of external facing web content to allow us to keep service users, visitors, suppliers, other healthcare organisations, and members of the local community updated with our plans, progress, news and case studies on a regular basis. These pages will also include a survey inviting feedback.

4. Leadership, partnerships and collaboration

4.1 City

NEWCASTLE CITY LOW CARBON HEAT NETWORK

The vast majority of the carbon emissions within our control come from the heat and power needs of our buildings. Our hospital energy centres currently use fossil fuel gas to generate our heat and power. They are provided on outsourced contracts until 2027. In order to maximise our chances of switching to renewable forms of heat and power we are collaborating with other anchor institutions in the city (council, universities and college group) to implement an innovative low carbon heat network that will take advantage of mine water and ground source heat. We have pooled investment to fund a detailed techno-economic study to design a scheme that will benefit our largest organisations in the city and provide future connections for homes and businesses.

4.2 Region

NORTH EAST & NORTH CUMBRIA (NENC) INTEGRATED CARE SYSTEM (ICS)

Following the 2022 'Delivering a Net Zero NHS'[2] report, all NHS Trusts were asked to produce a strategy in the form of a 'Green Plan' by Jan 2022 to outline how they plan to work towards NetZero, and all ICS's by end of March 2022. Newcastle Hospitals has led on delivering the ICS Green Plan for the NENC, with James Dixon (Associate Director – Sustainability) also the ICS Lead for Sustainability.

The ICS Green Plan seeks to support the members and acknowledges that Trusts within the ICS are all at varying stages of their sustainability journey. Working collaboratively will ensure faster progress towards the 2030 vision to be 'England's Greenest region'. The ICS Green Plan was approved in Feb 2022, with official launch planned for July.

As an enabler to meet the vision and align our ambition with climate science and the majority of Local Authorities in the region, the ICS and its members will have to cut their carbon footprint at a faster rate than the NHS national targets of 2040/2045. To secure this level of ambition it is proposed that the ICS will publicly declare a Climate Emergency, on launch of the plan, and commit to fast-track the decarbonisation of our regional healthcare services. For context, both Greater Manchester Health & Social Care Partnership ('ICS') and Cornwall & Isles of Scilly ICS have already publicly declared a climate emergency cementing their leadership position.

In mid-January 2022, we increased the capacity for ICS sustainability action with the appointment of our first full-time NENC ICS Senior Net Zero Programme Manager. This substantive role is funded by the NHS England & NHS Improvement (NHSEI) Greener NHS programme which aims to increase capacity for delivery within regions. The role has been seconded into Newcastle Hospitals though supports all ICS members to collaborate and deliver their green plan ambitions.

INTEGRATED CARE FOR CLEAN AIR

Poor air quality in the UK is an increasing health concern and is adding to the burden on the NHS. Approximately 30% of preventable deaths in England are due to non-communicable diseases specifically connected to air pollution. Unless air quality is improved, the health and social care costs of air pollution in England could reach £18.6 billion by 2035.

The North East of England currently has the poorest health in the country, with significant levels of health inequalities stemming from the burden of historically industrial jobs. These industries have had a lasting impact in this region, resulting in sustained cardiovascular and respiratory issues, which are still felt today. Consequently, the North East also has more attributable deaths to air pollution per 100,000 people than London, despite London having considerably worse pollution.

Newcastle Hospitals, Global Action Plan (GAP) and Boehringer Ingelheim (BI) have come together to drive forward the development of the Integrated Care for Cleaner Air initiative. With the ambition to demonstrate how air pollution can be tackled at an ICS level by providing relevant sustainability and healthcare leaders with an Integrated Care Clean Air Framework for change.

A report 'Tackling Air Pollution across the North East & North Cumbria – Understanding the Levers for Change' was produced and published, as well as an ICS Clean Air Framework[3] to guide action at the regional level.

4.3 National

We continue to share our work and collaborate with other partners across the country. This includes co-chairing the Shelford Group's Sustainability Leads sub-group, attending the NHSEI Medicines Sustainability Board as a system representative, hosting the UK's Sustainable Anaesthesia Fellow and actively contributing to the National Performance Advisory Groups for Sustainability Leads, Waste Managers and Active & Sustainable Travel.

4.4 International

Whilst the NHS has adopted a net zero leadership position, it still only represents 5% of global health sector carbon emissions. Given the global nature of healthcare supply chains it will require other national health systems to adopt ambitious climate goals if we are to rapidly reduce the embodied carbon in the medicines, equipment and services we procure. With this goal in mind, our CEO Dame Jackie Daniel and our Associate Director – Sustainability James Dixon attended COP26 in Glasgow, along with the Greener NHS and World Health Organisation teams, to stimulate collective action on planetary health for human health. Whilst Dame Jackie made the return journey via a fully electric vehicle, James cycled from London to Glasgow along with health professionals from children's hospitals across the UK as part of Ride for Their Lives. James was joined by Teri Bayliss, our Charities Director, and Dr Mike McKean, a consultant paediatrician from our Great North Children's Hospital. One of the few successes to come out of COP26 was the formal commitment by over 50 countries committing to build climate resilient and low carbon health systems.

In a follow-up to COP26 in March, James joined NHS England's Chief Sustainability Officer Nick Watts for bilateral events at the British Embassy in Madrid. With the goal of sharing our NHS experience to help the Spanish ministry of health, regional health.

5. Key Action Areas

This section explores the progress made in each of our Shine action areas which feed into our three Climate Emergency Strategy goals, and the plans for next year and beyond.

Following the 2022 'Delivering a Net Zero NHS' report, all NHS Trusts were asked to produce a strategy in the form of a Green Plan by January 2022 to outline how they plan to work towards Net Zero. As our Climate Emergency Strategy was published in the last two years, we were not required to produce a new green plan, however the guidance for producing a green plan included core chapters which are: workforce and system leadership, sustainable models of care, digital transformation, travel and transport, estates and facilities, medicines, supply chain and procurement, food and nutrition, and adaptation.

We have mapped action across these areas within our existing eight Shine themes.

Energy
Minimise energy use and replace fossil fuels with zero carbon energy sources

Water
Minimise water use

Waste
Dispose of less, reuse and recycle more

Buildings & Land
Provide healthy, sustainable and biodiverse spaces

Journeys
Embed active, clean, low carbon travel

Procurement
Work with our supply chain to decarbonise

Care
Develop low carbon care pathways adapted to our changing climate

People
Inspire, inform and empower our people to deliver sustainable healthcare

5.1 Energy & Water

AIM

Reduce carbon emissions from energy use, in line with science informed budgets, to be on track for net zero by 2030:

- Use less energy.
- Replace fossil fuels with low and zero carbon energy sources.
- Investigate options to offset, or inset, our residual carbon emissions.

AIM

Minimise water use in our buildings:

- Eliminate wasted water.
- Increase water efficiency.

Carbon emissions from building energy use increased by 4,660 tonnes in 2021/22

PERFORMANCE

- Carbon emissions from building energy use **increased by 4,660 tonnes in 2021/22** which is 2,567 tCO_2e above the baseline year.
- 69% of this increase is due to increased use of fossil fuels, both directly (scope 1) and indirectly (scope 3 – well to tank emissions).
- Overall gas use for heating increased despite milder outside air temperatures
- Overall electricity demand increased by 5% at the RVI and 3% at the Freeman. This led to more Combined Heat and Power (CHP) electricity generation and grid electricity imports to these sites .
- Demand for electricity increased the most at our community sites. This is mostly attributable to a full year of operation of Integrated Covid Hub North East (ICHNE) Labs and a 20% increase in electricity use at Regent Point.

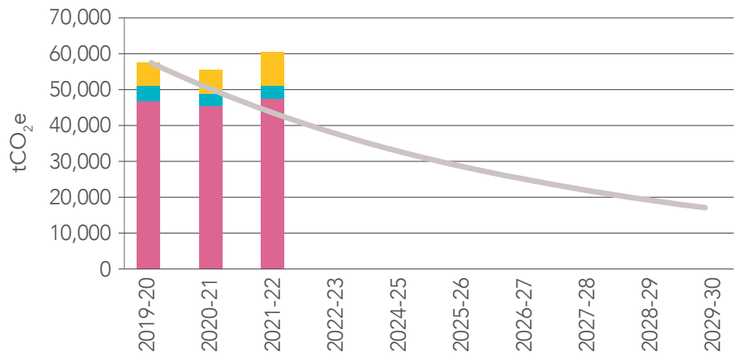


Fig 8: Total carbon footprint from building energy use

- **When compared against the Trust carbon budget for energy emissions, our performance is moving further away from our 12.8% annual reduction pathway towards net zero by 2030**.
- **Carbon emission from water use and treatment have reduced by 57% in 2021/22 compared to the previous year.** This reduction is entirely due to revised carbon conversion factors that are published nationally and applied to actual consumption data for our sites. Historically these figures remained constant but for reporting year 2021/22 the carbon intensity of water supply fell by 57% and the carbon intensity of water treatment fell by 62%.

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- We are going into 2022/23 more informed than ever before, following a number of feasibility studies completed this year. These included
  - o grant-funded heat decarbonisation plans,
  - o a de-steaming feasibility study for the RVI,
  - o building fabric assessments,
  - o energy audits of the Dental Hospital and Claremont Wing,
  - o a feasibility assessment to retire a CHP engine at Freeman early and option to de-steam and introduce onsite renewables generation.
- Work with city and regional partners has increased, particularly around progressing a feasibility study for a city-wide low carbon heat network
- Early discussions have taken place with Northern Powergrid about increasing grid electricity supplies to our sites to support the future electrification of heat.
- Given the energy markets context, we are in a very fortunate position with prices protected for the next two financial years. This will be the cheapest energy we will ever benefit from and provides added incentive to maximise demand reduction (that will also deliver carbon savings) in the short term to prevent a price shock in 2024.
- Strategic Estates Decarbonisation Group is now established and plays a key role in steering the transformational change required to deliver these ambitious carbon reduction objectives
- Decommissioning of the central steam boiler house at CAV (Centre for Aging and Vitality) and installation of smaller, more efficient plant to serve the remaining occupied space at the site.

PLANS FOR THE NEXT YEAR

- Prioritise decarbonisation projects based on the learning from the feasibility studies outlined above
- Agree an LED rollout programme to achieve 95% or more coverage by 2025
- Improve energy optimisation through Building Management System (BMS) projects and management practices
- Prepare for and submit an ambitious Public Sector Decarbonisation Scheme (PSDS) grant application
- Develop and feed in decarbonisation investment opportunities for the Estates capital programme
- Further infrastructure decarbonisation feasibility studies including PV feasibility assessments for example
- Support Newcastle Heat Networks to advance city heat network plans
- Investigate the potential for innovative zero-carbon procurement options such as Power Purchase Agreements (PPAs)
- Improve engagement on decarbonising the estate both within the Estates Directorate and Trust wide.

⚠ RED FLAGS!

- To establish a credible pathway to net zero carbon, rapid reductions beyond the carbon budget need to be made as soon as possible
- We do not have a defined or resourced plan in place that reflects the transformational change required
- The current financial landscape doesn't allow the NHS to reach Net Zero. The PSDS is a competitive programme and the whole public sector needs to reach Net Zero.
- The NHS Capital Departmental Expenditure Limit (CDEL) means it is not possible to make the investment required as an organisation

WHAT DO OUR STAFF THINK?

"The Trust is doing great work in its efforts to become more sustainable, however I do feel there is much more we can do, I often see lights on in areas of the hospital that are vacant, installing more motion detectors would save the Trust a great deal of money and reduce our carbon footprint tremendously."

"I would like to hear more about the bigger actions which presumably must be happening behind the scenes, e.g. sustainable energy sources."

"I think that we must try to be more sustainable, without compromising safety. Changing lighting to LED, having more effective heating, sourcing energy from carbon neutral sources etc."

CASE STUDY: Freeman Hospital LED lighting upgrade

The central lobby areas in the Freeman Hospital require lighting switched on for most of the year. These lights use up a lot of energy but are necessary for patients and staff to access most areas. Although a single light fitting does not use a lot of energy, the number of lights used in total means that lighting these central areas uses a significant amount of energy.

In his role as the Electrical Specialist Engineering Supervisor, Ian Hartley identified that the light fittings around the hospital were approaching the end of their life and could be upgraded. His idea was to source an improved light fitting and replace all the lights in the central areas of the hospital. He made sure the replacements were more sustainable and in line with the Net Zero Carbon goals the Trust has set. Ian then led the project to survey all the lights in the central areas. He then also led the project to install these new LED lights across the Freeman Hospital.

The Freeman Hospital now has these LED light fittings installed in every central area across the site, with around 300 lights replaced. These new light fittings not only use less energy, but are also brighter, meaning the overall number of lights has been reduced.

With the new lights fitted, the amount of energy used in central areas has decreased by 60%. Due to the energy savings, these lights save more than 55 Tonnes of CO_2e every year, the same as driving over 150,000 miles in a diesel car! This project has achieved 1% of the carbon reduction goals of the trust.

Since completing this project, Ian has already started improving the lighting in other areas and departments across the site, with the intention of upgrading every light in the hospital.

5.2 Journeys

AIM

Embed active, clean and low carbon travel to improve air quality and reduce carbon emissions from journeys:

- Reduce air pollution and carbon emissions from our owned and commissioned transport operations
- Use our influence to help fast-track the decarbonisation of transport in our supply chain
- Increase the proportion of people accessing our sites by active and sustainable travel methods
- Provide more care closer to, or at, home

Almost the entire global population (99%) breathes air that exceeds World Health Organisation (WHO) air quality limits, and threatens their health.

Almost the entire global population (99%) breathes air that exceeds World Health Organisation (WHO) air quality limits, and threatens their health.

A constant stream of new studies show how damaging air pollution can be, impacting everything from increasing the risk of autism and dementia to premature births. Just last year, the WHO revised its guidelines on safe air pollution levels, saying the health risks are greater than previously thought.

As a result of this dramatic risk to health, the WHO estimates air pollution is responsible for around 4.2 million deaths every single year. In the UK, there are approximately 40,000 excess deaths per year due to poor air quality.

PERFORMANCE

- This year we have seen a **30% reduction in carbon emissions** related to business travel, and a 62% reduction compared to the baseline year.
- A significant proportion of this decrease is related to a **reduction in business travel by air and rail** following the implementation of COVID-19 restrictions.
- Courier and taxi related emissions have also decreased this year, due in part to a **move to lower emission vehicles**.
- There has been a slight increase in the percentage of staff travelling to work by car and slight decrease in the percentage using active travel following a significant change the year before.
- There has also been a small but **significant increase in the number of staff using electric vehicles or hybrids**.

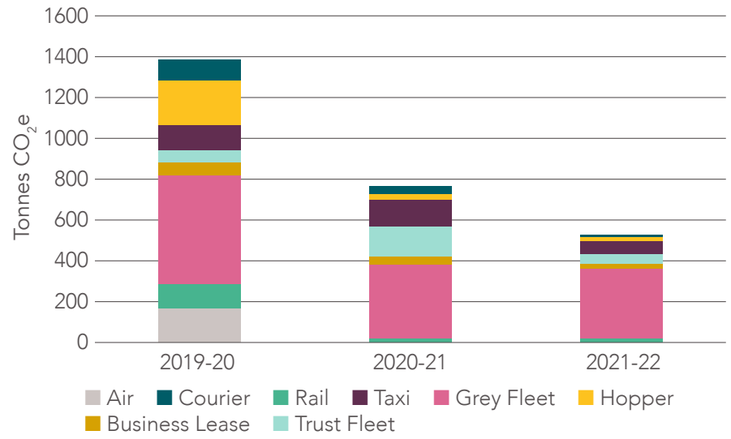


Fig 4: Total Annual Direct Carbon Emissions from Travel

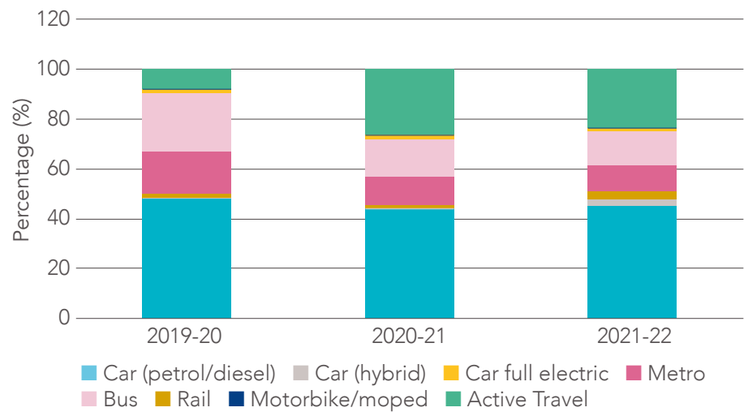


Fig 5: Staff commute modal split

This year we have seen a 30% reduction in carbon emissions related to business travel, and a 62% reduction compared to the baseline year.

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Installed Air Quality Monitoring kit, donated by Urban Observatory, on site at the RVI.
- Introduced a no idling policy
- Continued to expand our fleet of electric vehicles
- Held a digital healthcare workshop to support the transition to low carbon healthcare through the Digital Exemplar Strategy
- Established a new active transport group with representatives across the Trust
- Approved for charitable funding to create a cycle hub at RVI, Freeman Hospital and Regent Point, which will include access to pool bikes for staff
- Purchased Mobility Ways software to help create personalised travel plans for staff journeys to work.
- Hosted the 'Integrated Care for Clean Air (IC4CA)' Clean Air Manager in partnership with Global Action Plan (GAP) and Boerhinger Ingelheim (BI), to develop an Integrated Care System (ICS) Clean Air Framework and inspire action on clean air across the North East & North Cumbria region

PLANS FOR THE NEXT YEAR

- Appoint a PhD student to progress actions against the Clean Air Hospital Framework and evaluate the impact on local air quality
- Aim to achieve Gold standard on the Cycle Friendly Employer award – the international benchmark for active travel culture and infrastructure in the workplace.
- Provide improved information to patients, visitors and staff on active and sustainable travel options for accessing sites
- Lead on digital healthcare transition through Digital Exemplar Strategy
- Publish an active and sustainable travel plan on the intranet and internet
- Continue the transition of Trust vehicles to electric and improve access to electric bicycles
- Implement an EV charging strategy
- Improve facilities to encourage active travel to work, beginning with mapping existing shower, locker and changing facilities
- Increase the provision of secure cycle parking spaces
- Work with civic partners to improve cycling infrastructure outside our sites
- Work to reduce air pollution and carbon from commissioned transport, ensure new taxi contracts require 75% of vehicles to be ULEV or EV

⚠ RED FLAGS!

- Early results from the Air Quality Monitoring kit show that air quality at the RVI breached both UK and WHO guidelines. People visiting our hospital have no choice but to breathe poor quality air.
- Last year approximately 350,000 appointments were virtual, and a courier hub was established for home patient pharmacy deliveries – both actions that reduced travel related emissions by reducing patient travel and incorporating low carbon travel. Despite our best intentions to lock this saving into the delivery of care for the future, we have seen a significant slide back towards 'business as usual'
- There are barriers to the uptake of electric vehicles to the majority of people including the initial cost, the range, and the lack of adequate charging infrastructure across the UK.
- There is limited availability of power on site meaning we don't have the capacity to add a significant number of EV chargers, despite increasing demand.
- A Government mandate to provide free parking for NHS staff led to a modal shift back to cars.

WHAT DO OUR STAFF THINK?

"We are lucky to be in a city centre location with excellent public transport links. There are lots of warm words about green transport but it does feel like there isn't much active discouragement of car use."

"Better public transport for patients to attend clinic appointments. There is still priority given to car drivers and no incentive for staff members to take public transport/ car share if they only have to pay £2 a day for parking. Car drivers get rewarded by driving in (cheap parking) whilst people who walk or cycle have to suffer the car fumes."

"Better discounts for public transport"

"It is vital that large employers, such as this Trust make sustainable transport an easier choice for environmental as well as health reasons. I would happily support the Trust in any way to help this become a reality"

"One of the key barriers is the lack of facilities at the RVI for staff who cycle/run / active-transport to work. A lack of drying facilities is an issue."

"If people are to travel in by bike or running then we need adequate shower facilities. Please put your money where your mouth is!"

5.3 Waste

AIM

Generate less waste; reuse and recycle more, and ensure unavoidable waste is disposed of in the most sustainable way:

- Reduce the amount of waste we create by working and purchasing in more resource-efficient ways
- Increase the number of items we reuse with a focus on reducing single-use plastics
- Repair or reuse more items that can be repaired or reused
- Increase the amount of waste that we reuse or recycle to 35% of consigned waste by volume

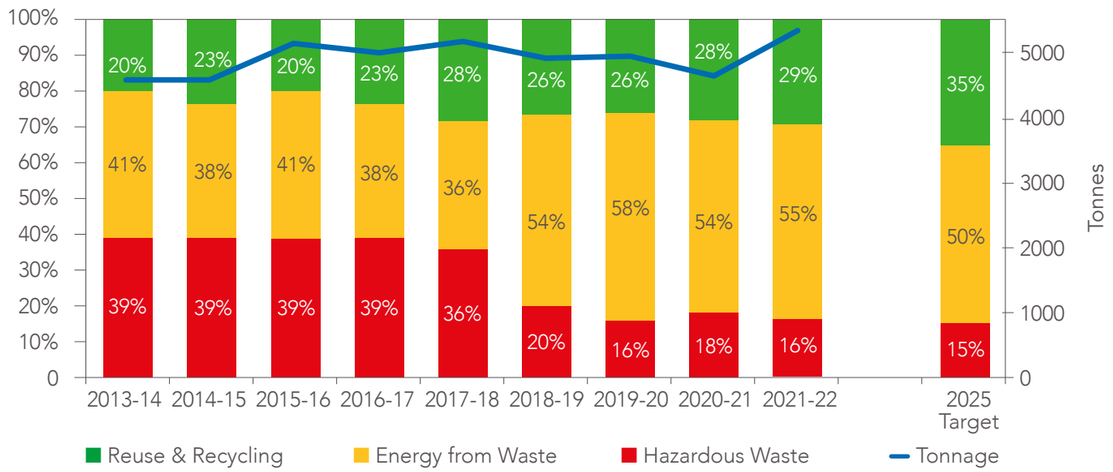


Fig 6: Annual waste performance (overall tonnage and percentage by waste outcome)

PERFORMANCE

As the Trust continued to respond to the pandemic, waste volumes increased in line with the demands involved with managing higher patient activity. **5325** tonnes of waste was handled and disposed in 2021-22, the highest volume we have recorded. It should be noted that figure includes waste arising from new services developed in response to the pandemic including the Integrated Covid Hub North East (ICHNE) testing laboratory, a number of vaccine centres, and dedicated cataract theatres). The volume increase also aligns with significant increases in patient activity in areas such as the Emergency Department. ICHNE alone accounted for approximately 10% of the Trust-wide volume last year.

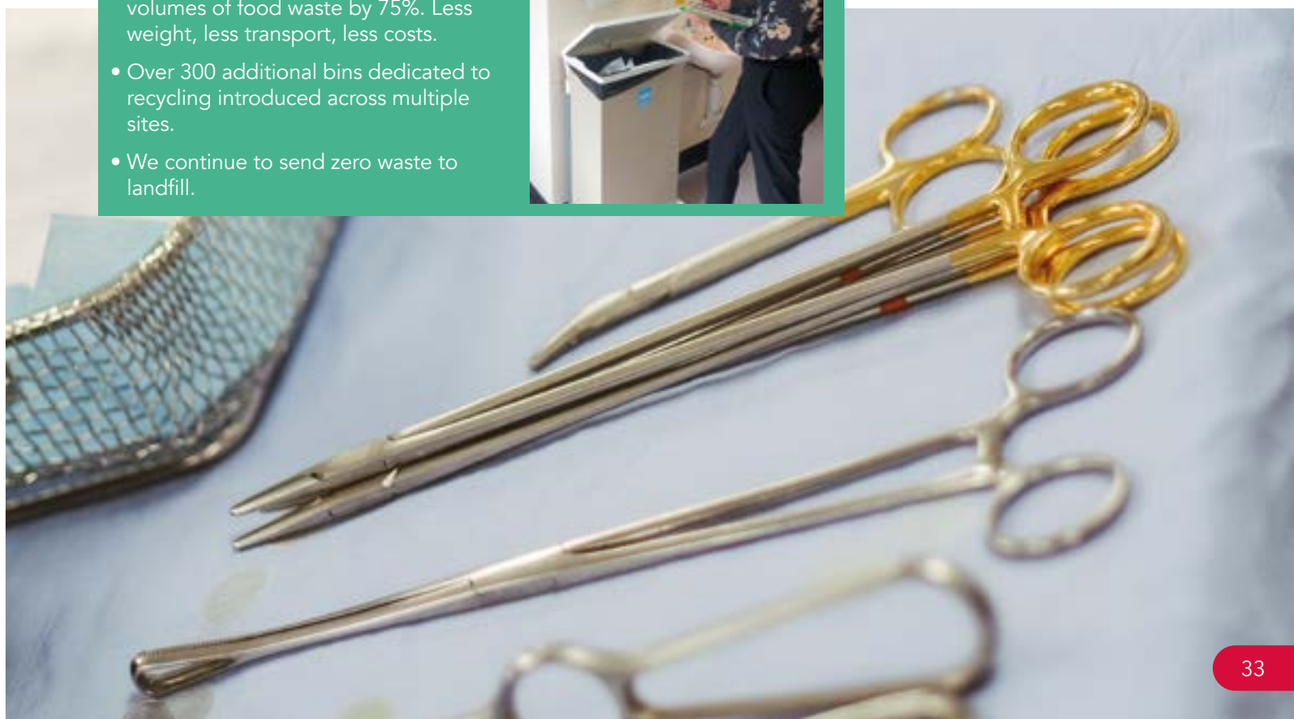
It is encouraging to note that the year-on-year increase in healthcare waste is largely non-infectious waste, an indication that both HTM 07/01 is being followed and that segregation is well understood.

Over 50% of non-healthcare waste was recycled across Trust sites.

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- An improved waste auditing process was implemented alongside new training materials.
- Less than 3% of waste was classified as requiring high temperature incineration. A reduction of more than half compared with 4 years ago – using less energy to treat our waste.
- Over 50% of non-healthcare waste was recycled across Trust sites
- ICHNE Labs – over 40% recycling achieved consisting of cardboard, packaging and hard plastics used in the Amplitude testing equipment.
- New and more appropriate waste classification adopted inside the ICHNE labs resulting in less than 15% of waste classified as hazardous waste. Reducing the amount of treatment our waste must go through.
- Metal instrument recycling provision in theatres has been improved and enhanced through additional engagement with our theatre teams, and by expanding the variety of items that can be recycled.
- A food waste dewatering system introduced into the RVI reducing the volumes of food waste by 75%. Less weight, less transport, less costs.
- Over 300 additional bins dedicated to recycling introduced across multiple sites.
- We continue to send zero waste to landfill.

Less than 3% of waste was classified as requiring high temperature incineration – meaning we are using less energy to treat our waste.



PLANS FOR THE NEXT YEAR

- To achieve one of our most significant and immediate targets for Zero Waste and moving waste up the Waste Hierarchy, efforts are being directed at reducing waste classified as requiring high temperature incineration - in particular sharps waste - which will result in inroads being made into this difficult to address waste stream.
  - o Initiatives are progressing with the trial of Needlesmart after successful trial at one of the vaccine centres. We are exploring opportunities for a wider roll-out.
  - o We will be working in partnership with our healthcare waste contractor to assess their sharps waste treatment and effluent retention systems. This will further divert waste away from incineration.
- With colleagues in Supplies & NHS Supply Chain, deeper investigation into data related to key product categories of single use plastic aimed at reducing consumption.
- Reduce single use plastic use in the key product categories identified above through projects such as our Gloves Off campaign.
- Collaborating with the ICS Waste Management Group on proposals for a regional furniture re-use system
- Staff training and understanding will be improved by:
  - o Embedding the Healthcare Waste Management Guide into local inductions
  - o Developing additional waste training and promoting to staff
- To develop a metric for measuring and reporting on re-use.

⚠ RED FLAGS!

Obstacles to achieving Zero waste by 2040

- In order to achieve the goal of Zero Waste whereby we "manage resources within the Circular Economy" the healthcare waste industry must adopt a more creative and challenging mindset, developing and establishing innovative solutions for 'difficult' healthcare waste streams that avoid the risks of landfill or high temperature incineration.
- The entire NHS supply chain must be challenged in regard to purchasing items made using fewer materials and packaging in order that single-use items become less commonly used and where plastics in particular are easily identified by polymer type and avenues for recycling readily available.
- The NHS must adopt a Circular Economy approach that quickly moves away from the purchase-use-dispose attitude towards reusability and all that entails: reuse; refurbishment; repair; recovery; repurpose; revitalise; refresh before recycling is even a consideration!

CASE STUDY: Integrated COVID Hub Northeast (ICHNE) Waste Segregation and Disposal Procedure

Feedback from other laboratories across the country suggested that most waste from labs handling Covid samples was being treated as hazardous waste and being sent for either heat treatment or clinical waste incineration. Analysis of the waste arising from the processes that would be followed at the ICHNE labs indicated that the majority of waste would in fact be largely non-hazardous and most of it would not require any form of specialist treatment. Additionally, a significant decision aimed at waste prevention was made very early in the lab creation process with the decision to utilise reusable and launderable lab coats instead of disposables. The waste and associated costs avoided in that single decision was considerable.

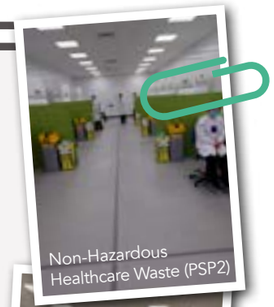
The labs opened in spring 2021 with systems in place to capture:

- Cardboard packaging
- Plastic packaging and hard plastics involved in lab processes
- A non-hazardous healthcare waste stream containing non-hazardous chemicals (almost 40% of the entire waste from the labs).

Non-Hazardous Waste in Laboratory Area

Net results:

- Over 460 tonnes of waste generated over 12 months. Approximately 10% of Trust waste.
- 138 tonnes of cardboard baled and recycled representing 30% of the entire laboratory's waste. A further 10% of waste was classified as dry mixed recycling.
- Less than 15% of lab waste classified as hazardous/infectious.



Non-Hazardous Healthcare Waste (PSP2)

Hazardous Healthcare Waste (PSP1)

Waste Segregation in Action

WHAT DO OUR STAFF THINK?

"Single use plastic needs to go"

"I find the consumption of PPE related plastics and wipes really upsetting."

"We use far too many consumables and throw away plastics"

"The amount of plastic that is used (and can't be recycled) is obscene."

5.4 Procurement

AIM

Embed sustainability and support for climate emergency action into all purchasing decisions, working towards a net zero carbon supply chain:

- Consume less
- Embed carbon reduction into our procurement processes
- Establish positive relationships with key suppliers
- Engage in research and innovation in order to reduce impact across whole value chain
- Improve confidence in our supply chain carbon data
- Invest more in our local supply chain
- Increase the amount of sustainable, local, healthy food available to staff, patients and visitors

PERFORMANCE

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- We have created a Sustainable Procurement working group to progress action on the measurement and reduction of the carbon footprint from our supply chain. The group meets monthly, and members have completed sustainability training to increase carbon literacy and sustainable procurement awareness in procurement team.
- As Government and Central NHS E&I drivers mandate the assessment of Social Value in the procurement process, we are working to build this into procurement processes.
- Newcastle Hospitals were the first Acute Trust in county to achieve CIPS Ethical Procurement Mark

- We have developed a Sustainability Partnership award winning five-step process to proactively engage and support all suppliers, from the smallest to largest (see case study).
- We have maintained our Meat Free Mondays and have engaged with our dieticians and catering team to begin the process of implementing the Silver Food for Life standard.

⚠ RED FLAGS!

- The existing method for calculating the 'carbon footprint plus' which includes our supply chain does not allow us to achieve net zero.
- Zero waste thinking is not integral to the supply of products, for example minimum order sizes and unnecessary packaging. Excess products are often disposed of by departments due to expiry dates when only a small number of an item is required.

PLANS FOR THE NEXT YEAR

- Continue to proactively engage with suppliers through the 5 step framework (see case study), and increase the proportion of our carbon footprint plus that is based on actual data, by engaging 10% of our suppliers on step 3 of the framework.
- Launch supplier webpage with guidance and support for suppliers keen to progress to Net Zero Carbon
- Focus action on supplier engagement on carbon hotspots such as medicines and construction.
- Introduce a requirement within contracts for key suppliers to commit to take action on the climate emergency
- Establish opportunities to embed sustainability and climate action into processes and procedures.
- Adopt the Government's Social Value Model meaning all NHS tenders must include an assessment of how suppliers will contribute the Net Zero targets and social value

Our aim is to engage in research and innovation in order to reduce impact across whole value chain.

CASE STUDY: Improve confidence in our supply chain carbon data, focus on hotspot and collaborate for Net Zero by 2040

Supply chain activities were estimated to account for at least 65% of the Trust's emissions. This existing method involves estimating emissions based on eclass spend codes. This approach is problematic as the factors are many years old and do not reflect any efforts by individual suppliers to reduce emissions. The approach also makes it difficult to track progress towards Net Zero as the results are dependent on overall spend (which may in fact increase). To make meaningful progress, suppliers needed to be engaged and empowered to take real steps to measure, monitor and reduce their carbon. Supply chain relationships needed to be maintained and cost barriers tackled. The solution needed to provide a seamless link that would enable the Trust to efficiently monitor progress towards Net Zero

Newcastle Hospitals developed a Sustainability Partnership award winning five-step process to proactively engage and support all suppliers, from the smallest to largest.

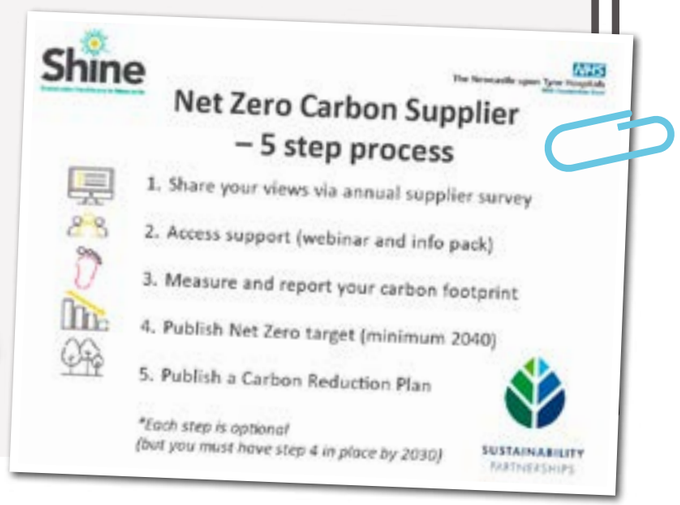
This enables us to expand reporting and action beyond our own organisational carbon footprint and collaborate with supply chain members to improve the accuracy of our supply chain carbon emissions data and focus action on carbon hotspots.

Suppliers are requested to report and reduce their organisational emissions to Net Zero by 2040. Suppliers are requested to report their carbon performance via a free reporting platform, alongside turnover and value of sales. The SmartCarbon platform then pulls a representative proportion of these results into Scope 3 category 1 – purchased goods and services to complement the existing spend code methodology to produce a hybrid result.

The framework has been designed to support meet the recommendations of the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard as well as support requirements within the NHS England & NHS Improvement (NHS E&I) Net Zero Supplier Roadmap and Evergreen Framework and the Government Social Value Model, PPN 0620, PPN 0621.

We are now in the second year of this programme; more than 500 suppliers have engaged with encouraging feedback. Suppliers include; Johnson and Johnson, Drager, Sharpsmart, Vanguard, NHS BT, NE1 logistics, Z Move, Potts Print UK.

- In Step 1 we listened to supplier views via an annual questionnaire, and we are encouraged by the volume of responses and that 98% of respondents support our Net Zero goal.
- In Step 2 we provided a support package of information and webinars to raise awareness and engage suppliers in our net zero journey.
- In Step 3 we ask suppliers to measure their footprint and report the results to us, this data is used to estimate our scope 3 supply chain emissions more accurately.
- In Step 4 we require suppliers to publish Net Zero targets aligned with Newcastle Hospital's 2040 ambition.
- In Step 5 we encourage suppliers publish a carbon reduction plan to reduce their footprints, in line with the Net Zero by 2040 target.



More info:
Sustainability-Showcase-SmartCarbon-Calculator.pdf (ahsn-nenc.org.uk)

STEP 1 FEEDBACK

"We are keen to commit to our Net Zero journey but would welcome further guidance on how to achieve our goals."

"I am fully supportive of the NHS net zero targets. However, as an SME I would welcome information and support regarding how we can reach net zero by 2030."

"As a small business, we would welcome advice and support."

STEP 2 FEEDBACK

"Really enjoyed the webinar and net zero carbon will positively impact on my sector so that is encouraging from a business point of view but going forward this is mega important for the next generation!"

"Thank you for taking a positive stance on this issue."

"As any sensible occupant of this planet is doing, we are committed to doing all we can to reduce our impact on it."

STEP 3 FEEDBACK

"The process of reporting our footprint data via SmartCarbon was straight forward and the steps were simple to follow. As we have already mapped our footprint data, we just referenced this when uploading it to the Smart Carbon platform. The platform was easy to use and navigate and was a quick process to complete."

"More needs to be done about stores of equipment etc, and a tighter hold on having less waste due to poor training on ordering of goods… It's criminal the amount of waste that goes on in the NHS."

"All lip service. While Trust continues to source drugs and single use equipment often made from and triple packed in plastic and insists on use of surgical masks and gloves without a thought for the impact on nature and wildlife of inappropriately discarded items of PPE. The streets surrounding the hospitals, their grounds and walkways are strewn with the litter caused by its policies, on site franchises and Trust procurement choices."

"Where possible we could be more mindful of the packaging and frequency of use of single use items. Cheaper products are not always the best for the environment e.g. recent plastic aprons have been very thin and 2 in every 3 has been unusable which has a huge impact on the environment."

"The amount of medical plastic packaging and items that are thrown away is a serious problem. There should be more pressure on medical companies to provide more sustainable alternatives and reduced waste / plastic packaging etc."

"A major hurdle is big business who design expensive kit to have planned obsolescence where it becomes incompatible with upgrades. Thus, perfectly usable kit has to be replaced. Also, they drive profits with single use equipment. The Shelford Group and Dame Jackie should lobby the government to legislate against poorly recyclable single use kit. COVID has shown that we can use a single vial to treat multiple patients e.g. Pfizer vaccine. We must stop binning perfectly good medication because only a small part of it has been used for one patient, when the rest could be used for another."

5.5 Models of Care

AIM

Develop low carbon care pathways adapted to our changing climate:

- Engage in research and innovation in order to lower carbon across our care pathways
- Lead on the systematic reduction of anaesthetic gas environmental impact across all care pathways
- Collaborate to reduce the carbon footprint of respiratory care through a detailed review of inhaler prescription and use
- Empower our clinicians to improve the sustainability of their models of care
- As Desflurane and Nitrous Oxide have been removed at our Freeman Hospital this year, reductions in their use have continued to be seen.

PERFORMANCE

- This year there has been a 32% increase in carbon emissions related to inhaler prescribing compared to last year. Overall, there has been an almost 5% reduction compared to the baseline year.
- The reduction seen last year was largely attributed to the pandemic, and the majority of inhaler prescribing was carried out in primary care settings i.e. GPs.
- Carbon emissions related to the use of anaesthetic gases has plateaued this year following a 23% reduction last year compared to baseline.
- Any reduction seen as a result of capture and cracking technology (see case study) will not be seen in this data, as the calculations are based on the amount of Nitrous Oxide and Entonox consumed. In future reports as the technology becomes more widespread, we will need to measure and deduct any savings.
- As Desflurane has been removed at the Freeman Hospital this year, reductions in its use have continued to be seen.

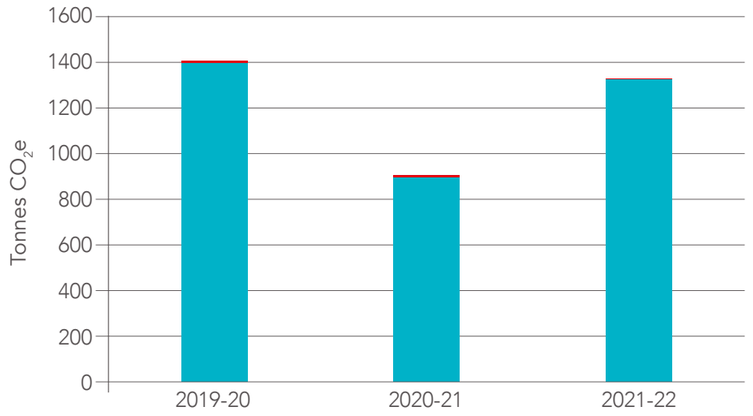


Fig 7: Total Carbon Footprint related to Inhalers

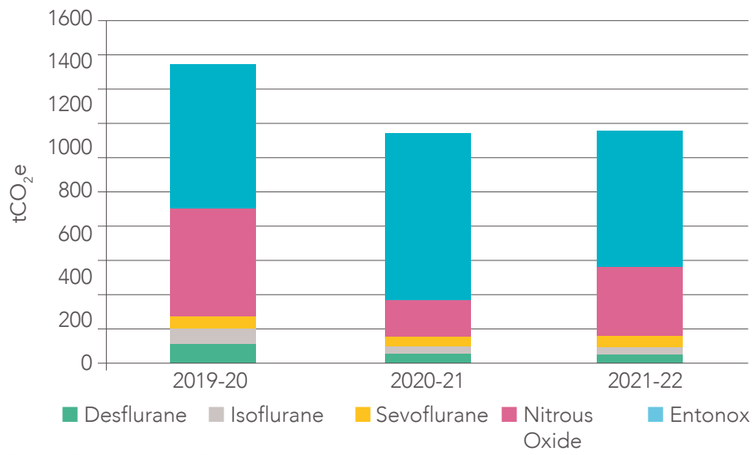


Fig 8: Total Carbon Footprint related to anaesthetic gas use

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Baby Rosie was the first baby born in the UK using climate friendly gas and air. This means that the nitrous oxide that was exhaled by Rosie's mother during labour was captured and cracked into harmless nitrogen and oxygen, using a mobile destruction unit (MDU) on trial with Medclair (see case study).
- A multidisciplinary team undertook a revision of the North of Tyne, Gateshead and North Cumbria inhaler formulary, to reduce pMDI and increase DPI prescribing. DPIs are now first choice in each of the different inhaler classes.
- A SusQI project was initiated to improve inhaler technique amongst patients in two respiratory wards, with the aim of reducing the number of inhalers being used by patients.
- A SusQI toolkit and resources created to enable staff to deliver and measure sustainability in their QI projects

CASE STUDY:

Kaja Gersinska was the first person in the UK to use climate-friendly pain relief during labour after giving birth at the Royal Victoria Infirmary.

Entonox, also known as gas and air, is a mixture of nitrous oxide and oxygen and has been used to provide pain relief for women in labour for over a hundred years.

However, nitrous oxide is a powerful greenhouse gas, almost 300 times more potent than carbon dioxide, and escapes into the atmosphere after being exhaled by a patient.

Kaja gave birth to her beautiful daughter, Rosie Martha O'Sullivan, who weighed 6lb 6oz, in the Newcastle Birthing Centre and breathed the gas and air into a Mobile Destruction Unit (MDU) – a machine designed to collect and destroy residual nitrous oxide from exhaled gas and air.

"I feel very privileged and proud actually – it's the little things you don't often think about and it's nice that someone thought about making these changes which will be better for the environment and for midwives who are working here all the time.

"I didn't expect this when I came here today – I just came to have my baby – but I started on the traditional machine and then swapped over. It was quieter and much more comfortable to hold – it's nice to make a little bit of history!"

The technology, developed by Medclair, is widely used in Sweden and collects the exhaled nitrous oxide, a potent greenhouse gas, and 'cracks' it into nitrogen and oxygen which are harmless.

The MDU purifies 99.6% of the nitrous oxide entering the unit and as well having a huge benefit to the environment it also benefits staff by reducing the amount of nitrous oxide they are exposed to while they work.

Chris Allen, Sustainable Anaesthesia Fellow at Newcastle Hospitals said *"This is a really exciting day for the whole team involved in developing this project at Newcastle Hospitals. It has been a huge team effort including staff from maternity services and our sustainability and estates teams."*

"Rolling this technology out across our maternity unit can help us to continue to support women to use gas and air during labour, whilst making it as environmentally friendly as possible."

"We have an ambitious plan to become a global leader in sustainable healthcare delivery and introducing innovative technology like this can help us to achieve that."

Chief Executive of Medclair Jonas Lundh said: *"Working in the green medtech area I'm extremely impressed by the NHS Newcastle team, I've never seen such a display of action on the fact that there is a global climate crisis as we saw in Newcastle. We are delighted to be a supplier to the trust and we look forward to Rosie's generation being born in a climate friendly way."*

PLANS FOR THE NEXT YEAR

- Further MDUs will be used throughout Women's Services and a Central Destruction Unit will be installed to capture and crack nitrous oxide that is part of the piped network.
- Improve links between Newcastle Improvement and SusQI by embedding sustainability within the Improvement coaching skill set.
- Support teams with SusQI projects arising from the 10-step framework for Directorates (see People theme)
- Improve training and understanding of inhaler technique and device choice for respiratory nurses, doctors, pharmacists and other healthcare professionals.
- Recruit two Sustainability Fellows, one in Paediatric Medicine and one in Adult Oncology, to help deliver sustainability improvements to these important patient care pathways.

⚠ RED FLAGS!

- Sustainability is not embedded throughout clinical decision making. It is hard to see this happening without dedicated clinical resource due to many other priorities.
- Systemic barriers and conflicting requirements make it difficult to improve sustainability
- COVID-19 recovery focusses on increasing the amount of clinical activity. It is essential that we de-couple clinical activity from carbon emissions.

WHAT DO OUR STAFF THINK?

"There appears to be a lot of "speaking" but not a lot of action. We don't have clinical staff actively engaged. I am aware of an anaesthetic fellow, but why aren't we looking at engaging clinical staff, such as specialist nurses into roles that will directly influence clinical practice?"

"Very worried about the use of plastic which becomes clinical waste and hope the trust will invest in looking at sustainable, safe and less polluting alternatively to the hundreds of aprons and pairs of gloves I have to use every week to name a few items of many."

"In the past 18 months we have increased the consumption of single use items exponentially, even when there is no clear evidence that it makes the slightest difference to the transmissibility of COVID-19 (e.g. going back to polystyrene cups in staff rest areas, wearing disposable aprons for routine clinical chores, wearing disposable gloves for external examination of patients, paper rolls on examination couches as well as wiping down between patients). Someone needs to bring some common sense back because this must be creating a massive increase in our waste disposal."

"I am a registrar in interventional radiology, where we use a huge amount of single use equipment for every case. The amount of non-recyclable waste we generate is a big concern for me... I think there is a big opportunity to do this both in Newcastle and around the country."

"There should be more work to link up services for patients to help with sustainability- areas like less paper leaflets- sending documents electronically via email, text message for those patients who choose to receive documents digitally. Joining up appointments more frequently - so when patients attend outpatient services across the trust they are offered same day as standard - you have an outpatient appt at 12- dental at 2. etc. Patients being able to access care closer to home - not needing to come to RVI/FH for routine bloods for cancer treatment and patients on the border having to travel 100+ mile trips."

"Get rid of plastic medication pots which are used to dispense medication into to give to a patient!"

5.6 Buildings and Land

AIM

Provide healthy, sustainable and biodiverse spaces for patients, staff and visitors:

- Include opportunities for sustainability innovations in all new builds and refurbishments based on recognised standards.
- Build climate adaptation and resilience into our management of existing estate as well as all new builds and refurbishments.
- Expand our green space and enhance the biodiversity of our land.

Image provided by Medical Architecture

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Significant efforts continue to be made to embed low carbon design principles to ensure new buildings can achieve BREEAM Outstanding and are net zero in operation
- A Green the Grey project has been launched to implement staff ideas to maximise opportunities for green space creation and enhancing biodiversity
- Produced and began implementation of a Biodiversity Action Plan
- Renewed Grounds Maintenance Contract includes principles to support biodiversity on site
- Contributing to the North East & North Cumbria ICS Green Spaces Working Group

PLANS FOR THE NEXT YEAR

- Continue to target BREEAM outstanding and net zero in operation for new buildings and projects
- Implement the Green the Grey programme and establish Ismail's Garden (a place to play and grow for the Great North Children's Hospital)
- Encourage greater use of green and social prescribing

⚠ RED FLAGS!

- COVID-19 recovery pressures led to rapid decision making not aligned with our strategic net zero commitments. The Elective Day Treatment Centre under construction at the Freeman Hospital is being connected to existing fossil fuel networks for power.
- There has also been an associated loss of biodiversity. The annual biodiversity metric reported a 5% loss in biodiversity at the Freeman Hospital. This reflects a loss in grassland and a small number of trees.

"Investment into a sustainable estate and sustainable procurement needs to be of prime importance. Funding required to enable the Estates Department to reduce carbon footprint and be a leader amongst other NHS institutions. Financial savings should be seen as a by-product. This should be seen as a preventative measure not a reactive one. Positive discrimination towards local suppliers and contractors must be considered in order to reduce the embodied carbon within our procured services. Not only is this more sustainable, it would have untold benefits to the local economy."

5.7 People

AIM

Inspire, inform and empower our people to deliver sustainable healthcare:

- Embed Shine and climate emergency action into the culture of our organisation, demonstrated in staff behaviours.
- Upskill our workforce and ensure capacity to address the climate emergency.
- Empower our people to make the most sustainable choice.
- Extend our reach to influence action amongst our wider stakeholders, including patients.

PERFORMANCE

- 23 Green Champions Plus
- 328 Green Champions
- 7 new Sustainability Ambassadors
- Over 1,000 staff signed up to Shine Rewards, undertaking over 50,000 actions
- 6 Climate Emergency Action Fund projects approved
- 1,275 @sustainableNUTH Twitter followers
- 99% of staff think sustainability is important

Our aim is to empower our people to make the most sustainable choice.

ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Developed Climate Emergency for Managers training to add to the programme developed last year and delivered to 17 managers across 12 departments.
- Supported Directorates to embed sustainability into their culture by creating 'What Good Looks Like – Model for Sustainability in Directorates' which incorporates a 10 step framework, and started working with 8 directorates (see case study)
- Established Green Champions Plus – a network of trained Green Champions empowered to take action in their areas of work
- Increased the number of Sustainability Ambassadors to 16 across 12 departments.
- Further embedding sustainability into HR processes through the HR working group
- Delivered climate education to our Board of Directors and Trust Management Group

PLANS FOR THE NEXT YEAR

- Promote the 10-step framework to department and directorate managers and support teams with to identify, implement and measure sustainability projects
- Embed the framework into Departmental Strategy reviews and QPR reports
- Improve accessibility to progress, plans, case studies, etc though development of Shine web page
- Ensure communications about the journey to Net Zero Carbon Estate improve so that staff and stakeholders are informed about our plans and progress
- Increase the number of Green Champions Plus and ensure a good number of departments have at least one.
- Train additional Sustainability Ambassadors and ensure they are spread throughout departments.
- Embed sustainability into appraisals and Personal Leadership Behaviours

CASE STUDY: Embedding Sustainability in Directorates

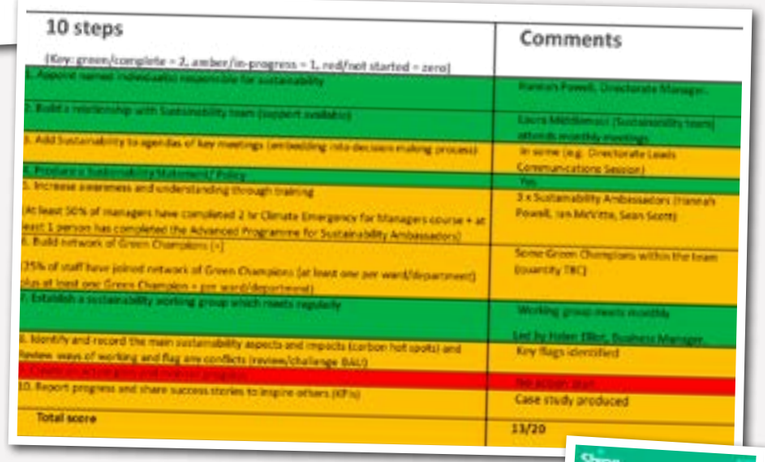
There is a Trust breakthrough objective to embed climate action and sustainability into our culture. In order to support this we have developed a 'What Good Looks Like – Model for Sustainability in a Directorate' and accompanying 10-step framework to provide a structure to support progress.

The guidance states that a model directorate would:

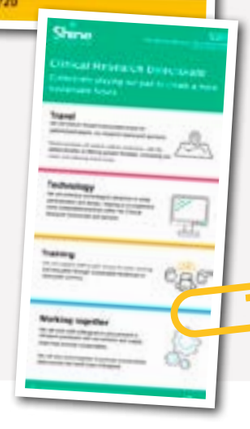
1. Produce a Sustainability Statement
2. Have a named individual responsible for sustainability and might have a sustainability working group which meets regularly to drive forward improvements
3. Identify and record the main sustainability impacts arising from its activities
4. Create an action plan and monitor progress towards the aims contained within it
5. Report progress and share success stories to inspire others

We suggest that to increase the chance of success these roles should be implemented within the directorate (see image)

The sustainability team offers support by providing training and support at each step of the framework. The example below shows how this has been used in practice with the Clinical Research Directorate and also demonstrates how we will be able to use this to measure progress against our aim to embed sustainability throughout the workforce.



10 steps (Key: green/complete = 2, amber/in-progress = 1, red/not started = zero)	Comments
1. Appoint named individual(s) responsible for sustainability	Hannah Powell, Directorate Manager
2. Build a relationship with Sustainability team (support available)	Laura Middlemiss (Sustainability team) attends monthly meetings
3. Add Sustainability to agendas of key meetings (embedding into decision making process)	In some (eg. Directorate Leads Communications Session)
4. Produce a Sustainability Statement / Policy	Yes
5. Increase awareness and understanding through training (At least 50% of managers have completed 2 hr Climate Emergency for Managers course + at least 1 person has completed the Advanced Programme for Sustainability Ambassadors)	3 x Sustainability Ambassadors (Hannah Powell, Ian McVittie, Sean Scott)
6. Build network of Green Champions (+) (35% of staff have joined network of Green Champions (at least one per ward/department) plus at least one Green Champion + per ward/department)	Some Green Champions within the team (quantity TBC)
7. Establish a sustainability working group which meets regularly	Working group meets monthly Led by Helen Elliot, Business Manager
8. Identify and record the main sustainability aspects and impacts (carbon hot spots) and review ways of working and flag any conflicts (review/challenge BAU)	Key flags identified
9. Create an action plan and monitor progress	No action plan
10. Report progress and share success stories to inspire others (KPIs)	Case study produced
Total score	13/20



The Clinical Research Directorate was one of the first to adopt this approach and is well on its way to embedding sustainability throughout.

They have produced a statement and infographic explaining their commitment towards the Trust's Climate Emergency Strategy goals to stakeholders such as patients & participants, sponsors, and suppliers; has a good level of sustainability knowledge with a number of Sustainability Ambassadors, Green Champions Plus and Green Champions; and has established a sustainability working group which has identified and is working towards sustainability improvements.

One such project is the introduction of new process to allow auditors to carry out remote monitoring visits and avoid unnecessary travel. This has been initiated but the results are not yet quantified. Their second project to introduce the use of tablets to reduce paper consumption is explained in the case study below.

CASE STUDY: Clinical Research Directorate - Sustainability case study

Towards the end of 2020, the clinical research directorate formed a working group to identify opportunities to reduce the environmental impact of research activities.

The group, led by staff with a passion for sustainability, has been working hard to consider changes to ways of working in support of the trust's climate emergency strategy.

As part of this work, research delivery teams working on orthopaedic and plastic surgery studies introduced the use of a Microsoft Surface Go 2 tablet to reduce the amount of paper used to recruit patients to clinical trials.

Typically, around 40 pieces of paper would be used to recruit a patient to one of the five studies the team is using the device for. 37 of these pieces of paper can be saved by using a surface tablet (92.5%).

The team has successfully used the tablets to recruit patients into studies on orthopaedic trauma wards who are often bedbound and waiting for surgery for broken bones. The tablet devices, which are less bulky and heavy than a laptop, allow patients to sign up to studies with more ease.

For staff, the devices offer a portable, streamlined way to recruit patients into studies and reduce the need for paperwork. Information is immediately available through a secure research database.

The team is making further paper savings by electronically recording other important medical information for the trial.

⚠ RED FLAGS!

- Unless dedicated resource or time is provided to already stretched and overburdened staff, sustainability will continue to be seen as an add-on to the existing work and priorities
- Without visible and large scale improvements to our carbon footprint, staff may become cynical about the level of impact they can have on our goals
- Regular Trust-wide communications on plans and progress are essential to ensure buy-in to the transformational change needed.

"Clinical staff need protected time to commit to projects or to know who the enablers are to help them, in similar way to improvement facilitators from Newcastle Improvement. That will require investment into new SusQI facilitator roles or merged roles with Newcastle Improvement. More awareness of projects being delivered will then hopefully encourage others."

"Lots of marketing, not much actual substance is what I see."

"It would be helpful to have reports on the sustainability and environmental impact of different aspects of clinical care within individual departments to raise awareness and to encourage improvement in these. For example electricity use, heating, patient transport cost, departmental travel cost. This would then stimulate positive changes."

"I would like to hear more about the bigger actions which presumably must be happening behind the scenes, e.g. to use sustainable energy sources. It's very nice to have Shine Rewards but it feels like a bit of a game, when I know that the Trust is using vast amounts of single use plastic all the time. So, maintain the focus on the actions of individual staff, but put them in the context of organisational use and show us that our efforts are worth it because the Trust itself is changing!"

6. Contact Details

This Annual Report has been produced by the Sustainability Team at Newcastle Hospitals but reflects work taking place across the Trust. All information contained within it is, to the best of our knowledge, accurate at the time of publishing.

If you wish to contact the Sustainability Team please email
nuth.environment@nhs.net

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You can follow us on Twitter: **@SustainableNUTH**

7. References & Acronyms

1 https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/

2 https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf

3 https://www.actionforcleanair.org.uk/health/ics-framework

4 100% of our purchased electricity is REGO (Renewable Energy Guarantees Origin) certified renewable sources.

5 Notes about methodology:

- Medicines, medical equipment and supply chain carbon emissions have been estimated using a spend code methodology. Further explanation on this method is available by contacting nuth.environment@nhs.net
- Newcastle Hospitals NHS Foundation Trust has adopted an operational control approach to establishing the boundary. The methodology adopted in line with the Greenhouse Gas Protocol1 and the BEIS Environmental Reporting Guidelines. The calculations were completed on the SmartCarbon™ Calculator using the latest UK Government emissions factors.
- CO_2e is the universal unit of measurement to indicate the global warming potential (GWP) of Greenhouse Gases (GHGs), expressed in terms of the GWP of one unit of carbon dioxide. There are seven main GHGs that contribute to climate change, as covered by the Kyoto Protocol: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3). Different activities emit different gases. Using CO_2e allows all greenhouse gases to be measured on a like-for-like basis.
- For National grid electricity consumption, Newcastle Hospitals NHS Foundation Trust has included factors for the transmission and distribution of electricity (T&D) losses, which occur between the power station and site(s). The emissions from T&D has been accounted for in Scope 3. As with other Scope 3 impacts, reporting T&D is voluntary but is recommended standard practice by UK Government.
- Well-to-tank (WTT) fuels conversion factors have been included to account for the upstream Scope 3 emissions associated with extraction, refining and transportation of the raw fuel sources to an organisation's site (or asset), prior to combustion. As with other Scope 3 impacts, reporting WTT is voluntary but is recommended standard practice by UK Government.
- A full SECR compliant report is available on request.

6 https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf

Glossary

BREEAM – Building Research Establishment Environmental Assessment Method used to assess, rate and certify the sustainability of buildings.

CDEL – Capital Departmental Expenditure Limit, a budget limit covering all capital spending by the NHS.

CHP – Combined Heat and Power, the production of electricity or power from a single source of energy, in this case gas.

CIPS ethical procurement mark – Chartered Institute of Procurement and Supply's ethical procurement mark publicly reinforces an organisations assurance to ethical sourcing and supplier management.

Climate emergency – A climate emergency declaration is action taken to acknowledge that humanity is in a climate emergency, and urgent action is required to reduce or halt climate change and avoid potentially irreversible damage resulting from it.

COP26 – COP26 was the moment countries revisited climate pledges made under the 2015 Paris Agreement. COP stands for Conference of the Parties and the one in Glasgow was the 26th annual summit.

DPI – Dry Powder Inhalers deliver medication to the lungs as you inhale through the device.

Flourish – Newcastle Hospitals' cornerstone programme to support all employees to liberate their potential at work and create the best NHS organisation possible.

Formulary – a list of medicines approved for use

Greenhouse gas protocol – global standardised framework to measure and manage greenhouse gas emissions.

HTM 07/01 – Health Technical Memoranda (HTMs) give comprehensive advice and guidance on the installation and operation of specialised building and engineering technology used in the delivery of healthcare. HTM 07/01 covers the safe management and disposal of healthcare waste.

Hybrid method – used to calculate emissions from purchased goods and services. Method uses a combination of supplier-specific activity data (where available) and secondary data to fill the gaps. This method involves collecting allocated scope 1 and scope 2 emission data directly from suppliers; and using secondary data to calculate upstream emissions wherever supplier-specific data is not available.

Needlesmart – device which heats sharps needles, sterilising the needle to be disposed of and melting it into a safe sphere.

NHS E&I Net Zero Supplier Roadmap & Evergreen Framework – NHS England and NHS Improvement (NHS E&I) work together as a single organisation. In September 2021 a supplier roadmap was approved to help suppliers align with the NHS net zero ambition. The Evergreen sustainable supplier assessment is the mechanism for suppliers to engage with the NHS on the requirements of the roadmap. https://www.england.nhs.uk/greenernhs/get-involved/suppliers/

pMDI – Pressurised metered-dose inhalers are a type of inhaler that uses a pressurised propellant in an aerosol chamber to deliver medicine to the lungs.

PPAs – a Power Purchase Agreement is an arrangement in which a third party developer installs, owns and operates an energy system on a customer's property. The customer then purchases the electrical output.

PPN 06/20 – Procurement Policy Note 06/20 (PPN06/20) applies to procurements covered by the Public Contracts Regulations 2015 and requires a minimum of a 10% weighting for social value questions.

PPN 06/21 – Public Procurement Notice 06/21 (PPN06/21) requires all companies and organisations who apply for central government contracts to demonstrate their alignment with the government's 2050 Net Zero goals.

PSDS – The Public Sector Decarbonisation Scheme (PSDS) provides grants for public sector bodies to fund heat decarbonisation and energy efficiency measures.

Shelford Group – The Shelford Group is a collaboration between ten of the largest teaching and research NHS hospital trusts in England.

Social Value Model – The Social Value Model sets out the government's social value priorities for procurement. It includes a menu of social value objectives for central government departments (and executive agencies and non-departmental public bodies) to select from and include in their procurement.

Spend-based method – used to calculate emissions from purchased goods and services. Method estimates emissions for goods and services by collecting data on the economic value of goods and services purchased and multiplying it by relevant secondary (e.g. industry average) emission factors.

SusQI – Sustainability in Quality Improvement (SusQI) is a method to drive incremental change towards and more ethical and sustainable health system.

Carbon dioxide equivalent (CO_2e) – A carbon dioxide equivalent or CO_2e, is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

Waste hierarchy - The waste hierarchy ranks waste management options according to what is best for the environment.


The time
for action is
now!