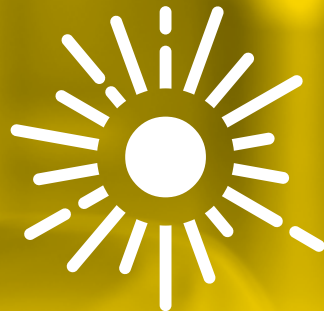


Inspected and rated

Outstanding 



The Newcastle upon Tyne Hospitals  
NHS Foundation Trust



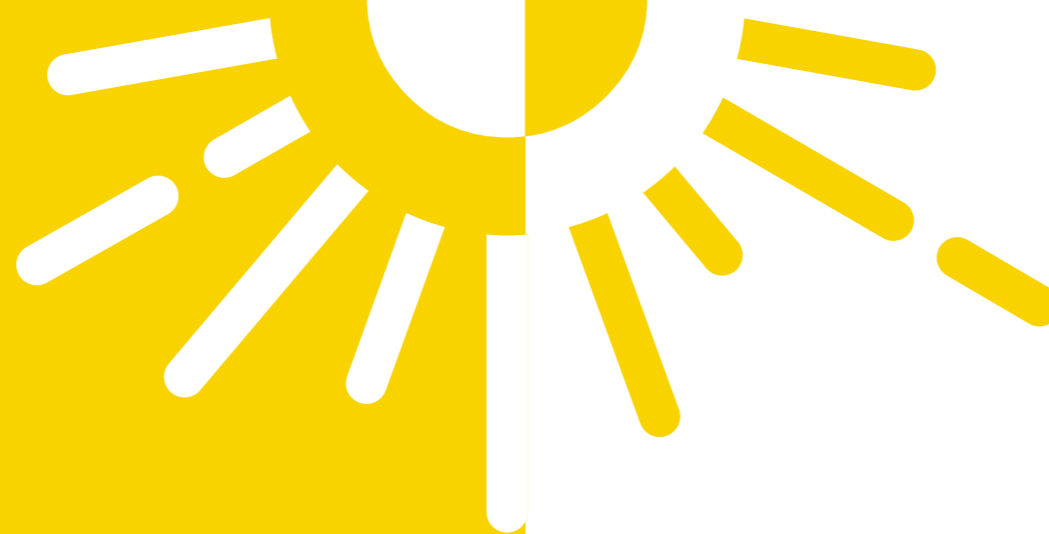
# Shine

Sustainable Healthcare in Newcastle

**Sustainable Healthcare in  
Newcastle (SHINE) Report  
2020/21**

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## 1. Foreword

Over the last unprecedented year, we've all had to re-evaluate our place in the world and we've had time to consider the fragility of our planet. On many levels it has become increasingly clear to me that the climate emergency really is an urgent health emergency.

I'm pleased to say that at Newcastle Hospitals we had already taken a strategic leadership position to tackle the impact we have on climate breakdown, in recognition of the threat that the climate crisis presents not just to our planet, but to our health, wealth and wellbeing locally.

Most people will associate climate change with rising global temperatures and an increase in the frequency of extreme weather events. You might recognise that the extreme heatwaves we have increasingly seen in the UK cause excess deaths. In fact, heat caused around 1,000 excess deaths in the UK during the summer of 2019.

**NHS Trusts can use our influence to decarbonise not just our buildings and vehicles but also our care pathways, medicines and our wider supply chain**

However, it is possibly not as well known that:

- Air pollution is associated with increases in respiratory and heart disease.
- It is the number one environmental risk to human health in the UK.
- It is the fourth greatest long-term threat to public health after cancer, heart disease and obesity.
- It is linked to around 40,000 premature deaths a year in the UK and a cost to the economy, and by extension the NHS, of over £20 billion each year.

These impacts increase the strain on our healthcare system, as they cause people to need emergency care and inpatient admissions which are highly carbon-intensive interventions.

Continuing the status quo will inevitably lead to us investing more money and effort in dealing with the consequences – that's money that we can't then spend on the causes of climate change and prevention.

What we've been able to understand over the last year is that mitigating climate breakdown and pollution will reap immediate benefits in terms of our collective health, wealth and wellbeing.

With the NHS representing approximately 5% of the UK's total carbon footprint – around 27 million tonnes of carbon each year – we have to acknowledge that we are a significant part of the problem. But more importantly, we also have to recognise that we also can be a significant part of the solution if we choose to take action.

**Whilst the scope and scale of the challenge may be daunting, our early progress across Newcastle Hospitals tells me that it is possible, and only by working together both as one NHS and with our partners will we be able to meet the challenge**

As anchor institutions in communities across the country, NHS Trusts can use our influence to decarbonise not just our buildings and vehicles but also our care pathways, medicines and our wider supply chain.

Here at Newcastle Hospitals we have a well-established brand – SHINE (Sustainable Healthcare in Newcastle) which highlights the eight strands of our approach and our roadmap is set out in our Climate Emergency Strategy.

This roadmap ranges from plans to decarbonise our hospital buildings and transport, to working with our clinicians and supply chain to provide lower carbon care pathways, and also the smaller things that each of us can do every day to make a difference.

Transparency is incredibly important as we progress towards the targets we've set, and they are set out in detail in this annual Shine Report so that we can be held to account.

We're making great progress, with some of the best recycling rates in the NHS – almost 50% of our non-clinical waste; continued reductions in our direct carbon emissions – 5% in the last year despite increased activity, and a further 23% reduction in the environmental damage caused by our use of anaesthetic gases.

Our work on journeys has led to over 50% of staff commuting by active and sustainable means, we've switched our fleet over to electric vehicles, installed EV charge points on site and have commissioned electric buses for staff, patients and visitors to access our hospitals.

We continue to host the Environmentally Sustainable Anaesthesia Fellow, in association with the Association of Anaesthetists of Great Britain & Ireland and the Centre for Sustainable Healthcare, which has led to projects that have significantly reduced not just our own anaesthetic gas environmental impact but that of anaesthetic departments across the NHS.

**Dame Jackie Daniel**  
Chief Executive

**COVID-19**

Both in our organisation and across the NHS, we need to not go back to the 'way things were' as we recover from the COVID-19 pandemic, and instead 'build back better' – this is the only route to true sustainability. We're working hard with Dr Nick Watts and the Greener NHS Team to engage other trusts and to raise awareness of the practical steps they can take quickly to begin to reverse the harmful effects of the NHS on our planet.

Most importantly for me, huge numbers of our people are engaged. They care about this agenda and are proactively taking action. I'm grateful to our 300 staff green champions for the positive impact they have had, and to the 1,000 staff who have signed up and undertaken over 15,000 sustainable actions in just six months through our Shine app. Sustainability really is a part of our nature and what drives us to flourish.

Whilst the scope and scale of the challenge may be daunting, our early progress across Newcastle Hospitals tells me that it is possible, and only by working together both as one NHS and with our partners will we be able to meet the challenge.





## 2. Introduction

The year since the publication of our last annual sustainability report has been one of the most difficult ever faced by the NHS. However, in spite of the huge challenges that have been experienced by staff they have continued to show support for the Trust's sustainability work with over 99% rating it as important in our staff sustainability survey for 2020.

The Expert Panel that was convened to identify how soon, and by what means, the NHS could achieve net zero continued to meet virtually in the spring and summer 2020. Our CEO Dame Jackie Daniel was a member of the panel and this work culminated in the production and publication of the 'Delivering a Net Zero NHS' report in October. This ground-breaking report committed the NHS to becoming the world's first major health service to achieve net zero for its own activities by 2040 and for those it can influence by 2045. Following our Climate Emergency Declaration in 2019 - where we publically recognised the threat that climate breakdown poses to public health and committed to becoming carbon neutral by 2040 - we worked with the expert panel and consulted with staff on how we could achieve this aim.

In October 2020, shortly after the publication of the national net zero plan we launched our Climate Emergency Strategy for 2020-2025. It sets out our vision in more detail and contained three 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.

**We plan to further increase the training, tools and resources available in the coming year, so we can empower and enable staff to deliver Sustainable Healthcare in Newcastle (Shine)**

The Strategy also includes our five year action plan which states, across all eight Shine themes, what we plan to achieve by 2025, how we will achieve it and how we will measure and report on progress (namely in these annual Shine reports). Supporting the strategy is a detailed Climate Emergency Action Plan setting out how the key aims will be achieved and sitting alongside is a suite of staff engagement tools and resources including a Climate Emergency Action Fund, Sustainability Ambassador training and a Shine Award for staff led projects. We also launched our staff engagement programme Shine Rewards this year, which is a bespoke app for our staff which recognises and rewards staff who engage in energy saving, sustainable travel, waste reduction and other sustainable actions.

This year we have noticed an increase in requests from staff for support and guidance to help them implement their own sustainability improvements within their services and departments. We plan to further increase the training, tools and resources available in the coming year, so we can empower and enable staff to deliver Sustainable Healthcare in Newcastle (Shine).

All of this, as well as the progress made towards the three goals and the key action areas, is explored in this report where we detail what we have achieved in the last year and what we plan to do in our next steps towards zero carbon care, clean air and zero waste.

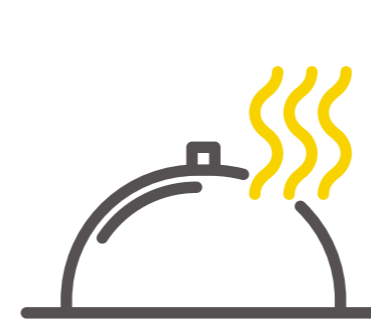
### COVID-19

The COVID-19 pandemic has made this year a particularly challenging one, and has certainly impacted on progress in all of the key action areas. As well as the negative impacts such as the increase in the amount of single-use PPE and pressure on car parking infrastructure, there have been positive impacts for example the rapid adoption of technological solutions to remote consultations and team meetings, and the zero emission delivery of home patient medications.

Where possible we have quantified these impacts and included them in our overall carbon footprint, and have included more detail in the key action areas where relevant.

# Shine

## Sustainable Healthcare in Newcastle



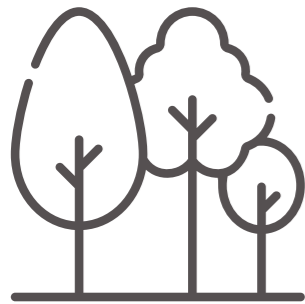
**Meat Free Mondays**



**5% reduction** in direct carbon emissions



**500 suppliers** engaged on net zero carbon



Planted **100 trees**



Saved **36,000 patient journeys** through pharmacy delivery



Introduced **2 pool eBikes**



**15,000 actions** via Shine Rewards



**Sustainable Respiratory Care Group** established



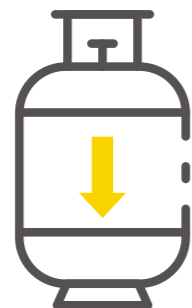
Strategic roadmap to **Net Zero estates**



Committed to **Passivhaus design & BREEAM Outstanding** in new buildings



**Sustainability embedded** in HR and recruitment



**23% reduction** in anaesthetic gas carbon emissions



**Climate Emergency Strategy** launched



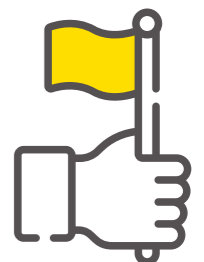
**Recycled 47%** of non-clinical waste



Launched **Climate Emergency Action Fund** to support staff led projects



**99% staff** said sustainability is important



Trained first cohort of **9 Sustainability Ambassadors**

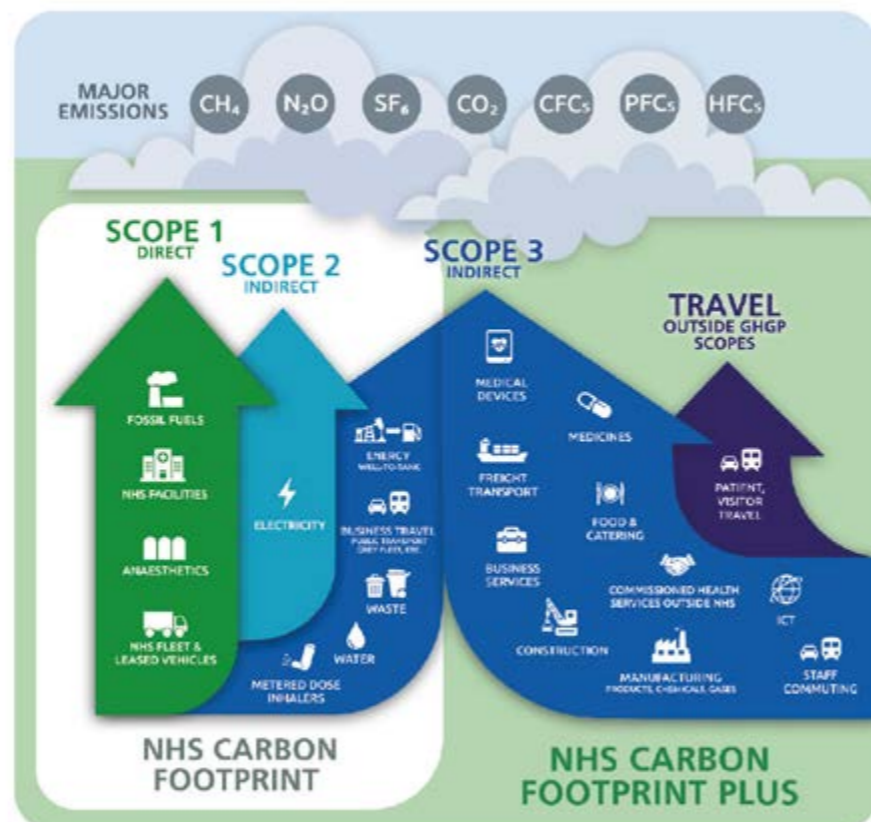
# 3. Overall Performance Update

This section covers our three current measures of overall performance; our carbon footprint, Sustainable Development Assessment Tool score and our staff survey results.

## 3.1 Carbon Footprint

We have adopted the definitions used in the 'Delivering a Net Zero NHS' report from NHS England and NHS Improvement to produce a detailed breakdown of our own organisational carbon footprint, incorporating 'Newcastle Hospitals Carbon Footprint' and 'Newcastle Hospitals Carbon Footprint Plus' for our baseline year of 2019/20 and for 2020/21.

**Since committing to more ambitious carbon reduction targets in our Climate Emergency Strategy we have refreshed our approach to carbon reporting in line with Greenhouse Gas Protocol (GHGP) and the BEIS Environmental Reporting Guidelines to increase our confidence in the data we report**



Since committing to more ambitious carbon reduction targets in our Climate Emergency Strategy we have refreshed our approach to carbon reporting in line with Greenhouse Gas Protocol (GHGP) and the BEIS Environmental Reporting Guidelines to increase our confidence in the data we report<sup>1</sup>. We have restated and recalculated our baseline year of 2019-/20 using this methodology and this is shown in the table below alongside our carbon footprint for 2020/21.

Category	Sub-category	Total tCO <sub>2</sub> e		
		2019/20	2020/21	% change
Newcastle Hospitals carbon footprint	<b>Scope 1</b>			
	Building energy – fossil fuels	54,858	53,901	-2
	Refrigerant gases	477	246	-48
	Anaesthetic gases	4,336	3,345	-23
	Trust fleet	112	42	-63
	<b>Scope 2</b>			
	Building energy - purchased electricity <sup>2</sup>	4,933	4,924	-0.19
	<b>Scope 3</b>			
	Water	441	454	3
	Waste	105	99	-5
Inhalers	1,399	903	-35	
Business travel	1,278	724	-43	
<b>Newcastle Hospitals carbon footprint total</b>		<b>67,939</b>	<b>64,638</b>	<b>-5</b>
Medicines, medical equipment and other supply chain	Medicines and chemicals	87,971	94,239	7
	Other supply chain	55,793	78,293	40
	Medical equipment	57,615	52,123	-10
<b>Procurement total</b>		<b>201,379</b>	<b>224,655</b>	<b>12</b>
Personal travel	Staff commute	14,863	13,089	-12
	<b>Outside GHGP scope</b>			
	Patient and visitor travel	24,127	16,520	-32
<b>Newcastle Hospitals Carbon Footprint Plus total</b>		<b>308,308</b>	<b>318,902</b>	<b>3</b>
Patient numbers		1,788,469	1,432,307	-20
<b>Carbon intensity</b>		<b>0.172</b>	<b>0.223</b>	

Table 1: Breakdown of Total Newcastle Hospitals Carbon Footprint 2019/20 and 2020/21

## NEWCASTLE HOSPITALS CARBON FOOTPRINT

- There has been a 5% decrease in emissions related to our 'Newcastle Hospitals Carbon Footprint', compared to 2019/20.
- If we continue to reduce our carbon footprint at this rate we will not meet our target to be net-zero carbon for emissions that we control by 2030.
- Activities which have taken place to achieve this reduction are explored in more detail in the sections that follow, as well as some detail about the activity that is planned for next year.

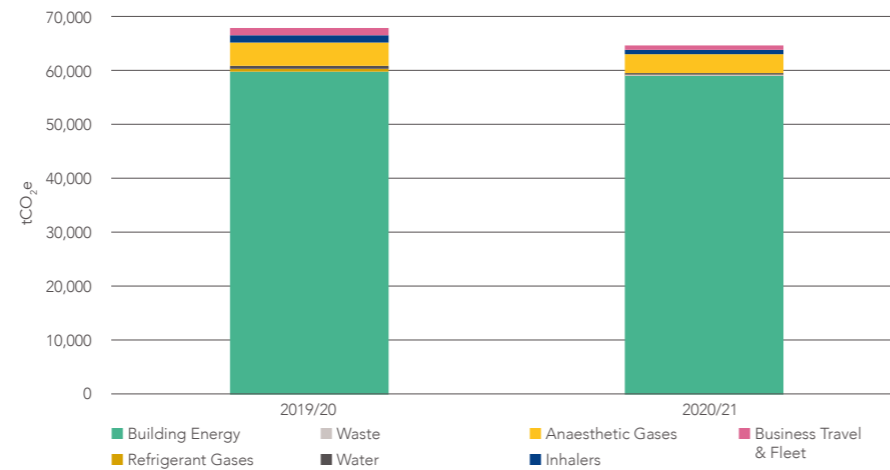


Fig 1: Newcastle Hospitals Carbon Footprint

## NEWCASTLE HOSPITALS CARBON FOOTPRINT PLUS

- When considering the 'Newcastle Hospitals Carbon Footprint Plus' there has been a 3% increase in emissions compared to 2019/20.
- The largest proportion of our carbon footprint is still related to the products and services we procure.
  - Directly associated with an increase in spending, there has been an increase in our procurement carbon footprint of 12%.
  - This has greatly impacted on our overall carbon footprint.

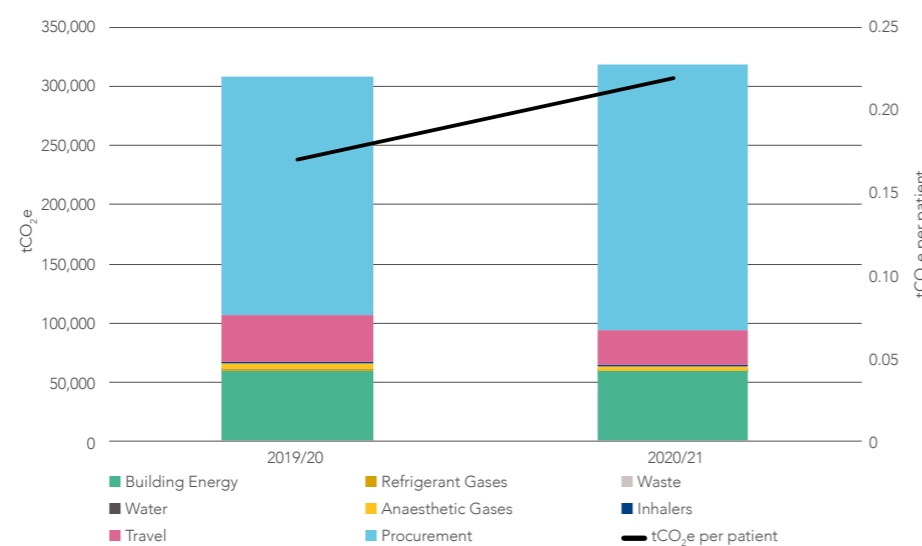


Fig 2: Newcastle Hospitals Carbon Footprint Plus

- Calculating this element of our 'Newcastle Hospitals Carbon Footprint Plus' is difficult and therefore confidence in this data is low. Improving confidence in this data is a major theme of work which you can read more about in the 'Procurement' section of this report.

- Building energy use is the largest contribution to our 'Newcastle Hospitals Carbon Footprint' and as such is given a high priority of focus for action within the Climate Emergency Strategy for 2020-2025.
- Waste and water represents a negligible proportion of our carbon footprint, however activity is still needed within these areas as both present significant sustainability challenges.
- Further detailed analysis is provided in the relevant sections.

## THE IMPACT OF COVID-19 ON OUR CARBON FOOTPRINT

- In the last year we have undertaken 30% of outpatient appointments remotely (virtual/telephone). This has been estimated to save 7 million patient journey miles and almost 2000 tonnes of carbon. The challenge is to ensure that as many of these interactions remain virtual where patient experience/clinical care is not negatively impacted.
- In the absence of reliable data on the number of staff members working from home we have not been able to include this impact in our carbon footprint calculations. As there were no closures of office areas during the pandemic response any additional carbon footprint related to staff working from home is unlikely to have been offset in any significant way.

- We have also been unable to quantify the number of hours of meetings held on virtual platforms. As the staff transport that runs between our hospital sites has remained active throughout it is unlikely that internal virtual meetings would have had a significant impact on carbon emissions, although it has been noted that the carbon footprint associated with rail and air travel has decreased significantly this year due to the reduction in need for travel both internationally and within the UK.

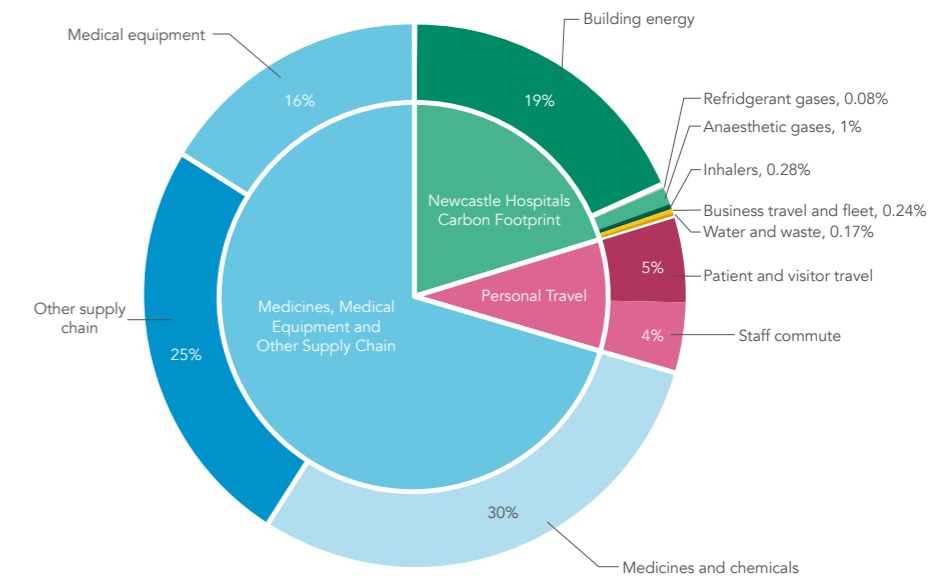


Fig 3: Breakdown of Newcastle Hospitals Carbon Footprint Plus

- We removed over 3,000 patient journeys a month to hospital dispensaries (approximately 100,000 patient & visitor miles a month) by creating a pharmacy delivery hub as part of the COVID-19 response. This saved almost 252 tonnes of carbon over 12 months by consolidating those journeys into more efficient routes, and using low emissions vehicles. A zero emission e-bike courier was also introduced for deliveries within 5 miles of the hub.
- These examples are explored in more detail in section 5.2 'Journeys'.

**In the last year we have undertaken 30% of outpatient appointments remotely (virtual/telephone). This has been estimated to save 7 million patient journey miles and almost 2000 tonnes of carbon**

### CARBON BUDGETS

As described in our Climate Emergency Strategy we have incorporated the principle of carbon budgets into our plans, calculating a limit on how much carbon dioxide we can emit over the next 20 years whilst remaining within safe limits. 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 UK local authorities with recommendations that translate the “well below 2°C and pursuing 1.5°C” global temperature target.

We have taken that methodology and applied it at an organisational level for Newcastle Hospitals, showing that to stay within our carbon budget we need to reduce our building energy carbon emissions by 12.8% year on year, and this is at the heart of our carbon targets.

Our progress on reducing building energy carbon emissions is discussed in more detail in section 5.1 ‘Energy & Water’.

### WHAT ABOUT CARBON OFFSETTING?

Within our Climate Emergency Strategy for 2020-2025 there is an aim to research and investigate innovative carbon offsetting, or insetting, options for our residual carbon emissions.

Aligned with Tyndall Centre guidance, our short-term focus is to reduce emissions from both the Newcastle Hospitals Carbon Footprint and Newcastle Hospitals Carbon Footprint Plus as much as

possible, though we are in active conversations with both national (Greener NHS) and local (Newcastle’s Net Zero Taskforce) colleagues to discuss viable carbon sequestration and removal options as they emerge.

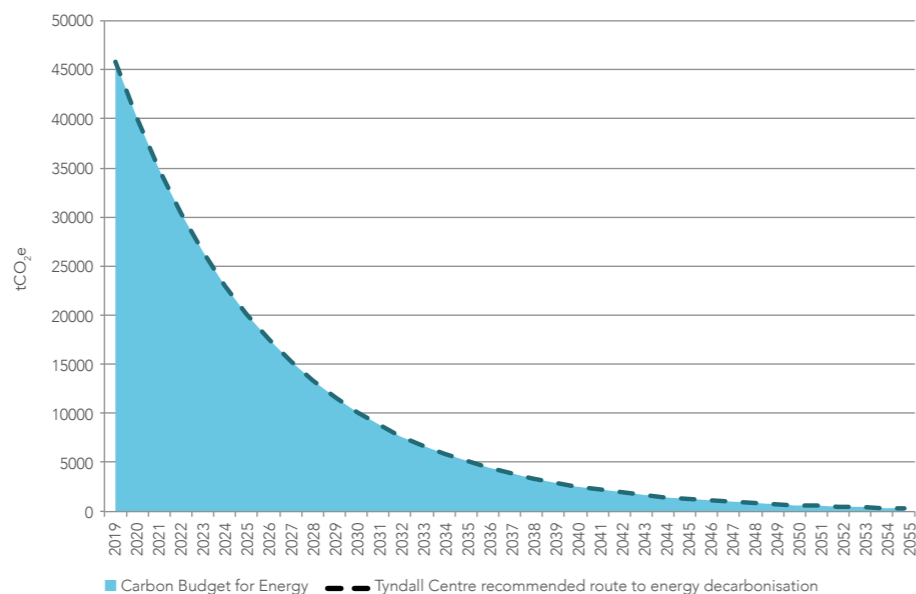


Fig 4: Newcastle Hospitals Carbon Budget for Energy

**To stay within our carbon budget we need to reduce our building energy carbon emissions by 12.8% year on year**

### 3.2 Sustainable Development Assessment Tool (SDAT)

The Sustainable Development Assessment Tool (SDAT), developed by the Sustainable Development Unit (SDU), helps healthcare organisations understand and measure their sustainable development progress and plan for the future. We first completed the SDAT in 2017/18, having previously completed the SDAT’s predecessor ‘Good Corporate Citizenship’ since 2013, and can now show where we are making progress, and which areas require us to focus more effort.

The SDAT was removed in February 2021 and these are the final scores. This year we are pleased to be able to demonstrate improvement in all but one of the areas of focus.

At the time of writing the Greener NHS team were reviewing resources being provided as part of the national campaign and it is not certain whether a similar tool will be developed to replace the SDAT.

Area of Focus	2017/18 Score	2018/19 Score	2019/20 Score	2020/21 Score	% Change this year compared to 2019/20
Corporate Approach	48%	57%	67%	69%	3%
Asset Management & Utilities	26%	32%	46%	49%	3%
Travel & Logistics	46%	64%	71%	72%	1%
Adaptation	42%	45%	59%	63%	4%
Capital Projects	38%	24%	45%	45%	0%
Green Space & Biodiversity	23%	19%	25%	29%	4%
Sustainable Care Models	15%	24%	29%	33%	4%
Our People	66%	78%	82%	85%	3%
Sustainable Use of Resources	31%	40%	42%	43%	1%
Carbon / GHGs	50%	43%	57%	63%	6%
<b>Overall Score</b>	<b>41%</b>	<b>46%</b>	<b>55%</b>	<b>58%</b>	<b>3%</b>

Table 2: Sustainable Development Assessment Tool scores from 2017/18 to 2020/21

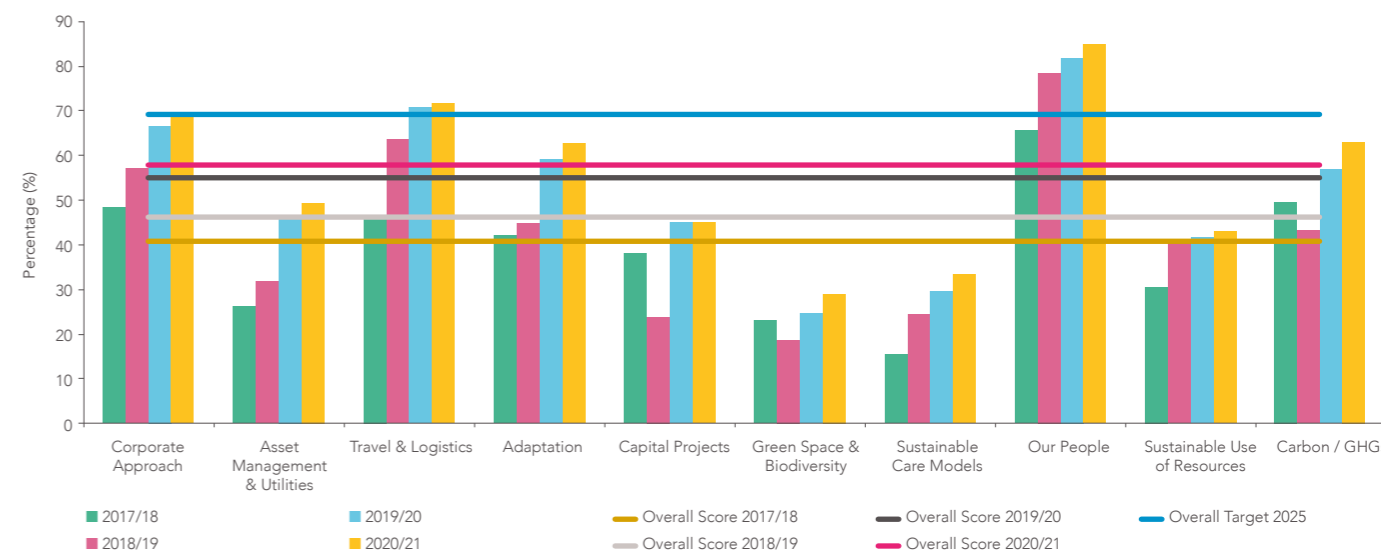


Fig 5: Sustainable Development Assessment Tool scores for 2017-2021



### SUSTAINABLE DEVELOPMENT GOALS

The SDAT also shows how the Trust is supporting progress against the UN Sustainable Development Goals (SDGs) – 17 sustainable development goals which aim to end poverty, protect the planet, and bring prosperity to all by 2030.

Based on this year's SDAT submission, the Trust is contributing to these SDGs at a local level:



And the Trust is starting to contribute to these SDGs at a local level:



**This year despite huge challenges faced by the NHS and Newcastle Hospitals 99% of staff believe it is either 'very' or 'fairly' important for us to work in a more sustainable way**

### 3.3 Stakeholder Engagement

#### STAFF SUSTAINABILITY SURVEY

Each year we conduct a survey of our staff to gain insight into their opinions and understanding of sustainability at Newcastle Hospitals. Up to now the proportion of staff who are aware of the sustainability work of the Trust has increased every year.

- This year despite huge challenges faced by the NHS and Newcastle Hospitals 99% of staff believe it is either 'very' or 'fairly' important for us to work in a more sustainable way.
- We have maintained a level of 74% of staff being aware of the sustainability work of the Trust.

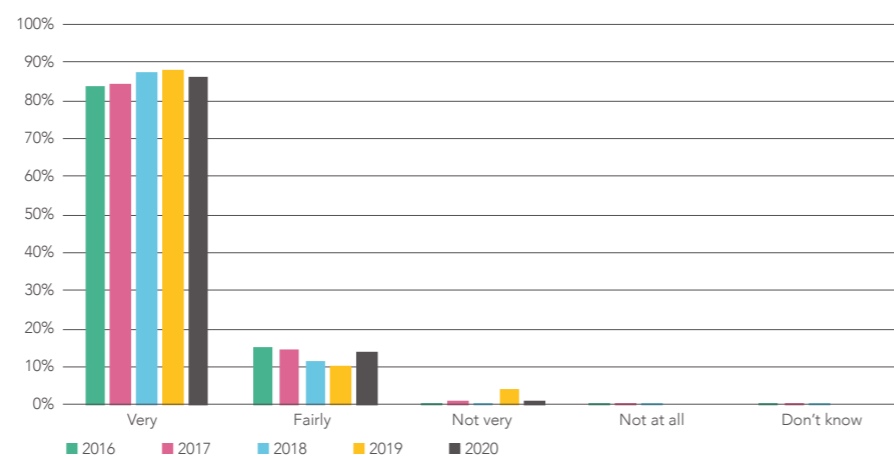


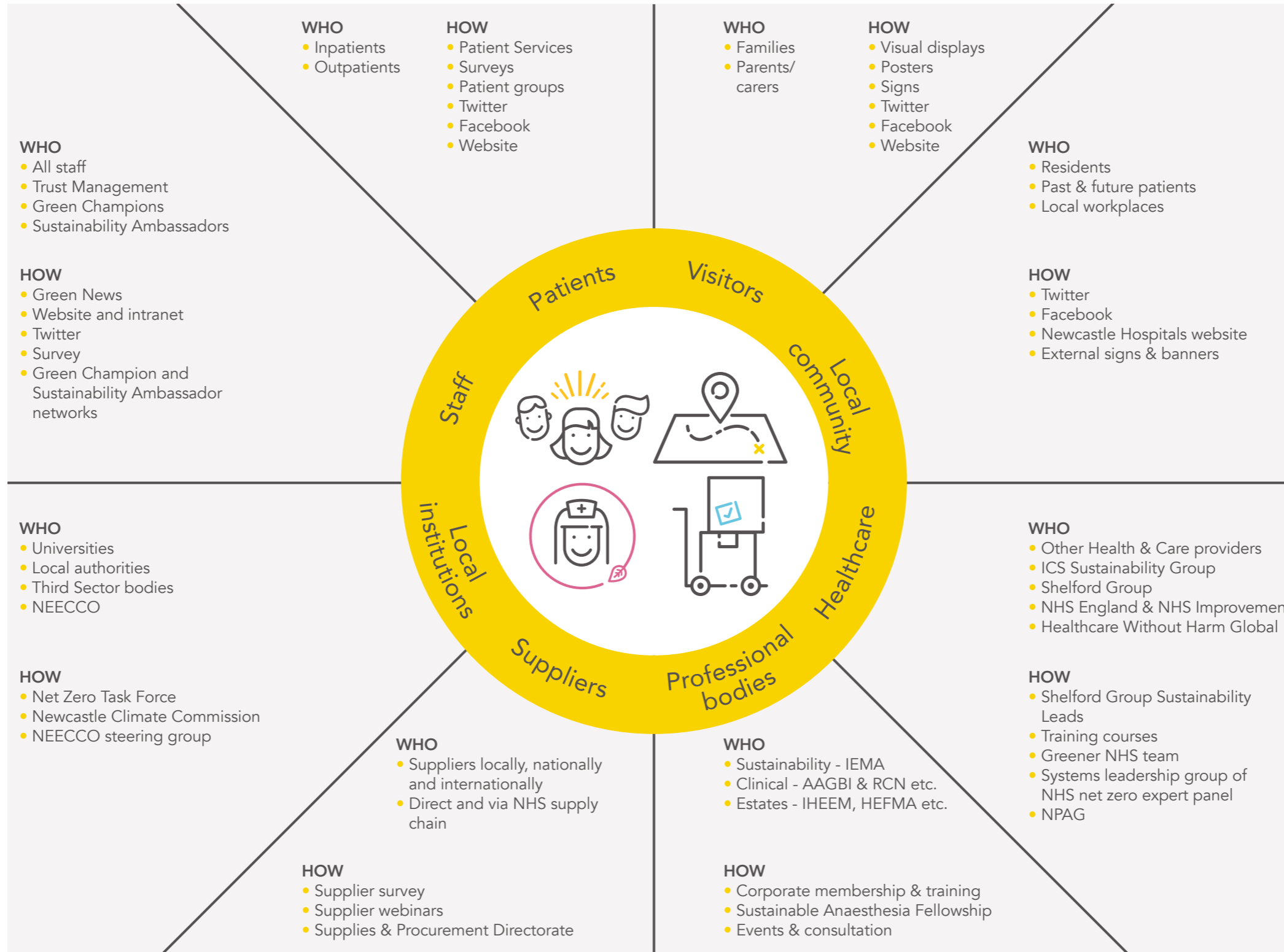
Fig 6 : Staff survey results for the question 'How important do you feel it is for the Trust to work in a more sustainable way?' 2016-2020





### STAKEHOLDER MAPPING & ENGAGEMENT PLAN

We have also started work to map the rest of our stakeholders and have identified eight main groups, as shown in the diagram.



- Over the next 12 months we will add to this map and engage with our stakeholders using a variety of methods to gather their views and opinions on our Climate Emergency Strategy, the three goals and the eight Shine themes.
- We plan to develop a materiality matrix that will help us define priority areas for action.
- We will publish the results of the stakeholder engagement in our next annual report and will continue to engage with our stakeholders on the issues that matter to them.

Fig 7: Stakeholder map



## 4. Leadership, partnerships and collaboration

We have committed to achieving ambitious targets for not only the emissions we control, but those we have influence over (our Newcastle Hospitals Carbon Footprint Plus). To do this we are working with partners across sectors and our own hospital boundaries on Climate Emergency leadership, partnerships and collaboration.

The following is a summary of what has been achieved in the last year:

### CITY SCALE

- We are working closely with civic partners to deliver on plans for a Net Zero Newcastle by 2030, fully utilising our ability as an anchor institution to lead on this transition.
- We are an active member of Newcastle City Council's Net Zero Task Force which has strategic oversight of this work and have collaborated on projects such as: strategic heat networks; net zero-ready enabling works for the city electrical network; and COP26 presence and wider community engagement on climate action.
- Created Collaborative Newcastle (<https://www.collaborativenewcastle.org/>) to improve the health, wealth and wellbeing of everyone in the city. Through radical new ways of joint working across some of the city's largest organisations we have come together to reduce inequality and provide better opportunities for all.

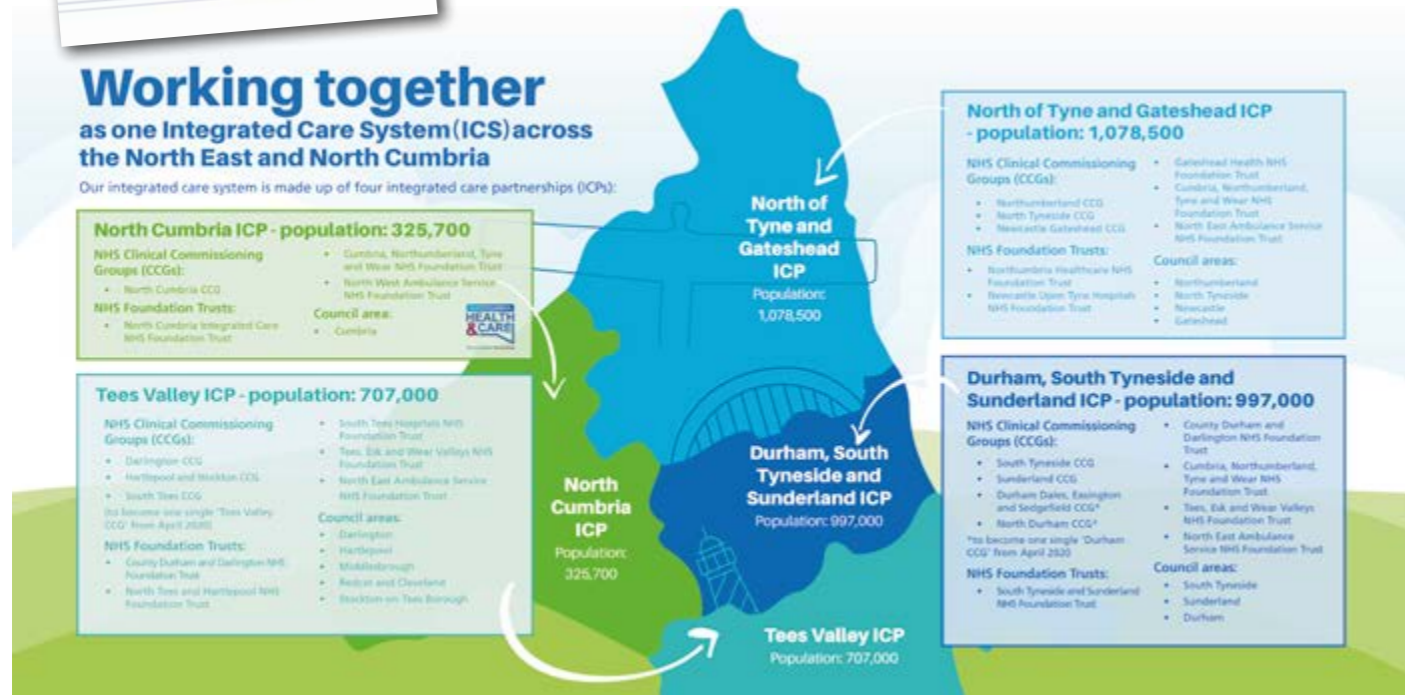


**REGIONAL**

- Leading our North East & North Cumbria Integrated Care System (NENC ICS) into region-wide action, utilising the scale of our regional health economy to instigate decarbonisation in areas like transport, energy, waste, procurement, food and greening our estate.

- Formed a North East & North Cumbria ICS Sustainability Group to share best practice on sustainable healthcare service delivery. The group includes sustainability leads from each Trust, as well as engaged clinicians from both primary and secondary care and wider system partners including representatives from the North East Academic Health Science Network (AHSN), North of England Commissioning Support (NECS) and NHS Supply Chain.

- Regional baseline data for sustainability performance has been established and a NENC ICS wide strategy/Green Plan is in development with Chief Executives of each provider Trust.
- In order to explore future options for transformational decarbonisation of heat we are working with our Local Economic Partnership, and other partners, as a member of the North East Energy Catalyst Hydrogen Working Group.



**NATIONAL & INTERNATIONAL**

- We established the Shelford Sustainability Leads Group to share best practice and collaborate on projects with a national reach. The group is chaired by our Associate Director - Sustainability, James Dixon, and brings together the sustainability leads of all ten of the leading teaching and research Trusts in the country (<https://shelfordgroup.org/sustainability-leads-sub-group/>).
- Our CEO, Dame Jackie Daniel, is part of the NHS Net Zero Carbon Expert Panel bringing together system leaders from across the NHS to build, develop and share best practice for a net zero NHS.
- Shared best practice, on Climate Leadership and Green Nephrology, with peers from across Europe at Health Care Without Harm's virtual CleanMed 2020 conference.
- Dame Jackie Daniel recorded a video interview for Healthcare Without Harm (a global NGO focussing on working towards sustainable healthcare and a healthier environment) discussing steps that hospitals and health systems can take to address the climate emergency by decarbonising and advocating for change.



- We were the first healthcare organisation to sign up to the United Nations' Race to Zero campaign, as part of the health sector cohort, joining almost 40 peers across the world (<https://unfccc.int/news/health-institutions-join-the-united-nations-race-to-zero-campaign>).
- Shortlisted for an HSJ Award for 'Delivering on our Climate Emergency Declaration'.

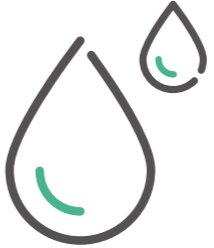


# 5. Key Action Areas

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.



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



**Water**  
Minimise water use



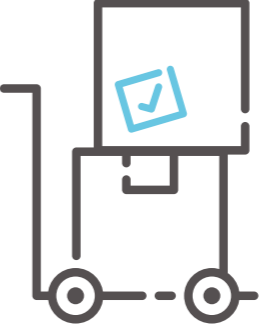
**Waste**  
Dispose of less, reuse and recycle more



**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.

### PERFORMANCE

- Scope 1 and 2 carbon emissions from building energy use have reduced by 966 tCO<sub>2</sub>e in 2020/21. Whilst this is progress in the right direction, the Trust is not currently operating within the annual carbon budgets for energy emissions which, in 2020/21, required a reduction of at least 7,653 tCO<sub>2</sub>e.

### AIM

Minimise water use in our buildings:

- Eliminate wasted water.
- Increase water efficiency.

## Carbon emissions from building energy use have reduced by 966 tCO<sub>2</sub>e in 2020/21

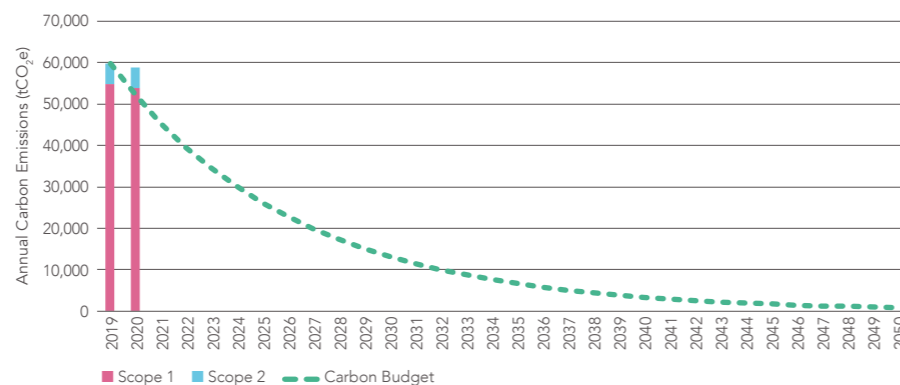


Fig 8: Carbon emissions from building energy use from 2019 with carbon budget

### ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Completed a strategic assessment of the Trust's direct carbon emissions, setting a roadmap to net zero by 2040.
- Developed carbon budgets for energy-related carbon emissions, setting an annual reduction (without offsetting) of 12.8% each year, based on the science-informed recommendations from the Tyndall Centre for Climate Change Research.
- Freeman Hospital was one of 12 pilot hospital sites selected for the government-funded Modern Energy Partners Programme (see case study). Additional heat and electricity meters have been installed, providing insights into how energy is used in public sector buildings, helping to inform national policy on decarbonising buildings. The project included a concept design, identifying how carbon emissions could be halved by 2032 by improving energy efficiency and introducing heat pump technologies to replace fossil-fuel based systems.
- New full time member of staff joined the team as Assistant Energy Manager to increase energy management resourcing. Energy Support Officers now dedicated to Building Management System optimisation, also supporting additional energy efficiency improvements.
- Further development of our metering and monitoring systems, collating and analysing energy use to assess performance and identify areas for improvement.
- Strategic heat audit completed at the Freeman Hospital, identifying opportunities to reduce heat demand and optimise systems to reduce carbon emissions and support the shift from fossil-fuel based heat to low carbon sources.
- Hydrogen study completed for the RVI, part of region-wide decarbonisation strategic work, looking at the feasibility of transporting hydrogen via tankers and/or piped infrastructure.
- Further LED lighting roll out and improvements to heating systems and building controls by Estates Operations teams.
- European funding bid submitted with Newcastle City Council for building level energy audits and a range of energy efficiency and onsite renewable energy measures.
- An electrical capacity review for the RVI commenced, assessing the infrastructure investments required to support two new fully electrically heated and powered clinical buildings and to enable future electrification of heat in existing buildings.
- Input into government funded City-scale heat Decarbonisation Delivery Plan (CDDP2) to identify decarbonisation opportunities in the public estates and member of the city heat networks feasibility group, assessing opportunities for city-wide low carbon heat networks.
- All Trust grid electricity supplies consolidated into one, 100% renewable procurement portfolio (continuing this commitment since 2016).
- Automatic loggers installed on most water meters, enabling the half-hourly consumption patterns for over 90% of Trust water use to be tracked and analysed on our monitoring and targeting software.





### PLANS FOR THE NEXT YEAR

- Continue working collaboratively with city partners on joint decarbonisation projects such as low carbon district heating, electrical infrastructure upgrades, and funding bids to accelerate energy efficiency projects at scale and speed.
- Commission audits and feasibility studies to identify short term and longer term infrastructure improvements to support rapid decarbonisation of our buildings.
- Secure additional funding to deliver further LED, BMS and other energy efficiency and carbon reduction interventions identified via site audits.
- Further develop the data collection, analysis and reporting capability within the Trust to support ongoing performance improvements.
- Increase engagement with colleagues across Estates (and beyond) about Net Zero Carbon ambitions.
- Audit buildings to identify water saving opportunities.
- Develop water monitoring procedures to ensure leaks are detected and resolved quickly.



### CASE STUDY: Modern Energy Partners Programme

In early 2020 the Freeman Hospital was chosen as one of 13 NHS sites to take part in the Modern Energy Partners programme. Funded by the Department for Business, Energy & Industrial Strategy (BEIS), this was a pilot innovation programme to demonstrate the potential for campus-style public sector estate decarbonisation, with the underlying aim of demonstrating that it is possible to evolve a consistent, replicable and scalable approach for decarbonisation. There were two elements of the programme: firstly, installation of additional building-level energy metering and supporting telemetry to allow automatic data collection for monitoring and analysis, and secondly, the development of a concept design of the most economic decarbonisation pathway to at least halve direct carbon emissions by 2030 to set the site on a firm net-zero trajectory.

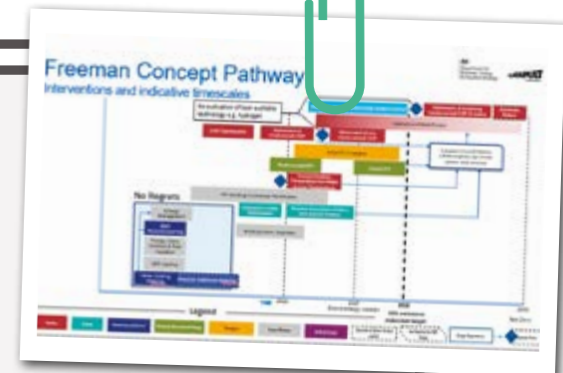
#### Improved metering:

Dedicated engineering teams were allocated to work with the Trust to identify and install the meters, strongly focussing on heat. As the Freeman hospital has a central energy centre, data for the total heat delivered to site is good but there was little understanding of how much each building used. All the meters have now been installed and half-hourly consumption data is feeding into the energy management software. Overtime, this growing data set is going to provide valuable base performance data that will help identify opportunities for energy efficiency improvements and measure the energy impacts of decarbonisation projects and any other changes to site operations. Having robust energy data available is a core foundation stone of energy management best practice and will continue to deliver benefits to the Trust over the coming years, as well as providing valuable insights to the project team.

#### Concept design:

A separate engineering team was assigned to work on the concept design for Freeman. Due to Covid-19 restrictions, site surveys were off limits so much of the work had to be coordinated remotely – sharing documents, live demos and meetings over Teams and lots of calls and emails bringing in information from the engineering and building teams and the consultants developing the design. The resulting concept design identified a range of interventions to reduce energy use and the Trust's dependency on fossil fuels to heat and power the site. Starting with 'no regret' measures, like switching to low energy LED lighting and improving controls on our heating and ventilation systems, 3,000 tCO<sub>2</sub>e per year potential saving are achievable. Further phased heat and electricity measures, including staged retirement of gas-fired CHP plant, installing solar photovoltaic panels, upgrading the fabric of our buildings and converting our heat distribution to a lower temperature to ensure future compatibility with existing low and zero technologies, such as heat pumps, offered further annual savings potential of 7,000 tCO<sub>2</sub>e.

The recommendations from the concept design are being taken forward, developing more detailed feasibility assessments with the aim of incorporating these decarbonisation projects into our capital investment programmes over the coming years.





## 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.

### PERFORMANCE

- The carbon footprint for all travel included in the Newcastle Hospitals Carbon Footprint Plus boundary has decreased 25% from 2019/20.
- This includes a 32% reduction in the carbon footprint from patient and visitor travel due to a third of all outpatient appointments being held virtually this year – that's over 375,000 appointments, approximately 7 million miles and almost 2,000 tonnes of carbon.
- There are 362 covered secure cycle parking spaces at our main sites, including individual lockers and cycle compounds.
- There are 389 electric vehicles and hybrid electric vehicles either already on the road or on order through the staff benefits scheme.

- 45% of staff surveyed are using an active or sustainable mode of transport to travel to work.

- We will monitor the growth of these metrics in future reports.

**45% of staff surveyed are using an active or sustainable mode of transport to travel to work**

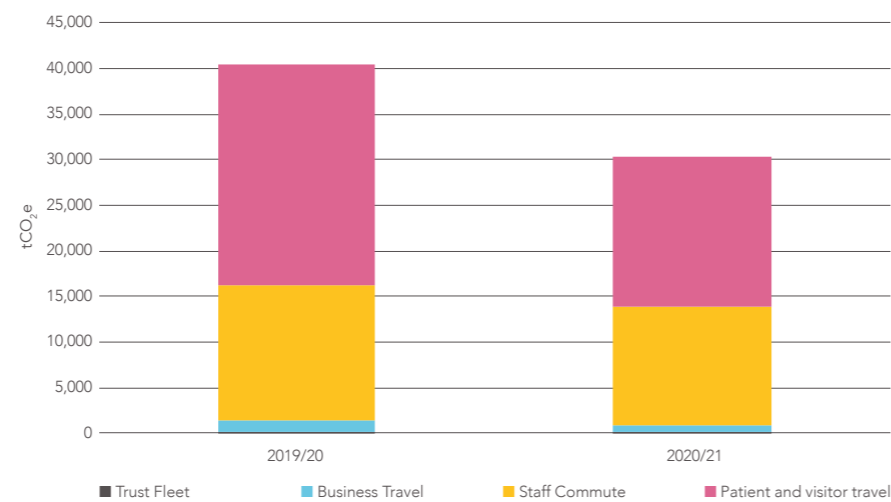


Fig 9: Carbon emissions for all travel in the 'Newcastle Hospitals Carbon Footprint Plus' boundary



### MODAL SPLIT FOR STAFF COMMUTE

- The carbon footprint related to staff commute has decreased by 12%. We do not have reliable 'work from home' data to enable us to estimate any reduction in staff commute during the COVID-19 response, so it is possible that there could have been an even greater reduction.

- The modal split data shown in figure 10 shows that the number of staff travelling to work using active travel (such as cycling and walking) has increased from 7% of staff to 27% this year.
- Encouraging to see active travel uptake when challenges with public transport (metro, bus, rail) could have seen an increase in car use.

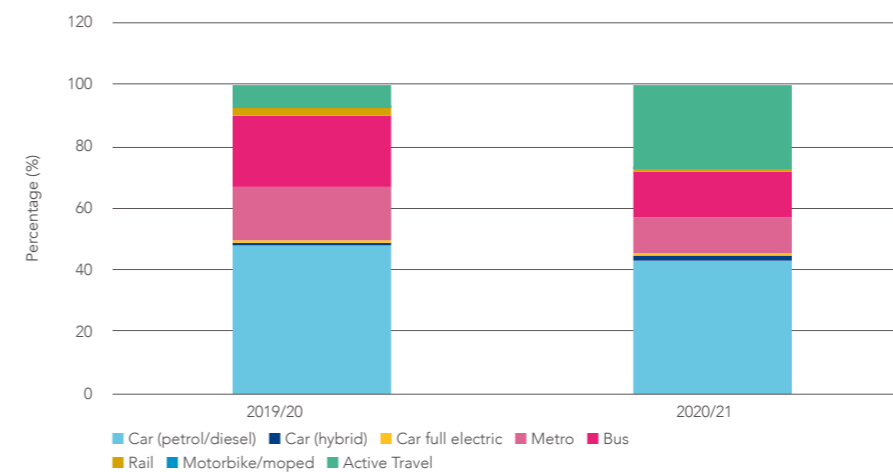


Fig 10: Modal split for staff commute for 2019/20 and 2020/21

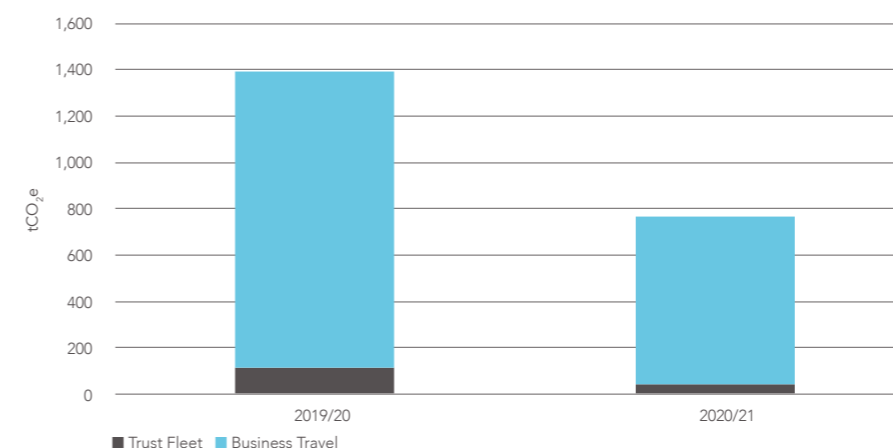


Fig 11: Carbon emissions for all travel in the 'Newcastle Hospitals Carbon Footprint Plus' boundary

- The carbon footprint for travel included in the Newcastle Hospitals Carbon Footprint boundary has reduced 45% from 2019/20.
- This is largely due to a reduction in business travel due to the COVID-19 pandemic.





## CLEAN AIR HOSPITAL FRAMEWORK

The Clean Air Hospital Framework is a self-assessment tool developed by Great Ormond Street Hospital and Global Action Plan, to help hospitals track progress and set ambitions on tackling air pollution in seven key areas; travel, procurement & supply chain, construction, energy, local air quality, communication & training and hospital outreach & leadership.

We have committed to becoming a Clean Air Hospital – rated Excellent on the Clean Air Hospital Framework by 2025, reaching an overall score of 70%.

- We have increased our score very slightly from 15% in our baseline year to 16% in 2020/21.
- There has been some progress in the themes of ‘local air quality’ and ‘design & construction’ related to air quality monitoring and management of demolition & construction sites.
- We will be working with key stakeholders this year to make progress towards our target this year.

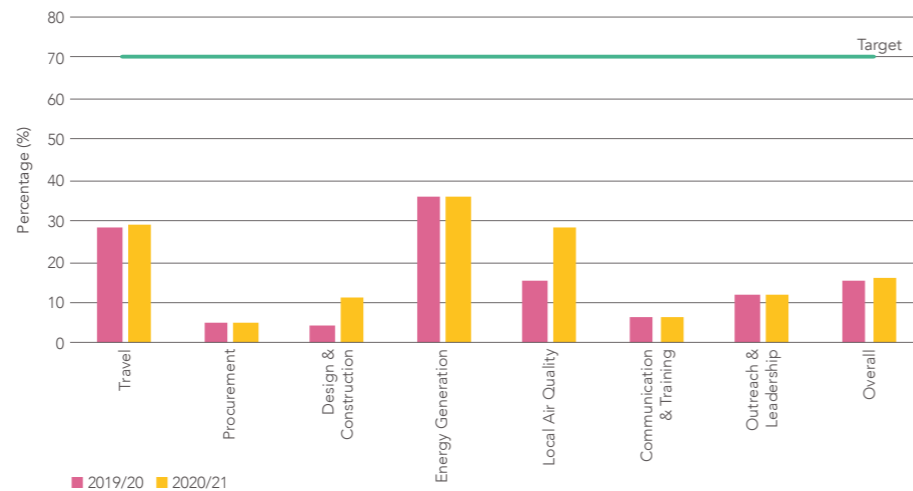


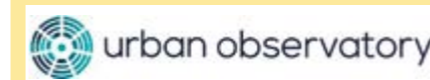
Fig 12: Clean Air Hospitals Framework scores from 2019/20 – 2020/21

## ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- We continued to electrify our fleet of vehicles and any new vehicles are required to be either hybrid or fully electric.
- Exceeded target for 10% of Trust fleet to be EV, and set new target for 90% by the end of 2021/2022.
- The Business Lease Car Scheme encourages staff to apply for a new electric or hybrid vehicle for business journeys, rather than using their own car. Pool cars can be leased through the scheme as well.
- The staff benefits scheme has continued to make electric vehicles a realistic and popular option for staff by making them available at competitive rates.
- Two clinical teams have commenced trials of electric bikes for travelling between sites and in the community.
- We have invested in new EV charging points at all of our main locations.
- We worked in partnership with Newcastle City Council to improve the dedicated cycling infrastructure along Queen Victoria Road accessing our RVI site and have increased the number of secure cycle parking spaces.
- A staff survey was carried out to find out how staff travel to work at the moment and what we can do to encourage more active and sustainable travel.
- Courier Hub established as a response to the COVID-19 pandemic has reduced emissions associated with home patient medicine delivery. ZMOVE bicycle couriers are supporting local zero emission deliveries (see case study).

## PLANS FOR THE NEXT YEAR

- Engage with Newcastle University (Urban Observatory) and Northumbria University in a programme of outdoor and indoor air quality monitoring across our RVI and Freeman sites, as part of the Clean Air Initiative.



- Travel and transport information for patients and visitors is being rationalised and re-designed with patients in mind to prioritise active and sustainable travel.
- Continue development of a web based parking system which will collect data on vehicle emissions, and will allow individual targeted travel planning for staff.
- Embed positive changes from virtual and remote consultations where beneficial to patients.
- Improve take up of bike to work and public transport passes in COVID recovery.
- Ensure ‘no idling’ is included in Trust parking policies.
- Work in partnership with Global Action Plan to develop the first region wide ICS Clean Air Hospital Framework.

## CASE STUDY: Pharmacy Delivery Hub

Newcastle Hospitals response to the Covid-19 pandemic provided an opportunity to test and accelerate some carbon reduction initiatives eliminating the need for many to travel to hospital.

One such initiative was an internally managed courier hub to provide a centralised, efficient method of quickly transporting healthcare equipment and pharmaceuticals to and from patients at home. The hub was established at the Freeman Hospital in October 2020 and is now typically distributing over 300 items per day using a range of vehicle types, including electric cargo bikes for short-range, local distribution, saving over 3000 patient journeys per month.

We used ZMOVE, a local low carbon courier, for home deliveries within 5 miles of the courier hub. Two large electric cargo bikes are used to make up to 70 deliveries per day.

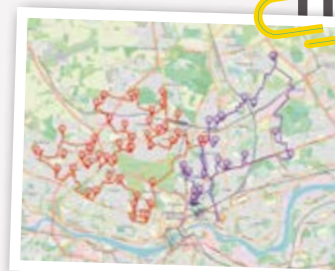
ZMOVE plan deliveries using routing software that engages Google bike routing algorithm to maximise delivery efficiency and minimise cost. Each bike performs deliveries over routes up to 40 miles in length.

The routing map from a typical two-bike service day is shown in the picture to the right.

Some of the benefits of this approach include significant environmental gains when compared to the use of a standard courier vehicle, with approximated savings of 549 kg of CO<sub>2</sub>e equivalent and 1195 g NO<sub>x</sub> emissions over the period; excellent patient experience offered by pre-delivery text notifications to patients giving an accurate arrival time and enabling live tracking of the delivery bike; community safety improvements through the use of small, low speed vehicles with riders able to easily interact with residents during transit.

Audrey MacNaughton, spokesperson for Salters Bridge low traffic neighbourhood said “Residents are delighted to see Newcastle Hospitals using bikes extensively in our neighbourhood – they demonstrate that Salters Bridge can be a fast link for safe commercial traffic and the bikes present much less risk to residents than larger vehicles (including electric cars and vans).”

Over 80% of the patients surveyed about the delivery hub were either satisfied or very satisfied with the service.





## 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.

### PERFORMANCE

- Despite challenges we have been able to consign 56% of healthcare waste as non-infectious, meaning we have maintained hazardous waste below our 2020 target levels.
- 28% of total waste generated was recycled or reused, or 47% of non-healthcare waste.
- The challenges faced during the COVID-19 response are explored in more detail on page 38.

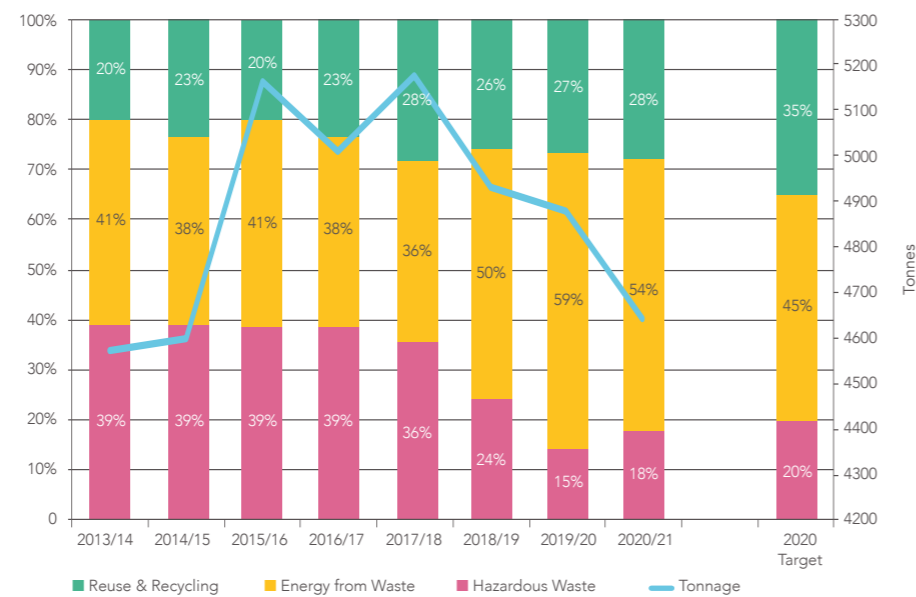


Fig 13: Segregation of clinical and non-clinical waste since 2013/14, with the 2020 target

**Despite challenges we have been able to consign 44% of healthcare waste as non-infectious, meaning we have maintained hazardous waste below our 2020 target levels**

### ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Maintained continuity of business operations despite service and industry challenges.
- Implemented a new auditing process aimed at ensuring we maintain strong waste segregation routines and waste hierarchy movement.
- Introduced new waste training videos for staff.
- Developed a new cannulation pack for Oncology to reduce waste, standardise practice and improve IV related infection rates.
- Avoided waste by making the decision to use reusable lab coats in new, large regional COVID testing lab.
- Installed food waste de-waterer in the RVI catering department; this food waste is then sent to an anaerobic digester to produce biogas for grid, and slurry for local farmland.
- Implemented better segregation of estates waste at the RVI.

### PLANS FOR THE NEXT YEAR

- Tender for a clinical waste contract to provide more certainty and ensure the Climate Emergency commitments are embedded into the contract.
- Re-introduce an improved furniture re-use scheme.
- Run a recycling project in collaboration with Nutricia.
- Improve signage around drinking fountains to encourage the use of reusable bottles instead of opting for single-use plastic.
- Continue to work collaboratively as part of the 'Towards plastic-free healthcare in Europe' project.
- Introduce MR64 initiative aimed at segregation and recycling of single use metal surgical instruments.
- Introduce PVC recycling for surgical masks at the RVI (aiming to repeat the success of PVC recycling at Freeman Hospital).





### CASE STUDY: New Waste Audit Process

Waste audits are a legal requirement of the Trust, and are carried out with a department manager. We identified opportunities to improve the departmental waste audit process that would enable the waste audits to not only meet the minimum legal requirements, but also provide greater assurance of compliance and improve environmental outcomes through increased staff understanding and responsibility.

The Waste Manager attended almost every clinical directorate's band 7s meeting to explain the proposed changes to the waste audit process, and get input from ward managers as key stakeholders.

The format of the waste audit is relatively straightforward and takes about an hour depending on the size of the ward/department. When the audit is scheduled, the area to be audited is sent the checklist we use to assess compliance.

Audit format:

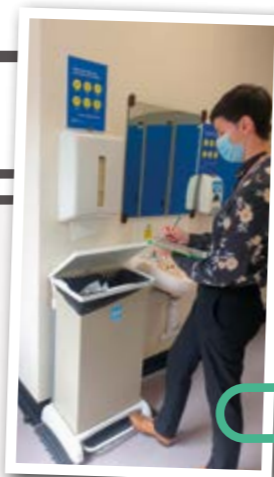
- Opening 5 minute conversation with the department manager (how are staff trained, waste awareness, do you know where to access information, what can we do to help, etc.).
- Ward walk, where we access as many rooms and look inside as many bins as is safely possible.
- Informal staff conversations. We try to speak with up to 3 members of staff as we move around the department to assess individual understanding of waste classification.
- Whilst on the department we assess the appropriate use of and condition of the bins and other receptacles in use and the requirement for fresh magnetic communication on bin lids.

Departments are scored and rated as Pass or Fail. Areas failing an audit will be provided with a list of actions which if followed would result in a pass within 3 months. Wards that do not pass then go through a ward improvement program, with support from the waste management team to train staff, update communications and ensure that the correct processes and procedures are followed.

The first department we audited in 2020 unfortunately did not pass the audit. However, after we worked with them they were re-audited and passed. The matron said, "I think the audit provided the focus we required to improve waste management and increase awareness so that it became the responsibility of all. Although we failed we were given very clear feedback and resources to improve were provided."

The aim of the audit is not about finger-pointing or only looking for examples of bad practice but about enabling us to maintain our usually very high standards, ensuring a consistent approach across all services and directorates. We are aiming to move waste up the waste hierarchy at every opportunity to achieve our targets in the Climate Emergency Strategy 2020-25.

The new audit process has allowed for a more open dialogue around sisters/department leads' understanding of waste management, and created an environment where staff can ask any questions they have. As sisters/department leads are responsible for the patient environment they manage this includes waste management. They are the go-to person for their staff if they are unsure of how to manage waste so it is important that they have the correct information, or know where to find information to answer these queries.



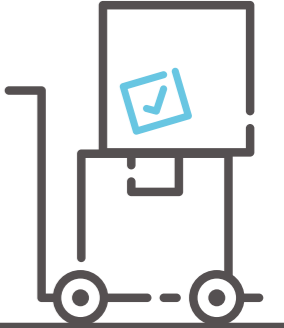
### CASE STUDY: Reusable Vacuette Transport Boxes

The Blood Sciences Department at Freeman Hospital provides a haematology, biochemistry, transfusion and immunology diagnostic and monitoring service both within the Freeman Hospital and for a large number of GP practices locally. The department processes approximately eleven to twelve thousand request per day and operates 24/7. Before the implementation of this project each sample was sent to the laboratory in an individual plastic bag which was discarded as soon as the specimen was opened.

Joanne Hall – Deputy Operations Manager, introduced reusable transport boxes after finding out that the Trust was ordering over one million plastic specimen bags each year. Having seen a similar solution in use Joanne succeeded in securing funding for a pilot with a GP practice, and the Phlebotomists at Freeman Hospital. A survey of the staff involved indicated that the boxes were well received and there were no issues raised during the pilot.

Joanne was then also successful with an application to the Trust's Climate Emergency Action Fund to expand the trial to include more GPs and departments, and to develop a reusable insert to be used to transport urgent specimens around the internal pneumatic system.





### THE MANAGEMENT OF NEWCASTLE HOSPITALS' WASTE DURING THE PANDEMIC

There have been significant challenges in the management of waste during the COVID-19 pandemic, both in the immediate weeks and months of the response and longer term.

#### SOME OF THE CHALLENGES:

- Increased service demand across all sites, including community clinics. Waste volumes also increased in areas not usually associated with the delivery of healthcare activity i.e. through increased use of face masks and other PPE - presenting a considerable logistical challenge.

- Installation of waste segregation systems for the Nightingale Hospital in Sunderland.
- Support for the vaccine trials taking place from May 2020 onwards.
- Ensuring segregation of waste and a return to 'normal' as soon as possible after the first wave in June. This single measure was key to achieving a much better percentage of waste classified as non-infectious throughout the remainder of the year, along with ensuring delivery of non-infectious healthcare waste bags to areas where patient infection rates were low.
- Installation of waste segregation systems, including new waste streams and recycling systems, in the new laboratory areas at the Integrated COVID Hub North East.
- Support for the vaccine roll-out across the region from Middlesbrough and Darlington to Penrith as well as support for ongoing projects such as the creation of temporary cataract theatres and the new Northern Centre for Cancer Care in Cumbria.

#### HEADLINE FACTS AND FIGURES:

- Waste volumes for 2020/21 decreased by 5% in comparison to the previous year but infectious waste volumes increased by 33%. There was a 200% increase in infectious waste volumes nationally.
- Hazardous healthcare waste volumes remained below 50% of the total healthcare waste generated.
- The percentage of non-healthcare waste recycled increased from 43% to 47% this year.



## 5.4 Procurement

### AIM

Embed sustainability and support for climate emergency action in to 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

- For the year 2020/2021 we are basing 1.8% of the total carbon footprint for procurement on actual data related to anaesthetic gases and inhalers.
- The rest is based on assumptions and average carbon factors for procurement categories.
- We aim to increase confidence in the data we report related to procurement of supplies and services, by increasing the percentage of our 'procurement' carbon footprint that is based on actual data rather than assumptions.

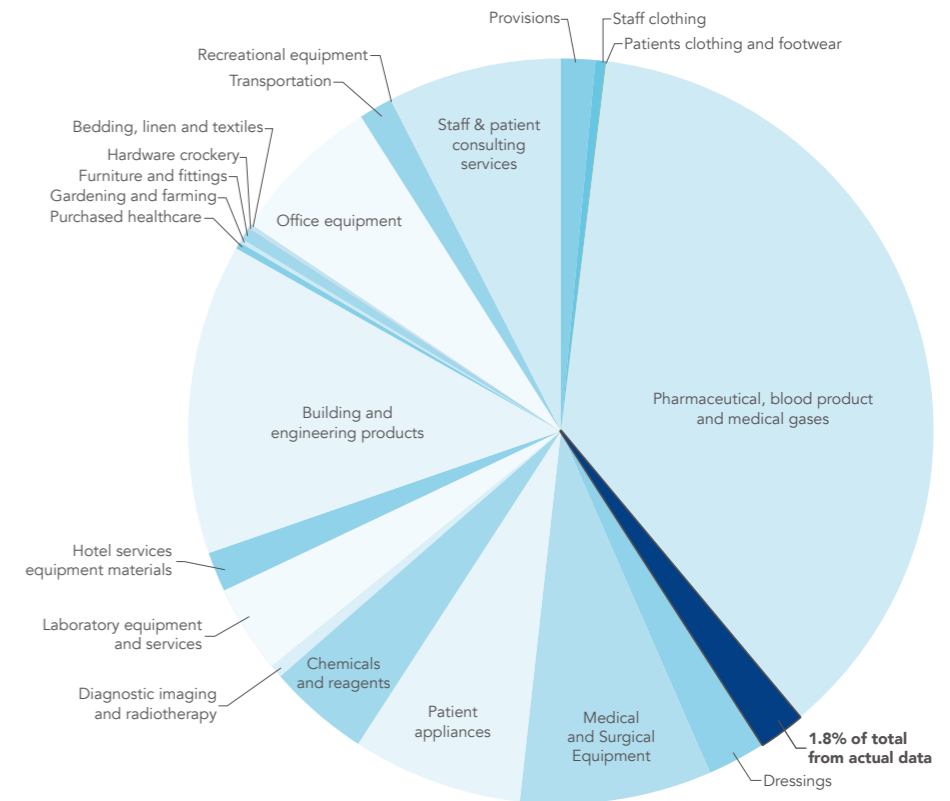


Fig 14: The proportional carbon emissions from procurement by category of spend, showing the proportion coming from actual data

### ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Sustainable Procurement Working Group established.
- Survey sent to all Trust suppliers with 500 responses received.
- 98% of suppliers who responded to our survey support our commitment to the Climate Emergency and 60% are interested in further engagement with us.
- Begun process to implement Silver Food For Life standard.
- 'Sustainable food for all' is now one of the three strands of the five-year Food and Drink Strategy.



#### PLANS FOR THE NEXT YEAR

- Standardise sustainability criteria for suppliers through all procurement routes.
- Run a series of supplier engagement webinars, and support those suppliers that need guidance calculating and reporting their carbon footprints.
- Improve our scope 3 carbon footprint data confidence, directly collecting carbon footprint data from suppliers.
- Deliver sustainability training to procurement staff as part of a programme to maximise the benefits of whole-life costing and the circular economy approaches.
- Achieve Silver Food for Life Standard for in-house catering.

#### **98% of suppliers who responded to our survey support our commitment to the Climate Emergency**

#### CASE STUDY: A Future Net Zero Supply Chain

This project was awarded a Shine Award for contributing to improving sustainability at Newcastle Hospitals.

Over 70% of the carbon emissions in the Newcastle Hospitals Carbon Footprint come from the goods and services we procure. Greener NHS has now set a clear aim that by 2030 the NHS will not procure from any supplier that does not have its own net zero target.

In order to begin addressing these carbon emissions a Sustainable Procurement Working Group was established this year, and as an initial action a supplier engagement survey was sent to 3,000 suppliers.

489 responded, and 98% pledge support to help Newcastle Hospitals achieve our net zero carbon goals. 64% already have carbon reduction targets or plans, 68% already measure and report their own carbon footprint and 57% are interested in attending an online workshop to be held in the summer 2021.

To take this engagement forward a number of webinars will be delivered in 2021 to provide suppliers with information, support and guidance. This will include a segment on how to calculate a carbon footprint and how we would like suppliers to provide that data to us. This will enable us to increase confidence in the data we report related to procurement of supplies and services, by increasing the percentage of our 'procurement' carbon footprint that is based on actual data rather than assumptions.

We will also use the webinar as an opportunity to engage suppliers as part of the stakeholder engagement plan mentioned in section 3.3.





## 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.
- Resilient care services that are adaptive to our changing climate.

### PERFORMANCE

- There has been a 23% reduction in the carbon footprint from anaesthetic gases, and a 50% reduction in the use of Desflurane, the most damaging of the volatile anaesthetic gases.
- Compared to the baseline year of 2019/20 there has been a 35% decrease in the total carbon footprint from inhaler prescribing.
- The impact of COVID-19 on these figures is not yet fully understood, but a reduction in some elective activity is a significant contributor.



Fig 15: Carbon emissions from anaesthetic gas use from 2019/20 to 2020/21

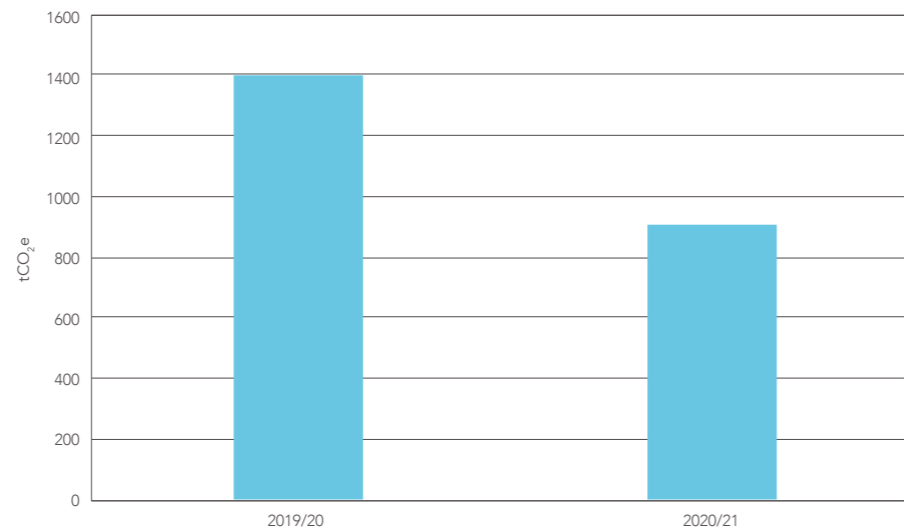


Fig 16: Carbon emissions from inhaler prescribing for 2019/20 to 2020/21

### ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Despite the enormous challenges the organisation has faced, there have been a number of significant achievements led and implemented by clinical staff this year.
- A reduction in carbon footprint from anaesthetic gases due to a combination of increased awareness of the environmental impact of anaesthetic gases among anaesthetists and reduced surgical activity due to COVID-19.
- A multi-disciplinary Sustainable Respiratory Care working group was established to progress action to reduce the carbon footprint related to inhaler use. Patient and prescriber surveys were undertaken and the findings used as a basis for a communications plan.
- The carbon footprint of the renal care pathway has been calculated by the Sustainable Healthcare Coalition in partnership with clinicians.
- Links have been made with the newly established Newcastle Improvement Faculty to embed sustainability into the quality improvement process and Institute of Healthcare Improvement methodology.
- Shine Award given to staff led project to remove single use plastic from Macular Injection Procedure.

### CASE STUDY: Sustainable Respiratory Care – Caring for patients who use inhalers

'Collaborating to reduce the carbon footprint of respiratory care through a detailed review of inhaler prescription and use' is a key aim of the Newcastle Hospitals' Climate Emergency Strategy for 2020-2025.

Every year, in the UK, there are 121,000 A&E attendances due to asthma, and the annual cost of caring for patients with asthma comes to an estimated £1.1 billion. Poor inhaler technique is linked to increased exacerbations of asthma and COPD.

As well as benefiting patients, improved inhaler technique also reduces waste of medicines and carbon emissions.

Metered dose inhalers (MDI) have more than 10 times the carbon footprint of dry powder inhalers (DPI). Checking which device type patients are on and considering if and when it might be appropriate to change, as well as reviewing inhaler technique, can help us reduce our carbon footprint and ultimately reach our goal of being a net zero carbon organisation by 2040.

A multi-disciplinary team has come together with representation from respiratory consultants, nurse specialists, pharmacists, sustainability team, children's and adults services, primary care and acute hospitals. Three key actions have taken place to date:

1. An inhaler technique review of Newcastle Hospitals' inpatients found that only half of patients on a DPI knew how to use it correctly, and less than a third of those using an MDI knew how to use it correctly.
2. A survey of prescribers found that only 9% of respondents discuss the environmental impact of inhalers with patients and 13% have discussed inhaler disposal with patients, but 46% of respondents expressed that they would educate patients about the environmental impacts of inhalers if they were provided with education and support to do so.
3. A poster has been created to bring together the key information that clinical staff need to ensure appropriate inhaler prescriptions and inhaler technique checks.





### PLANS FOR THE NEXT YEAR

- Appointment of a new Fellow in Environmentally Sustainable Anaesthesia.
- Continuation of the SageTech gas capture trial and the next phase of installation of an extraction machine for captured anaesthetic agents at the Freeman Hospital.
- Trial Nitrous Oxide cracking technology in the maternity unit and an ongoing review of piped nitrous oxide into theatres.
- Embed sustainability within quality improvement processes through the Newcastle Improvement Faculty.
- Provide staff with sustainable quality improvement methodology to enable them to implement their own sustainability projects, and support staff to understand the sustainability impact of departments, services and pathways.
- Develop and implement training for patients and clinicians on inhaler technique to improve management of illnesses and reduce inhaler use. Develop further communications and engagement to raise awareness and confidence amongst prescribers about the differences between MDI and DPI inhalers.
- Build up a bank of case studies of sustainable models of care and use the Shine Award to promote good practice.

### CASE STUDY: Removal of Gallipots from Macular Injection Procedure

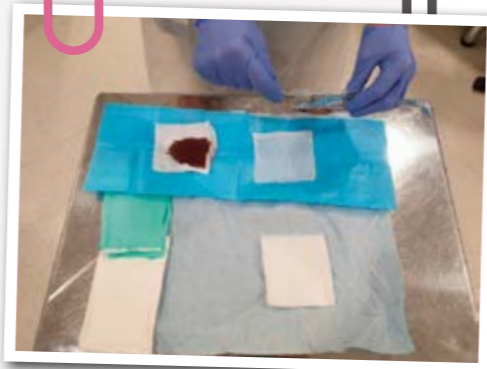
The original Macular Injection procedure included the use of 2 sterile 60ml plastic gallipots alongside a standard dressing pack. Iodine and Saline were poured into the gallipots which was then used by the injector to dampen sterile gauze with which to clean the patient's skin pre and post injection.

The two single use sterile plastic gallipots were then disposed of, amounting to 24,000 items including the packaging.

Healthcare Assistant Jason Fergus suggested that it would be possible to change the procedure and cease using the sterile gallipots, instead pouring the Iodine and Saline directly onto the gauze which were laid out on the sterile field.

Sterile gauze was placed onto the waterproof sheet that came as standard in the dressing packs to ensure a waterproof surface was between the gauze swab and the sterile field.

An evaluation of the new procedure found that all staff recognised that this was a cost effective change and most felt it was better for the environment.



## 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

- Sustainability included as a critical element of two major new build projects - working with the Passivhaus Institute to develop metrics which, if achieved, will be a UK first for an acute hospital.
- BREEAM 'outstanding' also being targeted and both projects include an all-electric design in line with zero carbon and clean air objectives.
- We have recognised that it is crucial to avoid locking carbon into these buildings for the future, and that they are as close to Net Zero Carbon in operation as possible.
- Biodiversity Action Plan carried out (see case study).
- Planted 100 trees across our estate.

**We have recognised that it is crucial to avoid locking carbon into these buildings for the future, and that they are as close to Net Zero Carbon in operation as possible**

### PLANS FOR THE NEXT YEAR

- Begin exploring options for living wall facades at various sites across our estate.
- Collaborate with AskFuse and Teesside University to complete a research project into the benefits of our planned dementia friendly wellbeing garden for the Freeman Hospital site.
- Begin transforming 'grey' locations identified by the Green Spaces Working Group through a 'Green the Grey' project using planting to make areas more visually appealing, biodiverse and better for health and wellbeing.
- Improve biodiversity of Freeman Hospital grounds through the implementation of 3 biodiverse areas with native species, wildflowers and insect hotels.
- Continue to act as key stakeholders in the development of the Net Zero Carbon Hospitals Standard.
- Progress two proposed new builds to financial business case with highest sustainability standards included.



### CASE STUDY: Biodiversity Action Plan

Towards the end of 2020/2021 we commissioned Capability North East to guide the process of developing site Biodiversity Action Plans (BAP) for the RVI and Freeman sites. BAPs are concise reports that note how a site sits within the wider landscape, proximity to sites and special interest and priority species of habitats, existing habitat and its conditions, where biodiversity enhancement opportunities exist and the actions to support this. They are useful tools for identifying priorities, specific actions, timelines and progress towards improving biodiversity. The metric selected to measure baselines and improvements is the Government's Natural England's Biodiversity Net Gain Metric 2.0 which is widely used as best practice metric tool.



The BAPs will contain site specific action plans that will detail the actions required to achieve the maximum biodiversity uplift; costed enhancements (where data allows); site map with enhancements annotated; and a plan to increase biodiversity on other sites.

### Early observations and recommendations

There is scope to increase the biodiversity contribution of our sites through a mixture of measures. Some work can be delivered by modifications to existing work program and others will require dedicated funding.

- Most biodiversity points come from trees, woodland and native hedgerow.
- Not a huge amount of available open space to significantly increase habitat quantity.
- Increase hedgerow for quickest and most biodiversity gain.
- Lots of amenity grassland that can become neutral or low land meadow grassland.
- Green walls will not have a significant biodiversity uplift but will help with slowing the flow and Sustainable Urban Drainage ambitions.
- Scope to increase bat and bird species through various installations (non-clinical areas).
- Non-native ornamental hedgerow to remove.

We are committing to understanding the importance of biodiversity and increasing the number and quality of biodiverse greenspaces for the wellbeing of staff, patients and visitors and understand that a truly greener estate needs to make space for nature too.







## 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

- Nine members of staff have received training through the Sustainability Ambassadors training.
- 99% of staff completing the annual sustainability survey rated sustainability as important.
- Six projects approved through the Climate Emergency Action Fund.
- 10 staff led projects awarded a Shine Award.
- Almost 300 Green Champions.
- Almost 1000 members of staff signed up to Shine Rewards and completed 15000 sustainable actions in 6 months.
- Over 1000 followers of @SustainableNUTH on Twitter.
- Six projects approved through the Climate Emergency Action Fund including the introduction of 2 new pool electric bikes for the community children's physiotherapy team.



### ACTIONS AND ACHIEVEMENTS FROM THIS YEAR

- Range of engagement tools launched to support the launch of the Climate Emergency Strategy to make it easy for staff to get involved with Shine.
- Piloted Sustainability Ambassador training based on the IEMA (Institute of Environmental Management and Assessment) Foundation Certificate in Environmental Management and a new network of Sustainability Ambassadors established to act as change agents across the Trust.
- Launched a £50,000 Climate Emergency Action Fund to kick start small-scale staff led sustainability projects.
- Sustainability and climate action is now included in job descriptions and person specifications, largely achieved through the development of a Sustainability in HR working group to lead on embedding sustainability into HR processes and procedures.
- Launched Shine Rewards bespoke staff engagement programme (see case study).
- Created a Shine Award for staff led projects shown to have a positive impact on one of the eight Shine themes.
- Green Champions network has been more active than ever with almost 300 members, and discussions taking place on a range of platforms including Teams, used for informal discussions and idea sharing.



## Almost 1000 members of staff signed up to Shine Rewards and completed 15000 sustainable actions in 6 months

### PLANS FOR THE NEXT YEAR

- Enhance sustainability training available and accessible to all staff. Ranging from short specific training videos, through to in depth sustainability ambassador courses.
- Embed sustainability throughout the workforce by further developing and enhancing the existing Green Champions network, ensuring all departments are represented.
- Develop the new network of Sustainability Ambassadors, to create a team of staff across the Trust leading on sustainability for their area of work.
- Host a bank of inspiring and motivational staff-led case studies.





### CASE STUDY: Sustainability Ambassadors

This year saw a successful pilot of the Advanced Programme for Sustainability Ambassadors (based on IEMA's Foundation Certificate in Environmental Management).

The first cohort of delegates consisted of a broad spectrum of roles (included our Head of Strategy, Planning & Capital Development, Directorate Manager for Clinical Research, Regulatory Compliance Manager, Data Manager, Senior Procurement Specialist, Human Resources Manager, Deputy Operations Manager for Labs, Senior Physiotherapist and a Vascular Registrar). The course culminated in a peer group presentation session with each delegate presenting a sustainability initiative they had instigated through applying their learning in their work place.

Following this pilot we have progressed to corporate membership of IEMA which enables us to access a wide range of courses to upskill our workforce as we aim to inspire, inform and empower our people to deliver Sustainable Healthcare in Newcastle (Shine).

#### Feedback from delegates:

*"I was already proud to work for a trust who took made the environment and sustainability a high priority and was delighted to have the opportunity to take part in the pilot IEMA Foundation Certificate in Environmental Management course. I learnt so much from this broad and fascinating course and it was specially adapted to apply to a healthcare setting. The sustainability team and guest speakers from the trust were passionate and knowledgeable. I certainly feel more hopeful about the future having met and interacted with so many like-minded individuals."*

**Lauren Shelmerdine**  
Trust Doctor, Vascular Surgery Specialty, Surgical Services Directorate

*"The course has been very informative, provided wind for the turbine to educate and motivate others."*

**Craig Boggon**  
Trainee Advanced Paediatric Critical Care Practitioner and Green Champion

*"This course really opened my eyes to the climate emergency and I have changed a number of aspects of my personal and professional life as a result."*

**Joanne Hall**  
Deputy Operations Manager, Corporate Laboratory - Blood Sciences  
Integrated Laboratory Medicine Directorate

*"The course allows participants to gain a good understanding of environmental change and how we can change small things to have a positive impact. Great as a starting point for those with an interest in sustainability."*

**Sean Scott**  
Regulatory Compliance Manager, Clinical Research Directorate

*"This illuminating, relevant course deepened by understanding of the global challenges that we face, reinforced the need for change and left me feeling empowered to take a lead in implementing some local solutions. I would recommend it for all of those who are prepared to be an agent for sustainability change and those who just want to know more and/or change their own behaviours."*

*Having passionate members of the sustainability team present their role / local case studies worked particularly well to illustrate the learning, enrich the conversation and inspire change."*

**Hannah Powell**  
Directorate Manager, Clinical Research Directorate

### CASE STUDY: Shine Rewards

Behaviour change is an important part of the sustainability agenda. With almost 17,000 staff across many sites, we cannot lead the way in sustainable healthcare without the support of our employees. We wanted to deliver a brand new, behaviour change project that is tailored to Newcastle Hospitals and our values, is current and can adapt according to staff and public interest, and one that rewards staff for making a difference.

Shine Rewards encourages employees to engage in energy saving, sustainable travel, waste reduction and other sustainable actions through a bespoke website and app, exclusively for Newcastle Hospitals staff.

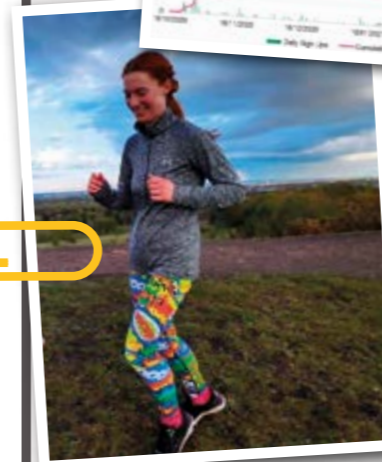
Those who earn the most points each month can win a voucher of their choice, with a charity donation dedicated to the winning team every six months.

Shine Rewards launched in October alongside our Climate Emergency Strategy. In less than 6 months, over 900 staff signed up and completed over 15,000 sustainability and wellbeing actions.

Staff are logging a variety of actions in all Shine key action theme areas. Actions around recycling and reducing plastic use are particularly very popular. Almost 130 people have read our Climate Emergency Strategy and we have had 48 staff suggestions through the app.

Staff are sharing the sustainable actions they are taking on social media, including from Trust Team accounts.

On the 1st February we launched an active wear giveaway to encourage staff to use active travel methods to get to work. Thanks to the kind support of Newcastle Hospitals Charity we are offering free Sundried active wear tops to the first 450 staff to register a sustainable journey to work on Shine Rewards.



## 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](mailto:nuth.environment@nhs.net)

Or write to us at: Sustainability Team (Estates Department)  
Royal Victoria Infirmary  
Queen Victoria Road  
Newcastle upon Tyne  
Tyne and Wear  
NE1 4LP

You can follow us on Twitter: [@SustainableNUTH](https://twitter.com/SustainableNUTH)



## 7. References & Acronyms

<sup>1</sup> Notes about methodology:

- The Newcastle upon Tyne Hospitals NHS Foundation Trust has adopted an operational control approach to establishing the boundary. The methodology adopted in line with the Greenhouse Gas Protocol (GHGP) and the BEIS Environmental Reporting Guidelines. The calculations were completed on the SmartCarbon™ Calculator using the UK Government emissions factors.
- CO<sub>2</sub>e 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<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>). Different activities emit different gases. Using CO<sub>2</sub>e allows all greenhouse gases to be measured on a like-for-like basis.
- For National grid electricity consumption, The Newcastle upon Tyne 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.
- A full SECR compliant report is available on request.

<sup>2</sup> 100% of our purchased electricity is REGO (Renewable Energy Guarantees Origin) certified renewable sources. We follow GHGP carbon accounting principles and report the grid average carbon emissions factor in our carbon footprint data.

AAGBI

Association of Anaesthetists of Great Britain & Ireland

BEIS

Department for Business, Energy & Industrial Strategy

HEFMA

The Health Estates & Facilities Management Association

IEMA

Institute of Environmental Management & Assessment

ICS

Integrated Care System

IHEEM

Institute of Healthcare Engineering & Estate Management

NEECCO

North East England Climate Coalition

NPAG

National Performance Advisory Group

RCN

Royal College of Nursing

Some images included within this report were taken before 2019 and therefore before any COVID restrictions were in place.

Icons throughout sourced from [www.flaticon.com](http://www.flaticon.com)



Little  
actions can  
have great  
impacts