

# The Green Plan 2022



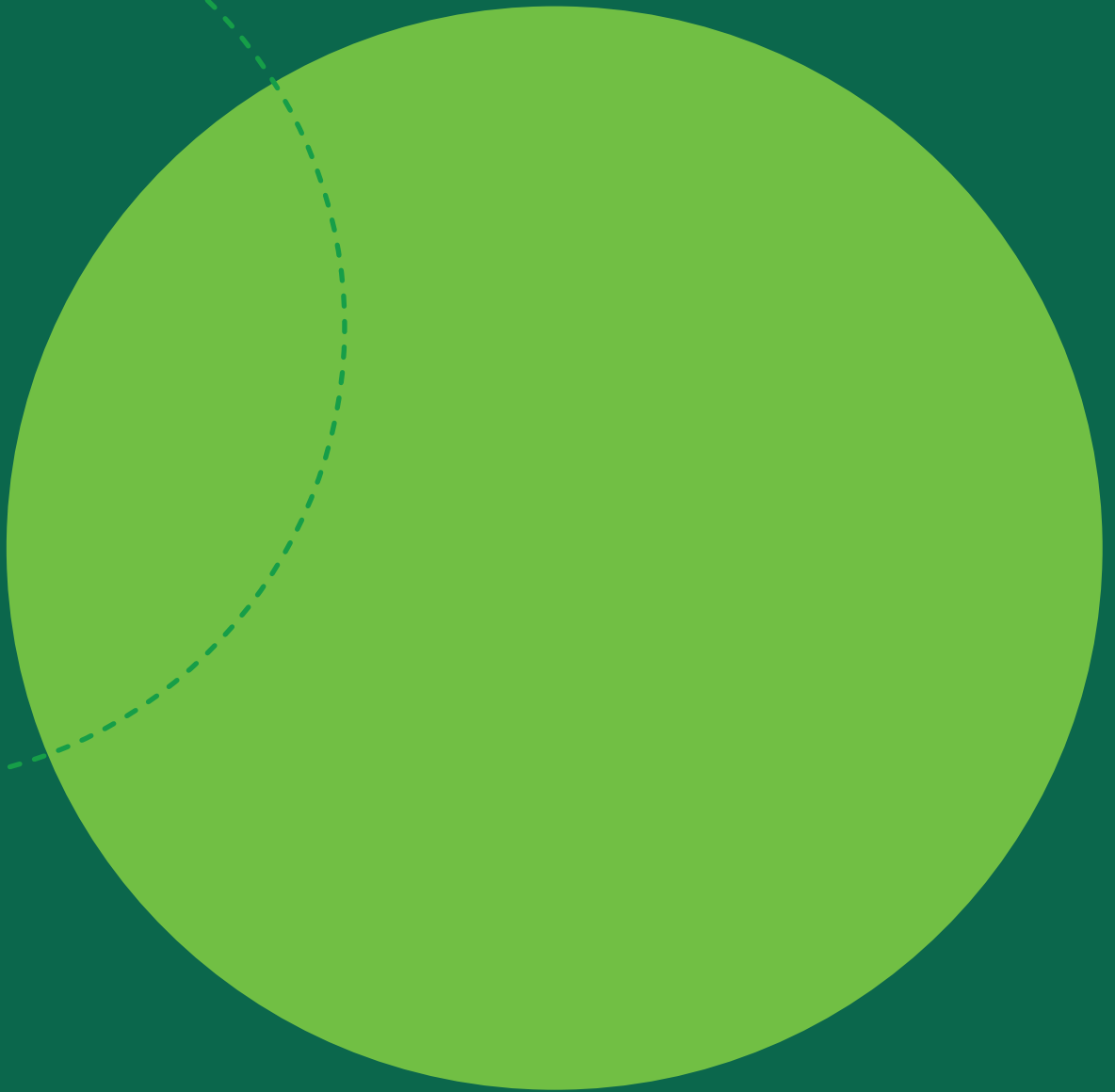
**HEALTHIER PLANET**  
**HEALTHIER PEOPLE**



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# 1. Foreword





# 1. Foreword

As the executive lead for sustainability, I am delighted to introduce our Green Plan, which details how Leeds Teaching Hospitals NHS Trust will support the NHS to become the world's first net zero health service.

The Trust's vision is to be the best for specialist and integrated care, and improve the health of our patients through the provision of high quality care.

We recognise that if we are to provide the best possible care to our patients and improve their quality of life, we need to significantly reduce our impact on the environment. In 2019 Leeds City Council declared a climate emergency; since then, organisations and individuals across Leeds have come together to work towards a collective goal of making Leeds a zero carbon, nature friendly and socially just place to live, under the name Climate Action Leeds.

Our Green Plan identifies a framework of interventions that are needed to help us become one of the greenest NHS hospital Trusts in the UK and, as an anchor institution, play a vital role in reducing carbon emissions across Leeds.

With the NHS contributing 5% of all UK carbon emissions, we must recognise that we are a significant part of the problem and that we can also be a significant part of the solution.

Reaching net zero is a key agenda at present, and the Trust has incorporated sustainability measures into the day-to-day running of our hospitals for several years. We know that to reach our target of becoming net zero by 2040 we will have to make some tough decisions and introduce radical changes. The key to our success will be our people and ensuring everyone understands the important role they can play both individually and within their CSUs.

I am committed to embedding sustainability across our organisation, supported by Libby Sutherland, the Head of Sustainability, and the wider team so that we can deliver a greener NHS and create a healthier environment for patients, staff and the communities we serve.

**Craige Richardson**  
Director of Estates and Facilities

**Libby Sutherland**  
Head of Sustainability

## 2. Highlights to date graphic



# 2. Highlights to date graphic

## ENERGY EFFICIENCY

We've invested over £22.3 million on energy efficient projects including air source heat pumps, solar panels, thermal glazing and connecting to the low carbon district heating network in Leeds. Delivering carbon saving of 1800 tonnes co2e.

DELIVERING A 15% CARBON REDUCTION ON COMPLETION



## ACTIVE TRAVEL

We have been awarded a silver cycle friendly employer by We are Cycling UK.



## SUSTAINABLE TRAVEL

Our Sustainable Travel Plan looks at ways to reduce the number of cars driving to and from our sites, including use of public transport and promoting walking, cycling, and running.

100% OF TRUST SHUTTLE BUSES ARE NOW LOW OR ULTRA LOW EMISSION



## CARBON LITERACY PROJECT

We are rolling out training to educate and empower all colleagues to take action against climate change. We are delighted to have been awarded silver accreditation within Estates and Facilities CSU.

WE ARE THE FIRST CARBON LITERATE NHS HOSPITAL TRUST

Carbon Literacy Project



ON ROUTE  
**NHS**  
**ZE**

**HEALTHIER**  
**HEALTHIER**

**ANAESTHETIC GAS**

By switching from sevoflurane, we reduced our carbon footprint by over 3.9%.

3.9% REDUCTION IN CARBON EMISSIONS

# OUR TE TO ET RO

# R PLANET R PEOPLE



## ONLINE CONSULTATIONS

Secure video consultations reduce unnecessary travel, making it easier for people to stay at home.

HELPED SAVE OVER 100 TONNES  
OF CO2 IN 5 MONTHS



## STAFF ENGAGEMENT SCHEMES

The GRASP campaign encourages staff to save energy by switching off electrical devices, recycling and reducing single-use plastics. GRASP champions meet regularly to share best practice and promote greener ways of working.

OVER 2,000 TONNES OF  
CARBON SAVED SO FAR



## GREENING OUR FLEET

We continue to introduce electric vehicles into our fleet, including four fully electric HGV's, 7 small vans and one car.

## GREEN PLAN

We launched our Green Plan in 2020, and colleagues across the Trust are championing projects that will help us reduce our carbon footprint. We aspire to become one of the greenest NHS Trusts in the UK and are committed to becoming carbon neutral by 2040.

33% REDUCTION IN CARBON  
EMISSIONS SINCE 2013



45% REDUCTION IN CO2e EMISSIONS  
GENERATED PER PATIENT SINCE 2013



## THETIC SES

m desflurane to  
duced emissions  
50%.

ON IN TOTAL  
MISSIONS



# 3. Introduction





# 3. Introduction

## 3.1 Sustainability at LTHT

Leeds Teaching Hospitals NHS Trust (LTHT) aspire to become one of the greenest NHS Trusts and has set a clear commitment to improving sustainability throughout our organisation and the wider region.

At LTHT we recognise the enormous challenge that the issue of climate change presents to our city and the range of impacts climate change is having and will inevitably have on our patients. We have undertaken significant work over the past several years to reduce our contribution to climate change and improve our overall sustainability performance. This has included publishing a Carbon Management Plan, Sustainable Development Management Plan (SDMP) and most recently the Green Plan.

The Trust has recognised the need to incorporate sustainability into our activities since 2011, with the adoption of our first SDMP and Carbon Management Plan. A second SDMP was then adopted in 2018, followed by a Green Plan in 2020, both of which updated the Trust's objectives and commitment to sustainability priorities. The Trust has a sustainability team within the Estates and Facilities department, including a dedicated Head of sustainability, Energy Manager and Waste Manager. This team works to progress the sustainability agenda throughout the organisation to implement the aims, ambitions and objectives established in previous strategies and now those in this Green Plan.

## 3.2 Why do we need this strategy?

Climate change poses a significant threat to our environment and is already causing extreme weather events to occur more frequently and in greater scale. Many organisations such as the Government and Leeds City Council have, in turn, declared a climate emergency. The term 'climate emergency' is defined as 'a situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it'. However, an increase in heatwaves, droughts, storms, and floods will also lead to increases in health problems such as cancer and disease, increasing the pressure on the healthcare sector.

In August 2021, a report published by the Intergovernmental Panel on Climate Change reiterated that climate change poses a significant threat to the environment, stating that irreversible changes could be seen if action is not taken urgently. Climate change is also now considered the greatest environmental threat to global health of the 21st century. This has been echoed by NHS England CEO



Amanda Pritchard, who has stated that ‘climate change is a health emergency’. The interdependencies between climate and health are widely supported by the medical community, including but not limited to the British Medical Association, the Royal College of Nursing, and the Royal College of Physicians. The need for healthcare organisations to take action on climate change is now urgent.

Aligned with the Climate Change Act 2008, the UK has set a mandatory target to reduce carbon emissions to net-zero by 2050. As the UK’s largest public sector employer, the NHS contributes to approximately 4-5% of the nation’s carbon emissions. The organisation can therefore play a substantial role in supporting this nationwide transition to net-zero carbon emissions. The NHS has set two net-zero targets, to achieve net-zero by 2040 for the NHS Carbon Footprint and by 2045 for the NHS Carbon Footprint Plus. Figure 1 details the scope of these two carbon footprints.

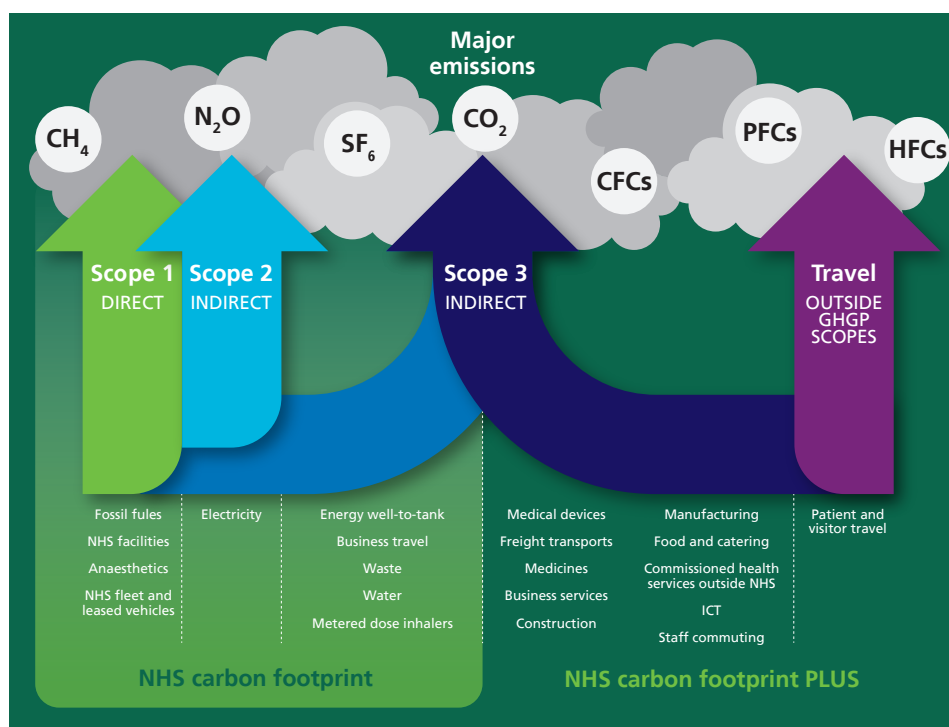


Figure 1

In January 2020, the CEO of NHS England, announced the “For a Greener NHS” campaign. This campaign seeks to provide top-down support to assist NHS Trusts in reducing their impact on the environment and improving health. The campaign builds upon the substantial progress already made by the NHS to improve sustainability and provides high-level backing to ensure the NHS can achieve net-zero. To become a net-zero health service, reduce air pollution, and reduce waste the NHS requires the dedication of all Trusts, colleagues, and partners. The organisation has formed an expert panel to map the best path for the NHS to become carbon net-zero, the findings of which shall be continually reviewed by the Trust and used to update this plan as required.

### 3.3 About this strategy

This Green Plan builds upon and replaces our previous Green Plan, SDMP and Carbon Management Plan. The Plan renews our sustainability targets and objectives and establishes the vision for sustainability within the Trust over the next three years.

This strategy has been developed in line with Greener NHS and NHS England and Improvement guidance, and reflects national priorities established within the Delivering a Net Zero Carbon National Health Service report.

The strategy aims to ensure that the Trust is aligned to the NHS's wider ambition to become the first healthcare system in the world to reach net zero carbon emissions. This Plan will aim to prioritise interventions that will enable the Trust to continue improving patient care quality whilst delivering carbon reductions and improving our wider sustainability performance. The strategy will also support increasing efficiency throughout the organisation.

A three-year time frame has been chosen to implement this strategy to provide a balance between delivering quick carbon reductions in some key areas and enabling strategic development across other more complex areas. The Plan has been approved by the board and will be reviewed at least annually, with progress against the action plan reviewed often.

### 3.4 Areas of focus

This Green Plan will focus on nine core areas, aligned to the key drivers for change within the NHS and our key sources of carbon emissions. The key areas of focus are as follows:

- Workforce, leadership and partnerships
- Sustainable care models
- Medicines
- Estates and facilities
- Digital transformation
- Travel and transport
- Food and nutrition
- Supply chain and procurement
- Biodiversity
- Climate change adaptation



# 4. Our carbon impact



# 4. Our carbon impact

## 4.1. Carbon baseline

In October 2020, NHS England published the Delivering A Net Zero National Healthcare Service report which details the sector-wide approach on delivering carbon reduction. Within this report NHS E&I have established the Scope of the NHS Carbon Footprint and the NHS Carbon Footprint Plus. Our carbon baseline has been developed in accordance with the NHS Carbon Footprint. This encompasses Scope 1 direct emissions must be reduced to net-zero by 2040, and the Scope 2 and 3 indirect emissions which must be reduced to net-zero by 2045. The scopes of the NHS Carbon Footprint and NHS Carbon Footprint Plus are defined in Figure 1 above.

In addition to the Carbon Baseline, the Trust is also proactively working to develop methods to monitor our Carbon Footprint Plus, which will be included in the scope of our Carbon Footprint in our next Green Plan for 2025. The following aspects which produce CO<sub>2</sub>e emissions are included in our Carbon Footprint:

- Gas
- Oil
- Anaesthetic Gases
- Fleet and leased vehicles
- Electricity
- Water
- Clinical and Non-Clinical Waste
- Inhalers
- Business Travel

Since the publication of the first Green Plan in 2020, we have expanded the scope of our Carbon Baseline to include the carbon impact of metered dose inhalers (MDIs). The medicines used in MDIs have a high global warming potential upon use and are one of the largest contributors to the carbon footprint of medicines in the NHS alongside anaesthetic and medical gases. The emissions of the inhalers issued within the Trust have been calculated from 2013-14 to present and included within Scope 3 of our carbon baseline.

This encompasses Scope 1, scope 2 and some scope 3 emissions identified as carbon footprint, which need to be reduced to net zero by 2040 and scope 3 emissions identified as carbon footprint plus which need to be net zero by 2045.





The following aspects which produce CO<sub>2</sub>e emissions, which we influence but are outside of our direct control, are included within our Carbon Footprint Plus:

- Staff commuting
- Patient travel
- Visitor travel
- Purchased goods and services

## Methodology

The Trust's carbon footprint is measured by recording annual emissions of carbon dioxide equivalent (CO<sub>2</sub>e) emissions. Our CO<sub>2</sub>e emissions for the year 2013/14 are used as our baseline year, against which all subsequent years will be compared. This is also the year against which we will monitor our progress against our carbon reduction targets. In 2013-14 our carbon footprint was 107,506 tonnes of CO<sub>2</sub>e (tCO<sub>2</sub>e). This baseline figure was established by combining measured emissions and estimated emissions where primary data was unavailable. Improving the measurement of our carbon baseline was an action within the previous SDMP and Green Plan, and we are continuously working to improve this.

In 2020 the Greener NHS published the Delivering a Net-Zero National Health Service Report, which established the requirements for reporting greenhouse gas emissions within the NHS. In line with this guidance, we updated our carbon baseline and split our footprint out into our Carbon Footprint and Carbon Footprint Plus, in line with Figure 1 above. This resulted in a lower Carbon Footprint than we reported in previous strategies as several aspects are now reported as part of our Carbon Footprint Plus. Our direct Carbon Footprint in our baseline year 2013/14 was 80,418 tCO<sub>2</sub>e. Our Carbon Footprint Plus, which includes emissions that we can influence but are outside of our direct control, are measured from a baseline year of 2021/22 and total an estimated 277,138 tCO<sub>2</sub>e.

The measured data presented in Table 1 has been calculated by multiplying actual consumption data (e.g. kWh electricity) by a carbon emission conversion factor. All carbon conversion factors (except for anaesthetic gases) are sourced from the Department for Business, Energy and Industrial Strategy (BEIS) greenhouse gas reporting figures. This provides the annual CO<sub>2</sub>e emissions for each aspect we have monitored. We report our annual emissions in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) emissions.

*Table 1 – Carbon Footprint - Annual Trust Emissions Baseline Year*

Year	Electricity	Gas	Oil	Water	Clinical Waste	Non-Clinical Waste	Anaesthetic Gases	Fleet Vehicles	Business Travel	Inhalers	Total
2013-14	9,957	56,254	0	760	4,039	1,458	7,854	97	4,412	64	84,830

Table 1 demonstrates our Carbon Footprint. This measures the Scope 1, 2 and 3 emissions that we, as a Trust, have direct control over reducing. This year will be used as the benchmark against which we monitor our carbon emissions reduction progress towards our 2040 net zero Carbon Footprint target.

*Table 2 – Carbon Footprint Plus – Annual Trust Emissions Baseline Year*

Year	Procurement	Patient Transport	Visitor Travel	Commuting	Total
2021/22	254,403	1,843	1,545	19,347	277,138

The figures presented in Table 2 are estimated using procurement data and travel surveys. We have worked with CO2 Analysis to calculate the total carbon footprint from every item and service we procure as a Trust. Therefore, these figures have been reincorporated into our overall carbon footprint. These fall under our Carbon Footprint Plus. 2021/22 has been used as the baseline year for these figures as it is the most recent year, we have a complete set of data.

This year will be used as the benchmark against which we monitor our carbon emissions reduction progress towards our 2045 net zero Carbon Footprint Plus target. This is the first year this has been included within our Green Plan and there are still limitations in the data available to quantify our full Carbon Footprint Plus. We will continue to work to improve the accuracy of our data collection and estimation methodology for our Carbon Footprint Plus.

### **Our carbon performance**

The Trust has undertaken a significant programme of interventions since 2011 to reduce our carbon footprint and improve our overall environmental impact. With the adoption of our SDMP in 2017 and Green Plan in 2020, we have had a renewed focus on tackling these emissions, reducing air pollution and minimising waste. The interventions taken have led to an overall reduction in the Trust’s total annual emissions, which is supporting our ambition to become net-zero by 2040. This section details the carbon performance of each key aspect.



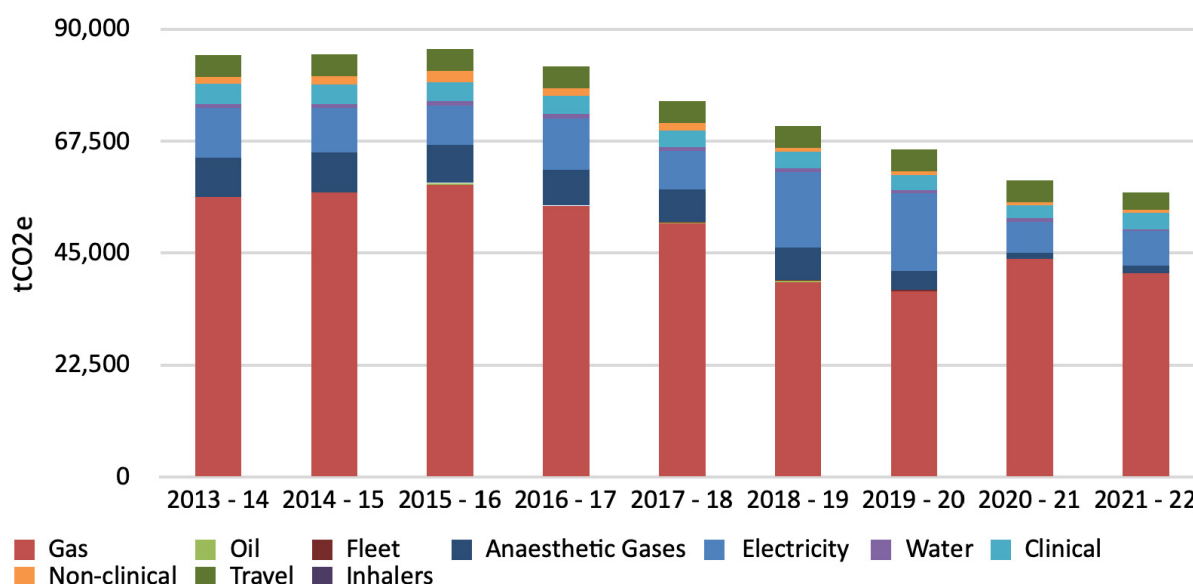
*Table 3 - Annual Emissions Reductions*

Year	Carbon Footprint	Percentage Change
2013-14	84,830	0%
2014-15	84,942	0.1%
2015-16	85,951	1%
2016-17	82,574	-3%
2017-18	75,496	-11%
2018-19	70,550	-17%
2019-20	65,838	-22%
2020-2021	59,685	-30%
2021-2022	57,212	-33%

As shown in Table 3, the Trust has achieved a 33% reduction in total annual emissions since the baseline year 2013/14, from 84,830 tCO<sub>2</sub>e to 57,212 tCO<sub>2</sub>e. Due to the change in scope of our Carbon Footprint and the removal of estimated emissions, this is a greater carbon reduction than we had previously forecast. We are currently on track to achieve our interim target of an 80% reduction of our Carbon Footprint by 2032. This is not a mandatory target but serves as a tool against which we can monitor our progress to ensure we are progressing at a sufficient rate to meet the net-zero 2040 target.

### Summary of key aspects

*Table 4 – LTHT Total Annual Carbon Footprint Emissions*





## Fossil fuels

Carbon emissions from gas have reduced by 27% since the baseline year, a 15,123 tCO<sub>2</sub>e reduction. This reduction can largely be attributed to the refurbishment of the Combined Heat and Power units used to supply heat and electricity to St. James' University Hospital (SJUH) and Leeds General Infirmary (LGI) that took place 2018/19 to 2019/20. This refurbishment was able to improve efficiency, ensuring that the CHPs were consuming less gas and therefore producing less carbon.

Other measures have also been implemented across our estate to also drive a reduction in the amount of fossil fuels consumed. In 2021 the Trust was successful in our bid to secure ~£13 million in funding through the Public Sector Decarbonisation Scheme (PSDS), to upgrade our estate. This funding has been used to fund the installation of Solar Photovoltaics (PV) at Chapel Allerton and Wharfedale Hospital, air source heat pumps (ASHPs), double-glazing windows, upgrades to our Building Management System (BMS). With these measures we expect to drive a further 3,700 tCO<sub>2</sub>e reduction. We have now secured a further £9.3 of PSDS funding which will be used to create a further 10 connections to the district heat network at our SJH site replacing the fossil fuel energy supply into 10 buildings with a low carbon alternative from the waste to energy plant. The funding will also be used for roof replacements, draft proofing and insulation upgrades to the site. These interventions will save a further 1,800 tCO<sub>2</sub>e per year.

## Fleet

Our fleet emissions have reduced by 39% from the baseline year from 97 tCO<sub>2</sub>e to 59 tCO<sub>2</sub>e. This has been due to the Trust moving to more efficient vehicles. We now lease our fleet vehicles from Leeds City Council (LCC). A clause within the contract stipulates that all vehicles leased from LCC must be low or ultra-low emissions vehicles, which has reduced our fleet emissions and contribution to air pollution.

The Estates and Facilities Team have also capitalised on opportunities to remove fleet vehicles from the road and rationalise our fleet, for example replacing standard parking meters at some sites with card only payments to remove the requirement to travel to empty the coins.

A large reduction in emissions attributed to fleet mileage was observed between 2018/19 and 2019/20, this was due to a reduction in mileage. The Travel team have also worked to improve the data collection methodology, leading to more accurate and reliable emissions data.



## Electricity

Since the baseline year, the carbon emissions associated with electricity consumption at the Trust has reduced by 30%. In 2021/22 electricity emissions at the Trust were only 6,993 tCO<sub>2</sub>e compared to 9,957 tCO<sub>2</sub>e in the baseline year.

This reduction has been achieved following a significant spike in emissions in between 2018/19 and 2019/20 due to the refurbishment of the Combined Heat and Power units used to supply electricity to St. James' University Hospital (SJUH) and Leeds General Infirmary (LGI). One of the key interventions from the previous SDMP was to refurbish and upgrade the CHPs through the Generating Station Complex (GSC) to improve efficiency and deliver carbon savings. In order to upgrade the CHPs, they were required to be taken offline resulting in an increase in electricity imported from the grid.

In 2020/21, the year the CHPs were restarted, total electricity consumption fell by 19% compared to the 2017/18 the most recent year the CHP units were online, demonstrating an improvement in efficiency.

Since the baseline year, the carbon intensity of the electricity imported from the grid has also decreased significantly, leading to a greater reduction in emissions than has been achieved through a reduction in consumption alone. In the baseline year a single kWh of electricity from the national grid produced 0.48 kg CO<sub>2</sub>e, due to the increase in the amount of electricity produced through renewable sources, a single kWh in 2021 produced less than half the amount of carbon emissions at 0.21 kg CO<sub>2</sub>e. Therefore, the carbon emissions from our gas consumption have reduced at a faster rate than we have reduced our consumption.

## Water

The Trust has reduced the carbon emissions from water consumption by 57% since the baseline year. In 2013-14 emissions totalled 760 tCO<sub>2</sub>e/annum which has been reduced to 327 tCO<sub>2</sub>e/annum. This overall reduction has been achieved despite an increase in our total water consumption, this is due to a change in the BEIS carbon factor for water supply. The water supply and water treatment factors are now calculated based on the 2020 data from the UK water companies Carbon Accounting Workbooks (CAW). Previously the values were calculated from a UK water industry publication from 2012 that is now considered out of date. This amendment has seen a large decrease in the conversion factors associated with water supply and water treatment compared to last year's conversion factors. This is due to the updated method reflecting the decarbonisation of the electricity grid since 2012, and the updated factor now provides a more accurate representation of the carbon impact of water supply and treatment for 2021/22.

It is important to note that whilst we have achieved some reductions in water consumption since our baseline year, through the employment of a contractor to perform leak prevention services, our overall water consumption has increased. This has also saved the Trust money, by removing the cost of wasted water from leaks. Between 2019/20 and 2020/21 water consumption increased by 17% and increased by a further 8% between 2020/21 and 2021/22. This is likely due to increased hygiene measures due to the pandemic.

### **Anaesthetic gases**

The Trust runs 56 operating theatres located throughout SJUH, LGI, Chapel Allerton Hospital (CAH) and Wharfedale Hospital (WAR) which are used to carry out a variety of surgeries. The majority of the medical procedures conducted within the operating theatres are carried out whilst patients are under general anaesthetic. To do so patients are anaesthetised via the use of volatile agents, most commonly using Sevoflurane, Desflurane and Isoflurane.

These volatile gases release greenhouse gas emissions upon use, but the impact varies on the type of gas used. Sevoflurane has a Global Warming Potential (GWP) of 440, compared to Desflurane which has a GWP of 6,810. Therefore, the environmental impact of Sevoflurane is approximately 15 times less than that of Desflurane.

In the baseline year, the use of these three gases produced 7,848 tCO<sub>2</sub>e. In 2021/22 the total emissions from use of these gases have decreased by a huge 81% to 1,467 tCO<sub>2</sub>e. This is a significant saving and has been achieved by encouraging anaesthetist colleagues to use Sevoflurane in place of Desflurane, where clinically appropriate. This is a slight increase on the 2020/21 emissions which were lower due to changes to the number of operations carried out during 2020 due to the COVID-19 pandemic.

As the use of anaesthetic gas is essential within the Trust, we are unable to reduce the emissions from the gases to zero. However, there is still scope to reduce the emissions closer to zero by substituting Desflurane with Sevoflurane further. The Trust has committed to joining the regional campaign to be Des Free by 2023. As such we are currently exhausting our existing stocks to reduce waste and allow time for our clinicians to adapt their practice. The Theatres and Anaesthesia department are supporting clinicians with additional training and educational opportunities throughout this time to support the transition.

It should be noted that the intervention to reduce Desflurane consumption only began in September of the 2019-20 year, therefore, further reductions in emissions are possible. The anaesthetist team who championed this work were also nominated for a BMJ Award, in recognition of their work.





Following from the success of minimising Desflurane use, this Green Plan will focus on addressing the impact of nitrous oxide. Nitrous oxide and Entonox are used widely within the Trust for a number of procedures. Nitrous oxide is a greenhouse gas with a global warming potential of 298, meaning it is 298 times more potent than carbon dioxide as a greenhouse gas. Quantifying the amount of nitrous oxide wasted during procedures carried out within the Trust is challenging to quantify. Using tools provided by NHS England and Improvement, the Trust will work to quantify the overall emissions associated with our nitrous oxide use and wastage and identify a strategy for reducing these emissions.

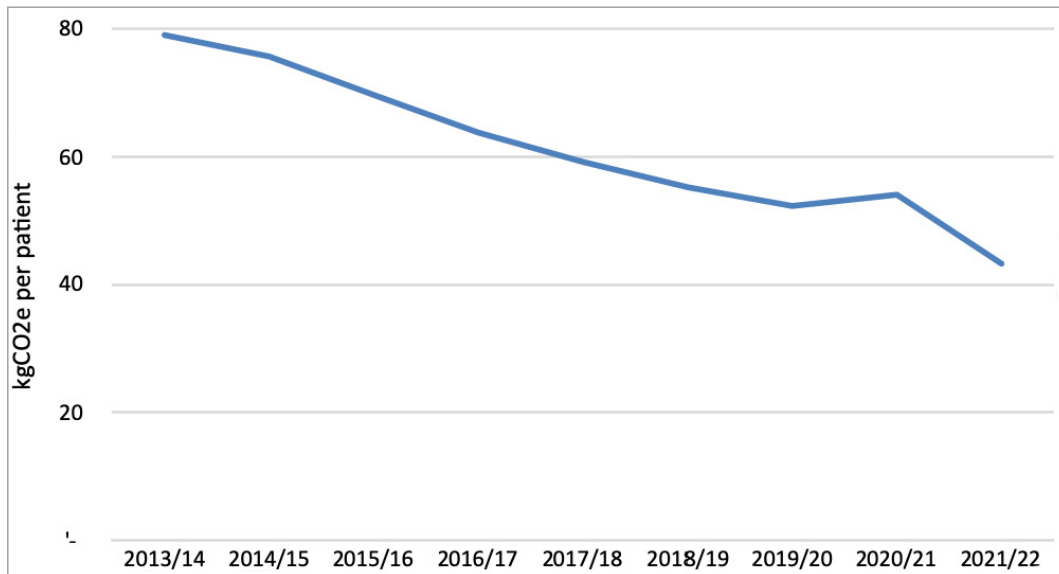
## **Waste**

The total annual CO<sub>2</sub>e emissions of clinical waste at the Trust have decreased from 4,039 tCO<sub>2</sub>e in 2013-14 to 3,273 tCO<sub>2</sub>e in 2021/22, a decrease of 766 tonnes. This reduction has been achieved despite the increase in patient contacts over this time period and an increase in the volume of single use personal protective equipment (PPE) required to be worn by colleagues and patients throughout the organisation. Over this period of time patient numbers have increased from 1,184,214 to over 1,321,593. Every patient contact generates a quantity of waste that is unavoidable. The Trust is working to improve segregation practices to divert waste to the most appropriate waste stream which has a significant impact on associated CO<sub>2</sub>e emissions.

Non-clinical waste CO<sub>2</sub>e emissions have decreased from 1,458 tCO<sub>2</sub>e in 2013-14 to 647 tCO<sub>2</sub>e in 2021-22, a 55% reduction in emissions. The Trust has developed a suite of actions to tackle this increase in waste and emissions and is working to significantly improve provision of recycling facilities across the estate in order to increase recycling and reduce associated CO<sub>2</sub>e emissions. The Trust also no longer sends any waste to landfill and now sends waste that cannot be recycled or reused to a local energy from waste facility, in line with the waste hierarchy.

## **Overall performance**

It is important to note that since the baseline the demand for our services has increased and as a result the productivity of the Trust has increased. The scope of works provided by the Trust can vary dependant on a number of factors and are impacted as services are added or removed and our estate is expanded or rationalised. We therefore use patient numbers as a metric to measure our productivity.



*Figure 2 - Carbon emissions per patient treated (kgCO2e)*

In 2021/22 we treated 1,321,593 patients, up from 1,072,872 patients in 2013/14. In our baseline year, we produced on average 79 kgCO2e per patient treated. This has been reduced by 45% to only 43 kgCO2e per patient treated, demonstrating huge improvements in our overall efficiency.

# 5. What we have achieved since the last Green Plan



# 5. What we have achieved since the last Green Plan



## Estates and facilities:

- We have invested over £13 million to improve the efficiency of our estate, saving £415,000 and 3,700 tonnes of CO<sub>2</sub>e annually
- We have received a further £9.3 million of Public Sector Decarbonisation Scheme (PSDS) funding to increase our connections to the Leeds Pipes low-carbon district heat network to save a further 1,800 tCO<sub>2</sub>e per year
- Accredited for FTA van excellence scheme
- Target of excellent BREEAM standard for BtLW to maximise sustainability
- Refurbishment of the CHP units at SJUH improving efficiency by 19%
- We have been improving biodiversity within the estate by maintaining grass areas, protecting current trees and planting new 1,100 trees
- Committed to building a low carbon hospital that aligns with the NHS targets to reduce the operational carbon and embodied carbon associated with estates and facilities





### Workforce:

- Initiated the be Green, Recycle, be Aware, be Sustainable for our Patients (GRASP) rewards campaign to reward colleagues for improving sustainability in their roles, with over 550 participants and saving 55 tCO<sub>2</sub>e
- The first NHS Teaching Hospital Trust in the world to become a Carbon Literate Organisation
- Over 1,500 colleagues working from home each day
- One day a week campaign – promoting the benefits of alternative transport for commuting
- Continual improvement and sharing best practice
- Sustainability is now considered in all business cases



### Sustainable use of resources:

- Signed up to the NHS plastic reduction commitment
- Recycling scrap metal has saved 498 tonnes of CO<sub>2</sub>e per year
- Employing a sophisticated leak detection software has saved 60 tonnes of carbon a year and over £330,000 per year
- 700 tonnes of offensive waste is now diverted from landfill and is incinerated to create energy





### Procurement:

- Consolidating deliveries to the Trust to a centralised site, which will reduce journeys from 18,000 a year to 8,000 per year, based on the assumption of a 10-mile journey, this would save over 280 tonnes CO<sub>2</sub>e annually
- Working with procurement to understand the carbon footprint of everything we purchase
- We have removed processed meats from all main menu items, excluding one, and significantly reduced red meat options including all lamb and most beef options.



### Sustainable Models of Care:

- The increased use of sevoflurane in place of desflurane has saved 6,386 tonnes per year
- Joined a regional campaign to be a Desflurane free Trust by April 2023
- Digitalised nurse documentation to improve efficiency for our nursing colleagues saving 900,000 sheets of paper and 4.1 tCO<sub>2</sub>e per year
- Green Ward competition to develop sustainable innovation in clinical areas saving an estimated 8,595 kg CO<sub>2</sub>e annually



## Progress against last Green Plan

The Trust has made significant progress since the publication of the first Green Plan, published in 2020. Despite ongoing pressures due to the pandemic, 71% of the 105 actions set out within the Action Plan have been completed or are nearing completion, with the remaining actions set to be implemented or completed throughout the remainder of 2022. The delivery of actions within the Green Plan has served to deliver improvements in efficiency and helped to promote a culture of sustainability throughout the Trust.

The delivery of these actions has been coordinated and monitored by the Trust's Head of Sustainability and Strategic Sustainability Group (SSG) who in turn reports six monthly to the Trust's Finance & Performance Committee. This governance structure ensures that we maintain continual progress against the Action Plan. In 2021 our Action Plan and Carbon Baseline were audited by PWC, this was used to ensure we are accurately and reliably reporting our progress.

Our efforts to improve sustainability throughout the Trust have been recognised through the nomination of several awards. The Sustainability Team at LTHT has been nominated for a HSJ Environmental Sustainability award, and 2 Business Green Leaders Awards for Employee Engagement Campaign of the Year for the Carbon Literacy training and Net Zero Strategy of the Year for the Green Plan. We have also won a series of awards including a Green Apple Award for environmental best practice; the Centre for Sustainable Healthcare's Green Surgery Challenge for a project focusing on the use of innovative surgical procedures and the team of the HEFMA team of the year award for the Sustainability, Energy and Waste Team.

## Key case studies

The LTHT board have demonstrated commitment to delivering the key principles of sustainability and environmental improvement and have worked to embed these principles into the operational processes of the Trust. To integrate sustainability into all key decisions, the Trust is in the process of updating business case templates to include sustainability as a factor for consideration.

## The GRASP campaign

The Trust has also had a focus on promoting behavioural change since the publication of the last Green Plan. To encourage a culture change throughout the wider organisation, we have continued to use the GRASP ('be Green, be Aware, be Sustainable, for our Patients) Champions as our colleague network, to promote sustainable behaviours and encourage change. GRASP colleagues have successfully led several environmental improvement initiatives in areas including waste, energy, water and travel. The GRASP Champions network has helped to improve the effectiveness of other environmental schemes which have been implemented at the Trust by encouraging the involvement of

colleagues across all departments and levels. Following the implementation of these initiatives, they have shared best practice and supported their colleagues to spread low carbon behaviours throughout the Trust. The GRASP Champions are an invaluable network in our journey towards net zero carbon and becoming a truly sustainable Trust.

In recognition that sustainability should be the responsibility of everyone at the Trust, we have also established the GRASP rewards scheme. This is an interactive programme available for all employees at LTHT which is accessed through an app. This programme incentivises sustainable behavioural change with vouchers for individuals and charity donations for the Trust rewarded for the behaviours that improve individual and Trust-wide sustainability and wellbeing. This scheme has helped to encourage engagement in this agenda throughout the Trust in a range of areas including energy, travel and waste and promoted a cultural shift. Over 525 colleagues are now part of our GRASP Rewards campaign and have saved 55 tonnes of CO<sub>2</sub>e through the implementation of 22,400 actions.

The importance of colleague engagement in sustainability is recognised by the Trust's senior leadership. Sustainability and the GRASP campaign feature at least annually at the Chief Executive's team brief. To promote colleague engagement in sustainability and environmental issues the Trust has promoted 6 meetings per annum, providing opportunities for colleague contribution and dissemination of sustainability initiatives.

### **Carbon Literacy training**

Reducing carbon emissions and progressing our sustainability agenda can be extremely challenging and requires action across all staff groups of the Trust. Consequently, our recent efforts have focused on creating behavioural change through educating our workforce. Carbon Literacy training has been provided to all senior Estates and Facilities colleagues and is now being delivered to clinical colleagues including colleagues from ICU and Theatres and Anaesthesia. This training is designed to educate and empower colleagues to take meaningful actions in their work to reduce carbon emissions. Carbon Literacy training is an externally accredited training programme designed to educate individuals about climate change and carbon emissions, and crucially the actions they can take to reduce their individual impact and support the Trust's targets. Individuals who successfully complete the training will become accredited as "Carbon Literate". Following completion of the Estates and Facilities training, LTHT became the first Carbon Literate NHS Hospital Trust in the world.

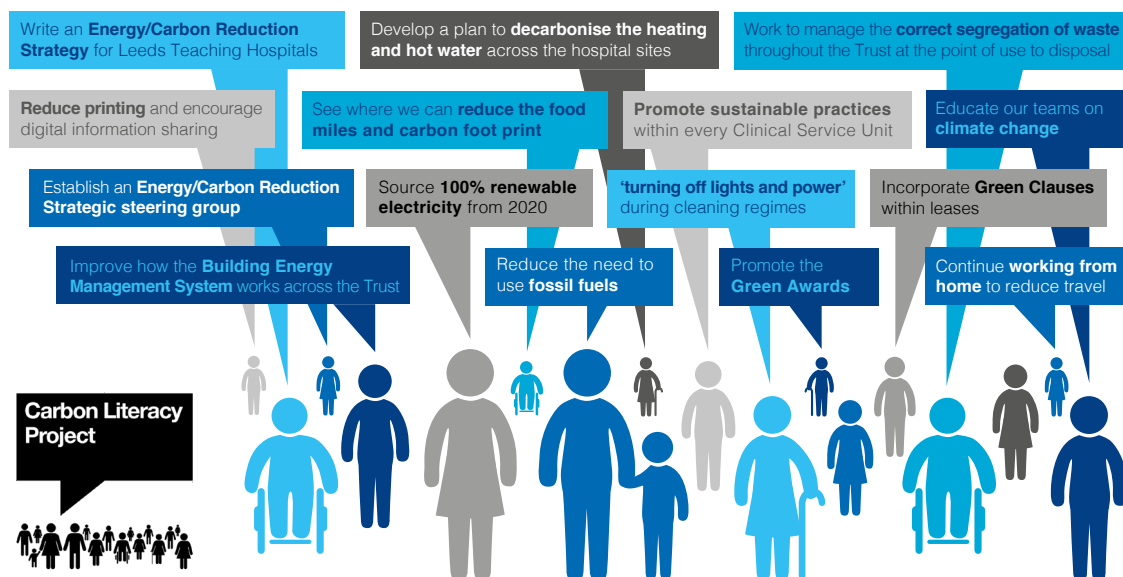
The training programme is being rolled out on a department-by-department basis. The first 5 training sessions were completed successfully, with training delivered to over 35% of colleagues within the Estates and Facilities



department. To mark the start of COP26, the Trust also provided Carbon Literacy training for board leads across the West Yorkshire and Harrogate Care Partnership, our Integrated Care System (ICS) to promote partnership working on sustainability throughout the region. This enabled us to educate our senior ICS board leads on the importance of taking action on climate change and create meaningful pledges which will be implemented throughout our region.

Following the training all participants made pledges to take action to improve sustainability within our organisation. Individuals made pledges ranging from committing to participating in active travel to reduce car use to using their role to promote the sustainability agenda such as committing to routinely discussing sustainability at Board Level. These pledges are helping to implement widespread system change throughout our Trust.

As one of the first NHS Trust to become Carbon Literate, we will...



## Sustainable Travel Strategy

Over the last year colleagues at the Trust have been developing a Sustainable Travel Strategy. This process has involved extensive consultation with colleagues and a review of policy and processes to develop a strategy to transform travel and parking, in line with our sustainability ambitions at the Trust. The Strategy will prioritise active travel and the utilisation of public transport and will integrate our parking system with our sustainable travel initiatives.

To support the Strategy, the Trust has allocated £1.5 million of funding within the 5-year Capital Plan for sustainable travel and associated facilities. We are currently undertaking work to extend our cycle facilities within the Bexley Wing to include safe cycle stores, to enable colleagues to cycle to work.

The Trust has also joined Liftshare, a car share scheme provider which connects users together to share journeys to work. It has been estimated that 83% of colleagues at LGI and 86% of colleagues at SJUH would have 10 or more opportunities to share a lift within one mile of their home once we use the service. Encouraging car sharing will have a multitude of benefits. The use of this scheme will help to reduce the carbon emissions and air pollution created by our commuting and may also ease pressures on car parking and reduce rising travel costs for our colleagues.

In 2020 the Trust also launched the One Day a Week campaign, which encourages our colleagues at LTHT to travel by public transport or active travel instead of using a car one day per week to reduce carbon and air pollution emissions. The promotion of active travel throughout the Trust has a clear environmental benefit but also provides the co-benefits of promoting good physical and mental health for our colleagues and patients. We have also recently received Silver Level accreditation as a Cycle Friendly Employer, the international benchmark for active travel culture and infrastructure in the workplace.

As a result of the pandemic, many colleagues at the Trust have changed the way they travel to and from work. One benefit we have observed as a result is the uptake of colleagues working from home. This was set out as an action in our last Green Plan in early 2020 and has been accelerated due to COVID-19. Since February 2019, we have seen a 1775% increase in the number of people regularly working from home, with over 1,500 colleagues now working from home per day. This partially removes the requirement for these individuals to travel to work and reduces the environmental impact of their commutes. The Trust now has a formal working from home policy in place, which will enable colleagues to work from home where appropriate for their roles.

### **Procurement CO2 analysis**

As a large organisation which relies on a variety of goods and services to operate, quantifying our Scope 3 carbon emissions has presented a significant challenge. To establish the carbon impact of our procurement, we have worked with CO2 analysis to estimate the carbon footprint of each item we procure.

This has enabled us to calculate an estimated overall carbon footprint of our procurement, but also allows us to look at the carbon footprint of each specific item we purchase in order to identify carbon hotspots and source alternative items where possible. As part of this innovative project, we have linked the carbon footprint tool with our purchasing system to enable us to report the emissions of our purchases in real time. We are one of the first Trusts to establish such detailed analysis of our procurement carbon footprint and have established KPIs against our top 10 highest carbon items to drive the transition to lower carbon alternatives.



# 6. Our vision, objectives and targets



# 6. Our vision, objectives and targets

As an organisation, we seek to operate in the Leeds Way. This Green Plan strategy has been developed in line with our Leeds Way Values in order to drive environmental, social and financial sustainability in order to support the delivery of this aim.

## Our values



Patient-centred



Fair



Collaborative



Accountable



Empowered



### Patient Centred

- Climate change is a health emergency
- We aim to deliver changes which can improve patient care, efficiency and our environmental impact
- We make patient centred decisions to create holistically sustainable care models



### Collaborative

- We aim to lead by example on sustainability
- We work in partnership with other Anchor institutions
- We work with our patients, colleagues, partners and supply chain to support our greater goals



### Accountable

- We provide honest reporting of our environmental impacts
- We hold ourselves accountable to take action on climate change mitigation and adaptation
- We take responsibility for addressing our impacts and aim to make sustainability integral to everything we do



### Empowered

- We educate our colleagues to empower them to take action on climate change
- We support and celebrate the successes of our colleagues in improving sustainability at the Trust





## Our vision

The Trust has the ambition to become one of the greenest NHS Trusts in the UK. As one of the UK's largest acute Trusts, we recognise the importance of improving our environmental performance and becoming a holistically sustainable organisation to support greater quality of care for the communities we serve.

Since the publication of our SDMP and first Green Plan, we have made significant progress towards achieving this vision, but will continue to integrate sustainability further into the everyday operation of our Trust.

## Key drivers

Building upon the success the Trust has already achieved, we have now set forth updated objectives, targets and actions, in line with the latest Greener NHS guidance. This section outlines the Trust's commitment to national targets.

Aligned with the Climate Change Act 2008, the UK Government has set a mandatory national target to reduce carbon emissions to net-zero by 2050. In recognition of this, and their significant contribution towards the nation's greenhouse gas emissions, the NHS has set two net-zero targets – to achieve net-zero by 2040 for the NHS Carbon Footprint and by 2045 for the NHS Carbon Footprint Plus.

Considerable progress towards this target has been made throughout the NHS. Between 1990 and 2020 the NHS overall has achieved a 62% reduction in its carbon footprint. This was achieved through the implementation of strategies to reduce carbon dioxide equivalent emissions (CO<sub>2</sub>e), air pollution emissions and improve waste management.

There are four key NHS specific documents that establish sustainability drivers for the Trust;

- NHS Long Term Plan
- NHS Standard Service Contract 2020/21
- NHS Operational Planning and Contracting Guidance
- Delivering a Net Zero National Health Service

The NHS Long Term Plan sets out how the NHS will transform and improve over the next 10 years and includes considerations pertaining to sustainability, such as new models of care. The NHS Standard Service Contract contains a series of targets and objectives pertaining to sustainability and is an integral requirement for NHS Trusts. In order to achieve the environmental targets, set by the government and to sustain the NHS in the future the NHS Operational Planning and Contracting Guidance provides guidance on the actions required in 2020/21 including operational requirements, workforce transformation requirements, financial requirements, and the processes and timescales associated with these requirements.



The Delivering a Net Zero National Healthcare Service report explains the modelling and analytics that have been used to determine the NHS carbon footprint and future projections and details the actions that will be implemented by the organisation to reduce emissions. Outlined in the report are the immediate actions the NHS must take to meet the 2040 carbon net-zero target. This report will be continuously reviewed to ensure the NHS is on track to meet its long-term commitments and remains suitably ambitious.

## Our targets

In 2020 the Trust set a carbon reduction target to achieve net-zero carbon emissions for our total carbon footprint by 2050, in line with the national mandatory 2050 net-zero target. However, since the publication of our first Green Plan, the Trust has brought the net-zero carbon target our the Carbon Footprint forward to 2040 and established a second target for 2045 for the Carbon Footprint Plus, in line with the Greener NHS Delivering a Net-Zero NHS report.

As we are now reporting our carbon emissions in two separate footprints our Carbon Footprint and Carbon Footprint Plus, our Carbon Footprint baseline has been amended since the publication of the last Green Plan and is now 84,830 tCO<sub>2</sub>e. This is the figure against which we will measure our progress against our 2040 net-zero Carbon Footprint target. As our Carbon Footprint Plus baseline was only established in 2021/22, progress against this target will be reported in future iterations of this Green Plan.

In 2021, the Trust committed to the following targets:

- For the emissions we control directly (our Carbon Footprint), we will reach net zero carbon by 2040, with an ambition to reach an 80% reduction by 2032;
- For the emissions we can influence (our Carbon Footprint Plus), we will reach net zero carbon by 2045, with an ambition to reach an 80% reduction by 2039.

Metric	2013 (Baseline)	2032	2040
Target Emissions Reduction (%)	N/A	80	100
Target Emissions (tCO <sub>2</sub> e)	84,830	11,442	0

*Table 5 - LTHT Carbon Footprint Targets*

Metric	2013 (Baseline)	2032	2040
Target Emissions Reduction (%)	N/A	80	100
Target Emissions (tCO <sub>2</sub> e)	277,138	55,427	0

*Table 6 - Carbon Footprint Plus Targets*





Table 5 and 6 present the required level of emissions (in tCO<sub>2</sub>e) at each milestone year for the Trust to adhere to the interim and overall targets, for our Carbon Footprint and Carbon Footprint Plus. It should be noted that the targets set are not legally binding but resemble a national commitment by NHS England and Improvement to encourage the organisation to achieve net-zero emissions as soon as possible and to ensure that the mandatory national net-zero target of 2050 is met.

### Our carbon trajectory

Figure 3 presents the necessary trajectory for the Trust’s annual CO<sub>2</sub>e emissions if we are to meet the 2040 target of net-zero emissions for our Carbon Footprint. We have seen a continual annual reduction in emissions since 2015.

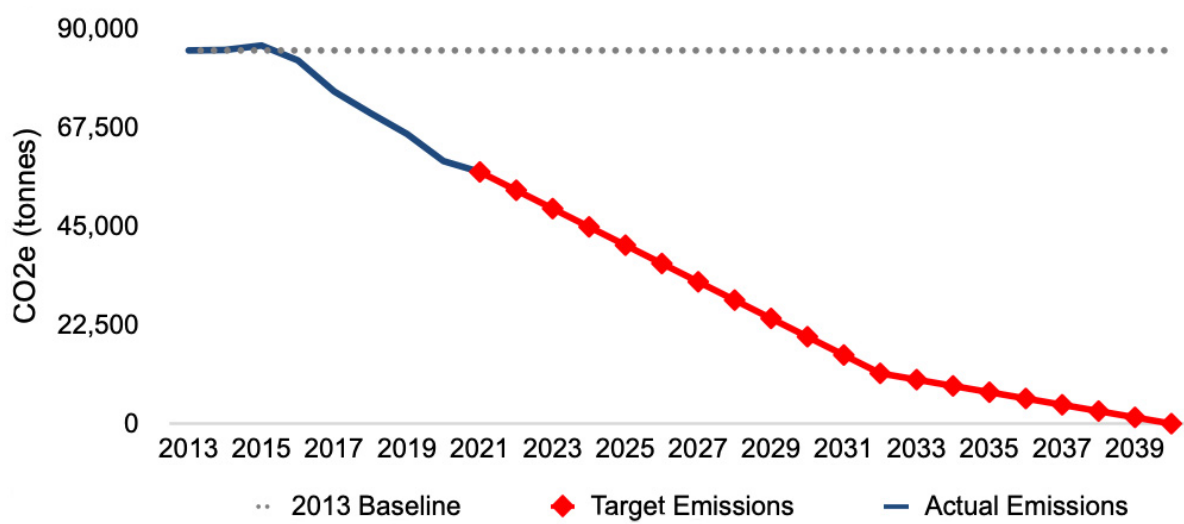


Figure 3 - LTHT Carbon Footprint Target Trajectory

The Trust has made significant progress towards our net-zero targets through the implementation of actions set out in our previous SDMP, Carbon Management Plan and Green Plan strategies, and other ongoing decarbonisation workstreams. To date we have reduced our carbon footprint emissions by 33% from our baseline year.

The Trust have made a significant reduction in carbon emissions since the publication of the first SDMP and Carbon Management Plan, achieving a 33% reduction of CO<sub>2</sub>e emissions from the baseline. To meet the interim target of an 80% reduction in emissions to 21,526 tCO<sub>2</sub>e by 2032, the Trust must reduce carbon emissions by an average of 5,212 tCO<sub>2</sub>e annually. This is 1,052 tonnes less per year required than forecast in the previous Green Plan as we have adjusted our Carbon Footprint to be in line with Greener NHS requirements which has subsequently meant we now report our estimated travel emissions as part of our Carbon Footprint Plus.

# 7. Our pathway to net zero carbon





# 7. Our pathway to net zero carbon

Reducing our carbon footprint to net zero whilst continuing to provide high level care to more patients, presents a substantial challenge for the Trust. If we are to meet our ambitious targets and objectives and achieve carbon neutrality, we must continue to implement interventions to reduce our carbon emissions.

Our new Sustainable Action Plan provides an updated tranche of interventions designed to improve the Trust's sustainability performance and reduce emissions. The Sustainable Action Plan details actions that we, as a Trust, can implement within our own organisation in order to meet our targets and objectives and includes actions that will be taken to influence our partner organisations and suppliers to create wider change. An overview of our Sustainable Action Plan is presented in the final section of this Green Plan.

It is crucial to recognise that the Trust is not alone in the journey to Carbon Net-Zero. Indeed, the legal requirement to become carbon neutral is one shared by the entire UK, under the Climate Change Act 2008. As such, there are [actions/changes] that are being taken locally and nationally, which may have significant impacts upon our carbon emissions and will greatly influence whether or not we are able to become carbon neutral. Accordingly, this section explores the changes anticipated at a local and national level, outside of the Trust's control, which have the potential to significantly influence our CO<sub>2</sub>e emissions and air pollution over the next 3 decades.

## Indirect opportunities for the Trust to reach net zero carbon

- National considerations

Once the NHS has taken all practicable actions to reduce carbon emissions as far as possible, the organisation will require national level actions to reduce our final residual emissions to net-zero by 2040. In 2021 the Government published their Net-Zero Strategy: Build Back Greener, which establishes the specific policies and proposals that will drive decarbonisation of the UK economy. This document will act as a framework to guide the nation's transition towards a net-zero economy and will be supported by £5 billion to encourage a 'Green Industrial Revolution' within the UK. The Government aims to support a sustainable recovery from the COVID-19 pandemic through the creation of 250,000 new jobs by 2030 in green energy and zero-carbon technologies including offshore wind farms, nuclear plants, hydrogen power and carbon capture and storage technologies.

- Hydrogen

The Government's Net-Zero Strategy also details its intention to decarbonise heating through the transition to low-carbon hydrogen. 5GW of low-carbon hydrogen production capacity will be created by 2030 which would be used for heating, whilst halving fossil fuel related emissions. The conversion of the gas grid to hydrogen has been estimated to reduce UK carbon emissions by an estimated 73%.

To prepare for the potential conversion of the gas grid, the Government are consulting on 'hydrogen ready appliances' and, subject to the outcomes of the trials, will rework the Health and Safety Executive to enable up to 20% hydrogen blending in the gas grid by 2023.

Carbon capture will be used in conjunction with hydrogen heating to enable hydrogen to be rolled out across the gas grid at prices that can compete with the costs of natural gas but without emitting carbon. The successful transition from natural gas to hydrogen would enable the UK and the Trust to reduce the emissions associated with heating on a large scale. This would go some way to reducing our Trust's carbon emissions towards which gas-fired heating systems are a primary contributor.

Over the next 20 years, the Trust will continue to monitor new and emerging technologies and funding opportunities which could support the decarbonisation of our operations towards achieving net-zero CO<sub>2</sub>e emissions.

- Active Travel and Public Transport

A key aspect of the Government's Net-Zero Strategy is the facilitation of active travel and public transport to reduce carbon emissions and air pollution. To capitalise on the reduction in air pollution observed throughout the COVID-19 pandemic, the Government aims to continue reducing transport-related emissions through the provision of additional funding for public transport, infrastructure, and active travel schemes.

£2 billion of funding will allow 50% of town and city-based journeys across the UK to be travelled by foot or bike by 2030. £620 million will be made available for zero emission vehicle grants and electric vehicle infrastructure, with a focus on creating more nation-wide charging points. £350 million of a total £1 billion from the Automotive Transformation Fund (ATF) will also be allocated to support the electrification of UK vehicles and supply chains.

In addition to the greater provision of public transport, the Government will also promote active travel, with plans to facilitate safer cycling through the construction of thousands of miles of segregated cycling lanes across England. Encouraging active travel across the region will have many benefits for the Trust, by minimising the emissions created through travel, improving local air quality and improving population health. These co-benefits could support a reduction in demand for our services if widely adopted.





It is anticipated that the shift created by these national schemes will assist the Trust in reducing Scope 3 emissions over the long term. The increased provision of public transport methods and active travel schemes could help to reduce colleague and patient travel emissions and improve air quality.

### **Direct opportunities for the Trust to reach net zero carbon**

- **Renewable energy**

The carbon intensity of electricity consumed in the UK has continued to decrease due to the increasing percentage of the nation's energy mix generated from renewable sources. In order to reach net-zero emissions, the UK must completely decarbonise the national grid. To support this crucial part of the national effort to achieve net-zero, the Government plans to power the whole of the UK with clean electricity by 2035 by increasing the amount of renewable energy generated by additional offshore wind farms, expected to generate 40 GW of energy. This would provide enough energy to power every home in the country and would be supplemented with carbon capture technology and battery storage to manage spikes in demand. The increasing percentage of renewables in the UK's energy mix could significantly reduce our Trust's carbon emissions associated with the electricity we import from the national grid, our largest source of emissions.

The Trust currently procures 100% renewable electricity across the estate using a REGO-backed energy tariff. REGO stands for Renewable Energy Guarantees of Origin, which is a certificate provided by Ofgem for every MWh of renewable energy generation purchased by an energy supplier. REGO certificates are considered proof that a proportion or all of the energy provided to LTHT has been generated through renewable sources. Purchasing our electricity through this tariff does not directly reduce our carbon footprint but does demonstrate LTHT's commitment to supporting decarbonisation of the grid. The new Hospitals of the Future will be reliant on the decarbonisation of the national grid in order to achieve net-zero.

- **Electric vehicles**

In February 2020 the Government announced that the sale of all new petrol and diesel vehicles, classified as internal combustion engine vehicles (ICEVs), would be banned from 2030, and hybrid vehicles banned from 2035. The ban on new ICEVs will accelerate the adoption of electric vehicles (EVs) which, are zero-carbon at the point of use.

EVs have lower carbon emissions than ICEVs at the point of use and they also produce significantly less air pollution such as carbon monoxide (CO), nitrogen oxides (NOx) and particulate matter (PM). Therefore, the transition to electric vehicles will not only support the achievement of our net zero carbon targets but will also help to improve local air quality and population health.

The adoption of EVs will also help the Trust to address the key issue of air pollution. The use of ICEVs is a principal cause of air pollution through the release of tail-pipe emissions (particulate matter, NO<sub>x</sub>, SO<sub>2</sub>). EVs do not create tail-pipe emissions and therefore, provide a significant benefit for the reduction in air pollution within Leeds. Reducing air pollution can help to contribute towards improved health outcomes for our patients, thus, in the long term, potentially reducing admissions to our hospitals.

In our baseline year business travel, patient transport, visitor travel and commuting produced an estimated 27,147 tCO<sub>2</sub>e, representing 25% of total emissions. Therefore, the national policy to encourage the replacement of ICEVs with EVs will help the Trust to move towards carbon net-zero.

The gradual decline in emissions has been modelled, since the purchase and use of EVs is already on the increase prior to the government ban in 2030. Furthermore, as EV charging networks increase, EVs themselves become cheaper and government taxes of fossil fuels increase, the adoption of EVs is likely to increase at a faster rate prior to 2030.

The transition to EVs could reduce overall CO<sub>2</sub>e emissions by 27,147 tonnes or 25%. This is likely to be a gradual reduction over the next three decades as ICEVs are gradually phased out of the market. Therefore, we should also note that relying solely on transition to EVs will not enable the Trust to achieve its emission reduction targets for travel.

## Trust Initiatives

### Building the Leeds Way and Hospitals of the Future

Building the Leeds Way (BtLW) will see a large-scale redevelopment of the current LGI site. A significant proportion of the current LGI, excluding the Jubilee Wing and all listed buildings will be demolished. The Hospitals of The Future (HoTF) project is a key aspect of the Building the Leeds Way vision and will involve the development of two new state-of-the-art hospital buildings on the current LGI site, the Women's and Children's Hospitals.

LGI currently operates in Victorian buildings that are no longer suitable for providing modern healthcare and would provide significant obstacles to achieving net zero carbon if kept in operation. The new hospitals will enable the Trust to provide care in modern and efficient buildings which will allow sufficient flexibility to meet the changing demand for specialist clinical services.

Significant consideration has been given to the sustainability of the build, throughout all stages of the project. The Building the Leeds Way project is committed to integrating sustainability into all aspects of the design, build and operation of the new hospital buildings.





The overall space of the LGI will be reduced following the development of the two new hospitals but will maximise the space available to create more efficient and manageable spaces which are tailored to the needs of our patients and colleagues. The HoTF will also facilitate the use of new technologies to improve patient care.

The construction of the new hospital will be completed according to the BREEAM Standard. The hospitals have been designed in line with the BREEAM standard, a standard which can be used to ensure that new builds are designed to maximise sustainability in areas such as energy efficiency, mitigating pollution, waste segregation and recycling. By adhering to the BREEAM standard, the Trust will ensure that the Hospitals of the Future are built in manner which supports the objectives of this Green Plan. The BtLW development has set a target of achieving an “Excellent” rating on the BREEAM standard, this rating means that more than 70% of the requirements established by the BREEAM standard will need to be incorporated in the design and construction of the buildings included within the BtLW project.

**Some of the key features that will be incorporated into the two new hospitals include:**

- An all-electric building services solution incorporating heat pump technologies
- A building that will be net zero carbon ready i.e. doing all that it can without offsetting any residual emissions
- Sophisticated energy management systems that will maximise energy efficiency
- Maximising renewable technologies such as solar photo voltaic panels
- Passive design & energy re-capture (the capture and reuse of waste heat)
- Maximising the use of natural ventilation where possible within the building
- Maximising the capture and use of natural light
- Proposed provision for bird, bat and bee habitats
- Outdoor gardens and terraces for patient and staff wellbeing

The supply of energy to the new hospitals is central to the Trust meeting the 2040 net zero carbon target. As the HoTF project will represent a significant proportion of the Trust’s carbon profile, capitalising upon the energy supply emission reduction opportunities is essential to minimise the risk of putting the Trust’s net zero carbon ambition and legal obligation beyond reach.

The HoTF team considered a range of potential energy supply options for the new hospital buildings, which ranged in carbon intensity, capital costs and operational costs. Considering the risks associated with not attaining net zero carbon emissions by 2040, the Trust has now committed to building the hospitals in line with the NHS Net-Zero Carbon Buildings Standard.



This standard sets out how all new builds and major refurbishments within the NHS estate should be designed to achieve net-zero carbon emissions. Working in line with this standard will support the decarbonisation of the Trust and ensure that we are developing an estate that is fit for the future. Energy supply to the buildings is the largest contributor to achieving net-zero, in line with this standard the Trust has decided to utilise heat pumps and grid electricity to supply energy to the new hospitals. This option was selected, despite presenting the highest capital cost of all options considered, as it will bring us closest to net-zero carbon solution and provides us with the most certainty that we will meet our net-zero carbon targets. This demonstrates the Trust's commitment to creating a net-zero estate.

The project aims to construct the new hospitals in a way that minimises environmental impacts and carbon emissions, however the release of emissions throughout the construction phase is inevitable and necessary for us to build modern hospitals which will enable us to operate more efficiently in the future. As it falls within our Scope 3 emissions, as part of our Carbon Footprint Plus, the embodied carbon emissions associated with the build of the two new hospitals will be included within our carbon footprint plus which will be established in our next Green Plan in 2025.

### **Estates decarbonisation**

Our Estates decarbonisation strategy consists of a series of options that lead to a reduction in our emissions in line with NHS targets, as shown in Figure 4 below. These options include the installation of heat pumps, connections to the Leeds Pipes district heating network and building fabric upgrades, see Section 12.0 Estates and Facilities for more detail. The Trust has undertaken an options appraisal for reaching net zero carbon and meeting its interim decarbonisation targets, but this needs to be consolidated with our capital investment plan. The plan is underpinned by the Trusts Capital Investment Strategy i.e., estate rationalisation and existing commitments across the estates to decarbonise through the Public Sector Decarbonisation scheme. The recommended roadmap does allow the Trust to achieve the 2032 80% reduction target, however it relies on urgent and bold action across all Estates to achieve this.



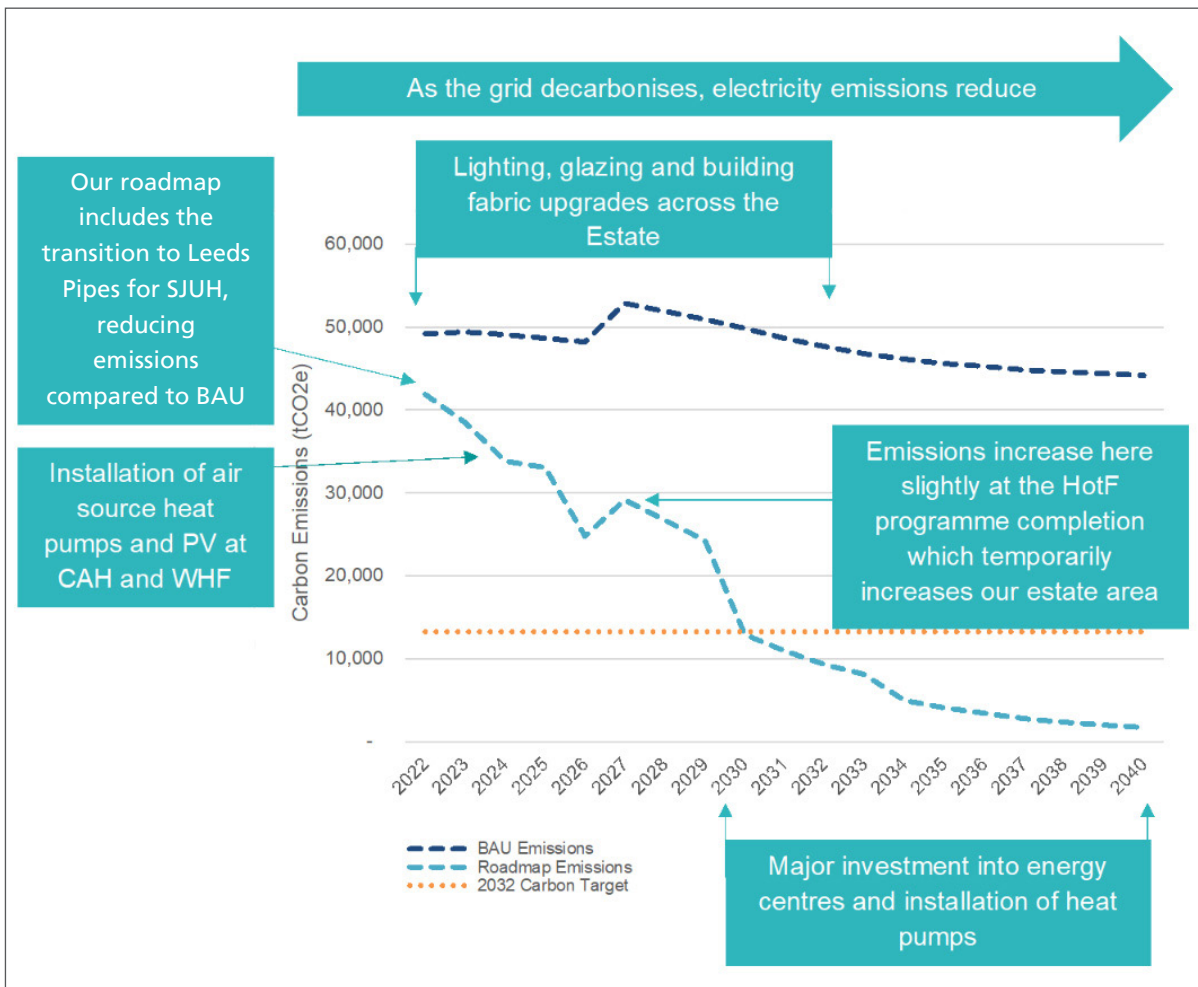


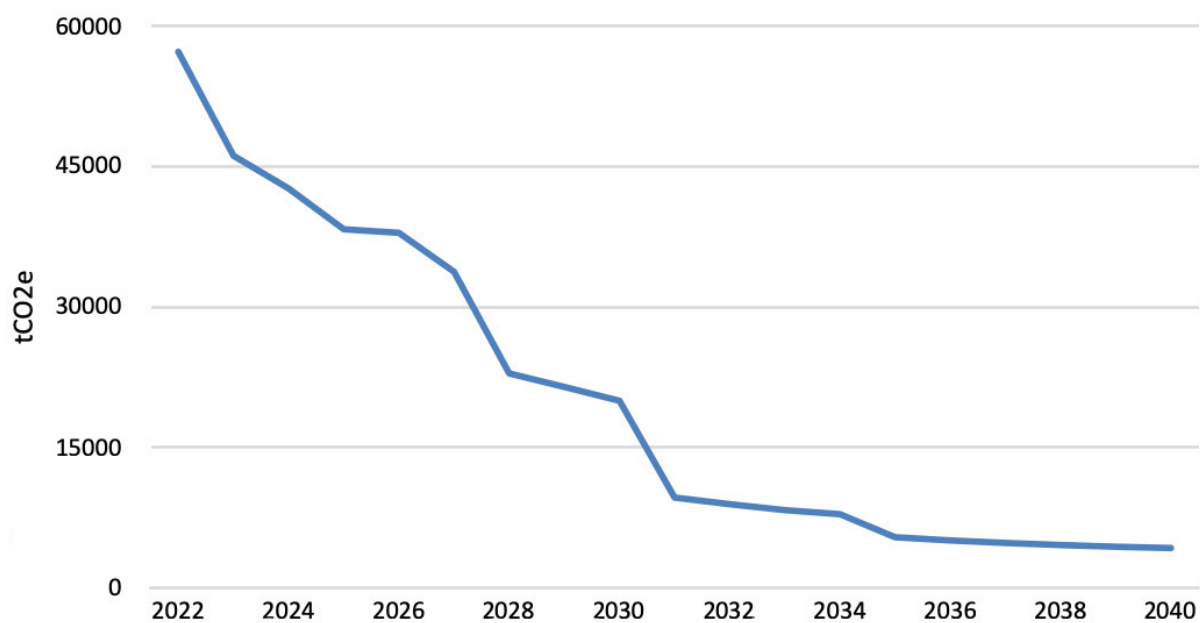
Figure 4 - Comparison of business as usual vs. the proposed Estates decarbonisation pathway

### Carbon footprint emissions forecast

We are currently projected to achieve an estimate 92% reduction in our direct Carbon Footprint emissions by 2040. This projection considers the decarbonisation work being carried out at the Trust and national decarbonisation interventions that are planned. These interventions include the decarbonisation of the Trust estate, the HoTF, the ban on sale of petrol, diesel and hybrid vehicles and an estimated reduction in emissions of 6% annually for the 3 years of the course of this Green Plan.

The emissions reduction expected as a result of the actions implemented in this Green Plan have been estimated based on past performance. The Trust has maintained a similar level of activity since 2015 and has experienced on average a 6% reduction in emissions per year, it is therefore reasonable to expect a continuation of this reduction as a result of this new Green Plan. The actions

delivered by this Green Plan are expected to make small improvements to our carbon footprint which will collectively make an incremental and ongoing carbon reduction. These planned interventions, if implemented, combined with smaller ongoing action across the Trust will help the Trust to achieve substantial CO<sub>2</sub>e emission reductions.



*Figure 5 - LTHT Projected Carbon Emissions*

It is important to recognise that this does not include the embodied carbon of the Hospitals of the Future project. Although the hospital will be designed and constructed in such a way as to reduce carbon emissions, there will be a significant amount of carbon which will be associated with the build. This will be accounted for in our Carbon Footprint Plus and will be reported in our 2025 Green Plan.



## Timeline



### 2025 – 2032

- Lighting, glazing and building fabric upgrades across the estate
- Reduction in operational emissions of the HoTF – aiming for BREEAM Excellent and Well Gold standards
- Bringing online the new HoTF (2027)
- Larger scale roll out of electrification of heat initiatives for SJUH, WGH, SEA and review and upgrade electrical infrastructure capacity
- Upgrade and install glazing and building insulation for LGI
- Rationalisation of estate buildings
- Implementation of actions to reduce Scope 3 emissions

2022

2025

### 2022 – 2025

- The transition to Leeds Pipes district heat network for SJUH (2022)
- All NHS procurements will include a minimum 10% net zero and social value weighting (2022)
- Installation of air source heat pumps and PV at CAH and WGH (2022/23)
- Inclusion of climate change in the Trust Risk Register (2022/23)
- Implementation of a suite of actions covering; workforce, leadership and partnerships; sustainable care models; medicines, estates and facilities, digital transformation, travel and transport, food and nutrition, procurement and biodiversity
- Lighting, glazing and building fabric upgrades across the estate
- Achieve BREEAM excellent standard within HoTF maximising sustainability in areas such as energy efficiency, mitigating pollution waste segregation and recycling
- Ensure waste is managed and disposed of at the highest level of the waste hierarchy

## Ongoing Actions

LED installation across the estate in a phased approach, replacing light fittings at end of life

Continue to roll out glazing upgrades across the estate

Ventilation upgrades – install heat recovery and energy efficiency interventions

Integrating climate change adaptation into decision making vehicles

2032

2040

## 2032 – 2040

Major investment into energy centres and the installation of heat pumps

Continued electrification of road vehicles



# 8. Our Sustainable Action Plan



# 8. Our Sustainable Action Plan

In order to meet our carbon reduction targets, the Trust have developed a comprehensive Sustainable Action Plan, which builds upon the actions taken in our previous Green Plan. The adoption and implementation of this Sustainable Action Plan will help the Trust to drive continual, incremental reductions in carbon emissions, to support our overall ambition to become carbon net-zero by 2040.

## The Sustainable Action Plan is split into our 10 key focus areas:

- Workforce, leadership and partnerships
- Sustainable care models
- Medicines
- Estates and facilities
- Digital transformation
- Travel and transport
- Food and nutrition
- Supply chain and procurement
- Biodiversity
- Climate change adaptation

This Action Plan has been developed through extensive colleague engagement to understand the opportunities for improvement and best practice which can be scaled up across the Trust. The Action Plan is also aligned to our ICS Green Plan and Greener NHS requirements.

The Sustainable Action Plan is not presented in this document, and instead will act as an internal framework which the Trust will use to guide and monitor the implementation of actions. An overview of each of the key strategic objectives for each focus area is presented across the following pages.

The Sustainable Action Plan commits the Trust to a range of actions over between 2022 and 2025 which will support the Trust our pathway to net-zero. The SSG will monitor, implement and manage the delivery of this action plan, working with our colleagues across the Trust to implement the actions contained within the plan.

# 9. Workforce, system leadership and partnership working





# 9. Workforce, system leadership and partnership working

Many of our colleagues are already very engaged in this agenda and have contributed to the development of this Green Plan strategy and other key initiatives throughout the Trust. However, achieving our net-zero target and our wider sustainability objectives remains a monumental task. To become a truly sustainable organisation, we require the support of all our workforce throughout LTHT.

This strategy will aim to educate and engage our colleagues to empower them to take action to improve sustainability. This is hugely important in creating a culture of sustainability throughout our workforce.

As one of the largest employers in Leeds, employing over 21,000 people, we have a significant influence within the city. At a time where the cost of energy is rising rapidly, educating our colleagues on the importance of sustainability can drive efficiency both within LTHT and in homes, supporting the health and wellbeing of our colleagues and community. We have the opportunity to raise awareness of climate change and the health impacts associated with it within our region and can use our position to work with our local communities to address health inequalities.

As an anchor institution, we will continue to actively support city wide action on climate change. Through sharing of best practice and collaborative working we can achieve influence greater change within our region and lead by example.

This Green Plan has been approved by the board and the progress of the Plan will be overseen by the Head of Sustainability and Strategic Sustainability Meeting Group (SSMG).

## What we have achieved

Over the last two years the Trust has undertaken work to engage and inspire our workforce to take action on climate change and embed sustainability into everyday working practices.

The Carbon Literacy training project has been successful in educating colleagues within the Trust and ICS on how climate change can be expected to impact LTHT and the communities we serve. Following the training all participants made individual and group pledges to take action throughout the Trust to minimise



carbon emissions, creating a culture shift within the departments. We were also the first ICS to undertake Carbon Literacy training, which was delivered by LHTT to promote unified action on climate change for our ICS net-zero board leads.

Our GRASP (Green, Recycle, be Aware, be Sustainable for our Patients) campaign was launched in 2015 and is a colleague network dedicated to promoting sustainability throughout the Trust. Made up of colleagues from all departments and levels across the Trust, the network advocates for environmental issues across and looks to drive change through staff engagement within our organisation. In 2021 we started the GRASP Rewards scheme which is linked to a staff app in which colleagues can log their actions. Over 525 colleagues are now part of our GRASP Rewards campaign and have saved 55 tonnes of CO<sub>2</sub>e through the implementation of 22,400 actions.

Our Strategic Sustainability Group (SSMG) meet [frequency] to monitor the progress of the Green Plan Action Plan implementation. This group have been successful in driving the actions set out in the first Green Plan and ensuring that we are making progress against our targets.

As an anchor institution within Leeds, the Trust also works collaboratively as a member of several sustainability meeting groups to support sustainable development within the city and wider region.

The Trust Board has outlined the Trust's sustainability ambitions and has provided high-level commitment to this workstream. To ensure that sustainability is included in all major decisions, the Trust has integrated sustainability into business case templates. The Board has also made other key commitments including committing to build net-zero hospitals as part of the HoTF project and pledging to use Sevoflurane in place of Desflurane throughout the Trust, where clinically appropriate.

### **Strategic objectives**

- Engaging our wider workforce with our sustainability ambitions
- Integrating sustainability into staff wellbeing initiatives
- Ensuring sustainability and decarbonisation are considered as part of all layers of decision making within the Trust – from strategic to operational decisions, and across all workstreams (e.g. Building and Engineering, IT and Medical and Surgical Equipment)
- Working with our partner organisations to deliver broader sustainability goals

# 10. Sustainable models of care





# 10. Sustainable models of care

To achieve net-zero by 2040 we need to reinvent our service models to focus on delivering high quality care whilst reducing the carbon intensity of our care per patient.

Adopting a sustainable lifecycle approach to care models is crucial to reducing carbon emissions. To deliver truly sustainable care we must adopt a sustainable lifecycle approach to care, firstly focusing on prevention by ensuring we are keeping people healthy over the course of their lives. When people are unwell, we will aim to ensure that we provide the right care at the right time and in the right place, in line with NHS E&I ambitions. Finally, we will also focus on ensuring that we are reducing the embedded carbon in our care delivery.

Addressing and reducing health inequalities is a crucial factor in preventing illness. People living in areas of high deprivation, those from Black, Asian and minority ethnic communities and those from inclusion health group, for example people experiencing homelessness, are most vulnerable to the risks of climate change and poor air quality. Many of the actions we are implementing to mitigate climate change and improve air quality, such as facilitating more active travel, will also improve population health within the city. New models of care, including promoting social prescribing will be used to aid prevention and improve population health.

In many areas we will be able to directly reduce the carbon intensity associated with the delivery of care. In other cases, we will require a system approach to drive efficiency to improve quality of care and reduce environmental impacts.

Ensuring that we take a life cycle approach to care will require continued collaboration with our ICS and partner organisations to create a joint up approach to care models across commissioning, primary, secondary and community care.

## What we have achieved

Since 2013/14 we have reduced the total carbon emissions per patient treated by 40%, the equivalent to 43 kg carbon per patient reduce from 72 kg carbon per patient. This has been achieved by energy efficiency improvements at the Trust and a reduction in emissions from anaesthetic gases, which have created a reduction in our total annual emissions despite our increase in patients treated.

In 2022 we have participated in the Centre for Sustainable Healthcare Green Ward competition. Five clinical teams have undertaken innovative projects

within their wards, supported by the CSH, to reduce their environmental impacts and support sustainable models of care which can improve patient care.

A range of teams from renal transplants, nephrology, paediatrics, teaching, and the Patient Environment Action Team (PEAT) have taken part in the competition, each monitoring the impact of their initiatives and producing a report on the findings. Many of these teams have explored the impact of specific medicines and medical equipment, including nitrous oxide, and identified key solutions that can create benefits to patient outcomes and reduce the environmental and financial costs of our care. Each project focused on delivering reductions in carbon emissions and costs whilst also prioritising improvements in patient care and adding social value for colleagues. In total the projected total annual carbon savings from the 5 Green Ward projects was an estimated 8,595 kg CO<sub>2</sub>e. This is a significant saving and has the potential for further savings if these projects are rolled out at a wider scale across the Trust, ICS or nationally. It was also projected that a £9,945.95 total yearly saving could be created for the Trust, demonstrating that these projects have both an environmental and financial benefit to the organisation.

As an organisation, providing high quality patient care is our priority. We make patient centred decisions, led by clinicians, to ensure that patients receive the best possible outcomes. Many interventions we can implement can improve our efficiency and drive improvements in patient care whilst also the carbon intensity of our care. Some necessary interventions may not produce a direct carbon saving but may create better patient outcomes and support the development of a more holistically sustainable Trust.

### **Strategic objectives:**

- Supporting population health and minimising health inequalities in our region to promote prevention of illness
- Working collaboratively to provide holistically sustainable care models including providing care closer to home
- Utilising default low-carbon and sustainable preferences for clinically equivalent interventions



# 11. Digital transformation



# 11. Digital transformation

The digital transformation has a crucial role to play in supporting our transition to becoming a net-zero organisation. Digital technologies can drive efficiency in our services and enable us to continue to improve patient care whilst reducing our carbon footprint and resource consumption.

The use of technology can minimise and, in some cases, remove the requirement for colleagues, patients and visitors to travel to our sites and create an immediate reduction in carbon emissions and air pollution. Digital systems can also help us to address our resource use and reduce the significant amount of paper consumed each year. This can both improve our environmental performance and drive operational efficiency.

It is important to note that adopting digital approaches does not always provide the lowest carbon solution. There is a significant carbon footprint associated with the production and disposal of electric equipment, as well as the storage of digital information in data centres. LTHT will be conscious of minimising this impact when procuring and commissioning new digital technologies and services.

## What we have achieved

The Trust is currently undertaking significant work to upgrade technology throughout the organisation to drive efficiency and improvements in patient care.

Our uptake in the use of telemedicine has rapidly accelerated in response to the Covid-19 pandemic. The use of the Attend Anywhere platform has facilitated virtual appointments, reducing the requirement for patients travel to our sites. In 2021/22 464,882 appointments were provided virtually either using video or telephone calls, this is approximately 37% of all appointments provided. Based on an average 11-mile average journey for our patients, this has reduced patient travel by an estimated 5.1 million miles. Based on an average car this is equivalent to approximately 1,430 tCO<sub>2</sub>e. We are continuing to facilitate these services and other remote clinical services to provide patients with more choice and reduce travel.

Clinicians have led the adoption of digital services, with providing excellent patient care the main priority. The option of providing remote consultations has been well received by patients and colleagues throughout the Trust, and these options will continue to be offered, where clinically appropriate, following the pandemic.



To improve operational efficiency and reduce our resource consumption the Trust has worked to move medical records to a digitalised system. This has removed a huge amount of paper from the Trust. We have also digitalised nurse documentation to improve efficiency for our nursing colleagues. As a result, this intervention has removed around 80% of paper within this setting, equivalent to approximate 75,000 sheets of paper monthly, saving approximately 4.1 tCO<sub>2</sub>e per year.

To support with the digital transformation, the Trust is in the process of upgrading 16,000 computers throughout the organisation. Careful consideration will be given to the end-of-life devices to ensure they are correctly reused or recycled where necessary.

Technology and digital innovation will also be a key feature of our Hospitals of the Future and will enable advanced monitoring which will enable greater health outcomes for patients and greater efficiency for clinicians.

### **Strategic objectives**

- Optimising the use of telemedicine, where appropriate, to offer greater flexibility to patients and reduce travel
- Supporting remote working for colleagues to reduce the impact of commuting
- Continue transitioning to a digital system to drive efficiency and minimise resource consumption from paper, printing and postage
- Minimising the potential environmental impacts of the digital transition



# 12. Travel and transport





# 12. Travel and transport

The NHS is responsible for an estimated 5% of all road traffic in the UK, resulting from colleague, patient, visitor and supplier travel. Road travel from the NHS contributes significantly to air pollution and carbon emissions which in turn negatively affects our environment and population health.

Poor air quality can cause and worsen a range of heart and respiratory illnesses such as asthma and impact lung development in children. It is estimated that over 36,000 people die each year from illnesses related to long term exposure to air pollution. An individual living in Leeds is 21 times more likely to die from factors related to poor air quality than in a road traffic accident.

Road travel is a significant contributor to poor air quality. Due to the large number of colleagues, patients and visitors travelling to our sites every day, LTHT has an opportunity to minimise our contribution to air pollution and improve the health outcomes in our city.

Disadvantaged communities are often the most vulnerable to the impacts of poor air quality and therefore it is vital that we address our impact to work to reduce health inequalities.

As petrol and diesel travel is a driver for climate change and health inequalities there are co-benefits for LTHT in taking action to transition to more sustainable travel. Utilising public transport and low-emissions vehicles reduces air pollution and therefore improves community health. The adoption of active travel such as walking and cycling also has the added benefit of improving user's cardiovascular health and mental wellbeing.

## What we have achieved

Reducing the impacts of travel and transport has been a key area of focus at LTHT for several years. The Trust has demonstrated a commitment to delivering this by allocating £1.5 million of funding to facilitating sustainable travel within our 5-year Capital Plan. Over the last year, our travel colleagues have worked to develop a Sustainable Travel Strategy, this sets out the Trust's commitment to sustainable travel and outline our policies for colleague travel.

In 2020 we successfully launched our 1dayaweek campaign to encourage colleagues to pledge to reduce the amount they drive to work to reduce the impact of commuting. As a result of the pandemic, approximately 7% of our colleagues now work from home each day, which reduces the requirement to commute for over 1,500 individuals. Based on an assumption of 10 miles travelled per commuter

per day this would save 1,130 tonnes of CO<sub>2</sub>e annually and reduce air pollution. To address the impact of commuting further we have also commissioned a car sharing provider to support a car share scheme within the Trust.

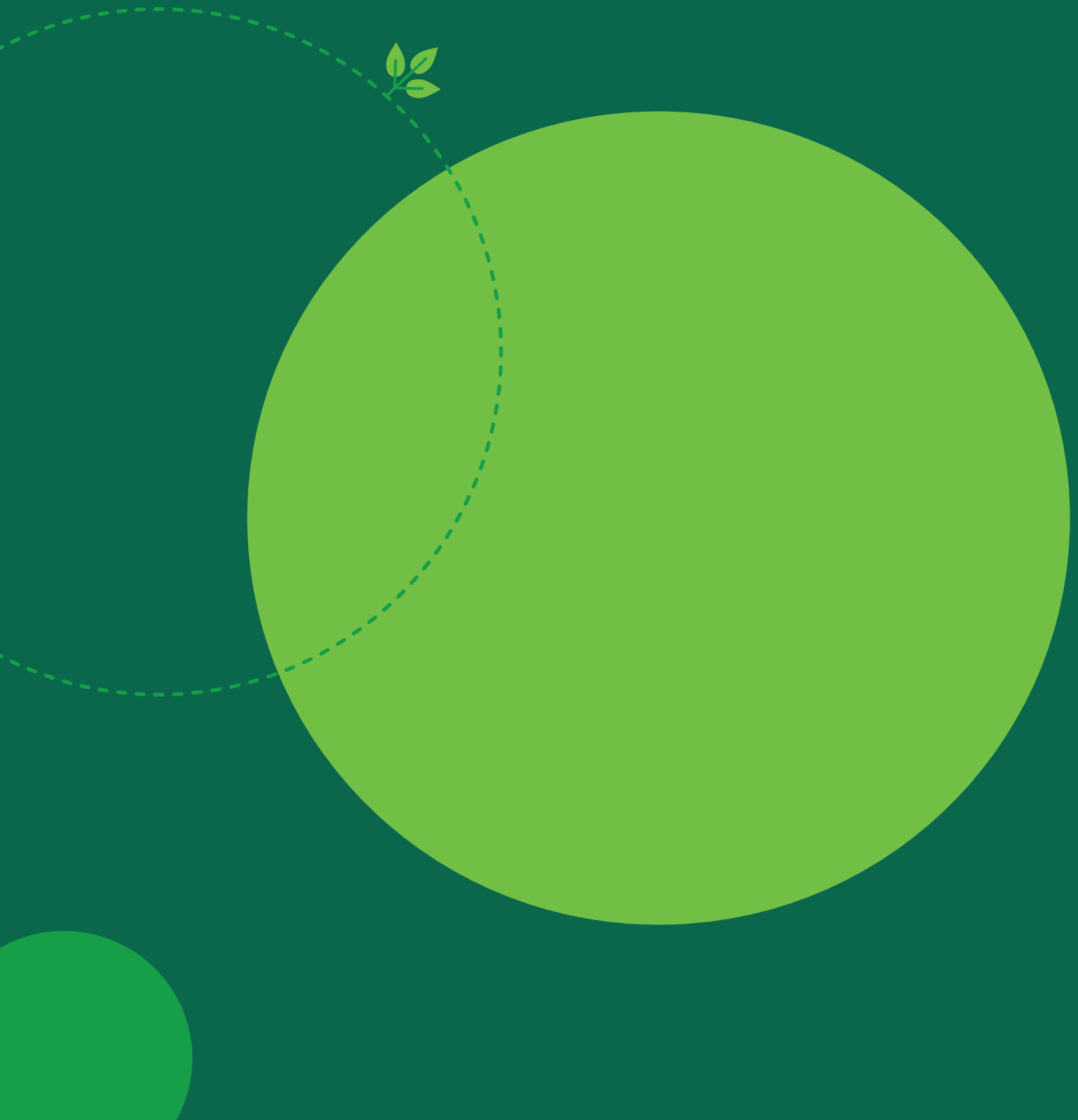
We have been successful in additional funding to extend the cycle facilities within the Bexley Wing and include additional new cycle stores. We have also recently received Silver Level accreditation as a Cycle Friendly Employer, the international benchmark for active travel culture and infrastructure in the workplace.

### **Strategic objectives**

- Facilitating Active Travel and Public Transport in line with the Sustainable Travel Strategy
- Supporting the transition to low and zero emission vehicles
- Maximising efficiencies in the transportation of goods and services



# 13. Estates and facilities



# 13. Estates and Facilities

Emissions associated with the operation of our estates and facilities, including gas and electricity consumption, waste consumption and waste disposal contribute to 91% of our direct carbon footprint. Decarbonising our estate remains a significant challenge in becoming a net-zero carbon organisation, however these emissions are under our direct control, and we have a clear understanding of how these emissions can be reduced.

At present gas dominates as the main fuel powering the LTH estate, and a significant part of our Estates and Facilities Strategy will involve moving away from gas towards other sources of energy especially for electrical generation, heating, and domestic hot water.

It is imperative that we improve our understanding of our energy consumption across different systems and buildings, through installing sub-metering, undertaking energy audits on distribution systems mainly and BMS control reviews. This will be used to identify the best opportunities to make effective energy savings that in turn help reduce our emissions. We will also ensure the estate is highly energy efficient and operational costs are minimised through the use of the ISO 50001 Energy Management Framework.

Alongside these assessments, we will continue to roll out the LED lighting upgrades, glazing upgrades and installation of roof and fabric insulation to ensure our buildings are as efficient as possible. As some of these interventions can be quite disruptive, careful planning to integrate these upgrades alongside the ventilation upgrades and other refurbishments will lead to minimised disruption on our normal operations.

Currently a major constraint, especially for SJUH, is electrical infrastructure capacity and this must be resolved to allow ambitious decarbonisation interventions across the estate, such as PV and additional heat pumps, as well as electrification of transport.

Our Estate Decarbonisation Strategy also relies upon significantly rationalising the estate that will reduce our energy demands and operational costs for running and maintaining buildings of low utilisation. To be successful we must also align the Capital Investment and Estates Strategy to ensure new builds and estate master planning accelerate our journey as well as all investments in the estate having increased rigour that they contribute to our decarbonisation journey.



Connections to the Leeds Pipes District Heat Network and making decisions about more significant connections to decarbonisation of central equipment across the estate will play a key role in decarbonising our estate's operations. This decision needs to be made by considering the resilience strategy of this heating source and long-term decarbonisation credentials of the network, as it extends across the city.

Additionally, alongside our efforts to decarbonise, climate change is presenting new challenges to healthcare. Therefore, as well as mitigation activities we must integrate climate resilience interventions as well as those that have enhance broader sustainable outcomes, such as;

- Seeking to use local suppliers that create local social value benefit(s) wherever possible
- Integrating biodiversity and blue and green infrastructure wherever possible within the estate, especially within masterplans and capital investment projects
- Assess climate risk and resilience of the estate and identify interventions that reduce the risk, prioritising interventions that have dual benefit, such as increasing tree coverage having passive shading benefit.

See Section 13.0 and 17.0 for more information.

### **What we have achieved**

The HoTF project represents a huge part of the Trust's carbon profile, therefore the Trust has decided to capitalise upon the energy supply emission reduction opportunities presented by utilising the lowest carbon energy supply option available. The Trust will utilise air source heat pumps and grid electricity to minimise energy supply emissions associated with the new hospitals. This will require additional funding but has been considered the necessary route to ensure the Trust is able to achieve our net zero carbon ambition and legal obligations with minimal offsetting. This will reduce the operational emissions of LGI by 10,500 tCO<sub>2</sub>e annually.

In 2021 the Trust was successful in our bid to secure ~£13 million in funding through the Public Sector Decarbonisation Scheme (PSDS), to upgrade our estate. This funding has been used to fund to installation of Solar Photovoltaics (PV) at Chapel Allerton and Wharfedale Hospital, air source heat pumps (ASHPs), double-glazing windows, upgrades to our Building Management System (BMS), replacement of lighting with LED lighting and connection to a local district heating scheme. The combined impact of the project is forecast to reduce annual costs by approximately £415,000 and will provide an annual carbon emission of 3,700 tonnes. We have now secured a further £9.3 of PSDS funding which will be used to create a further 10 connections to the district heat network at our SJUH site replacing the fossil fuel energy supply into 10 buildings with a low carbon

alternative from the waste to energy plant. The funding will also be used for roof replacements, draft proofing and insulation upgrades to the site. These interventions will save a further 1,800 tCO<sub>2</sub>e per year.

### Strategic objectives

- Ensure the estate is highly energy efficient where operational costs are minimised through proactive energy management, this includes technologies and behavioural changes to ensure energy efficiency through our energy management system in line with the ISO 50001 Energy Management Framework
- Meet our target for 80% carbon reduction across our estate by 2032 at the latest
- Ensure the estate is fit for the future and facilities high quality healthcare services and a healthy environment for patients, staff and visitors
- Driving the reduction in clinical and non-clinical waste throughout the organisation, in line with the waste hierarchy
- We will continue to secure funding through the Public Sector Decarbonisation Scheme to help fund our decarbonisation journey and seek other opportunities to secure additional funding

### Actions

To decarbonise our estates and facilities, we must consider short term and longer-term activities as to decarbonise the estate, a programmatic response is required alongside coordinated efforts that are aligned to the Capital Estates Strategy, Clinical Strategy and decarbonisation of travel and transport also. Some of the actions below extend beyond the timescale of this Green Plan but it is crucial to have these sighted as actions that the Trust are working towards. These proposed interventions will lead to a reduction in our energy emissions, aiming to meet our 2032 target, as shown in Figure 6. A summary of some of the interventions included in our Estate Decarbonisation Strategy are below.



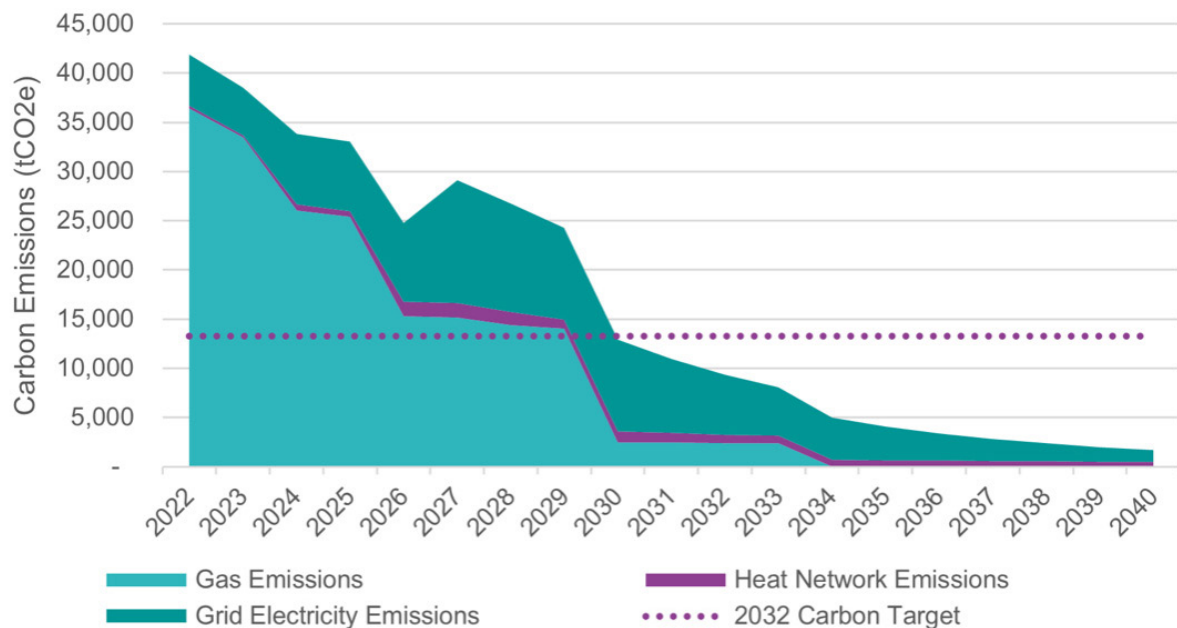


Figure 6 - Summary of the components of carbon emissions within the decarbonisation pathway

### Short term actions (2022-2023):

- Carry out an energy audit and BMS review as well as installing sub-meters across the estate to understand our energy consumption
- Connections to Leeds Pipes heat network as part of PSDS Phase 3 for SJUH
- Collaborate with our PFI providers, to further the success of our decarbonisation interventions
- Switching to ASHPs for CAH
- Achieve ISO 14001 accreditation for our environmental management system

### Ongoing (2022-2030):

- LED installation across the estate in a phased approach, replacing light fittings at end of life
- Continue to roll out glazing upgrades across the estate, accelerating where possible within Capital Plan and using grant funding where possible
- Monitor and report electrical load increases for new plant installations as well as expected demand profiles and resilience requirement to LTHT estates teams for coordination
- Ventilation upgrades – install heat recovery and energy efficiency interventions
- Planning and coordination of PV installation across the estate to reduce operational costs



### **Medium term actions (2024-2025):**

- Review resilience strategy and Trust ambitions for larger scale connections Leeds Pipes for larger clinical blocks / Identification of a resilience strategy and potential options for the Leeds Pipes network
- Upgrades to electrical infrastructure at SJUH to enable significant decarbonisation activities across E&F and T&T
- Upgrade and install glazing and building insulation for SEA and selective buildings at SJUH
- Phase off/out CHP within SJUH to reduce fossil fuel reliance
- Work alongside the University of Leeds to identify decarbonisation options for the Generating Station Complex (GSC)
- Feasibility plans for installation of heat pumps across SJUH and WAR

### **Long term actions (2025-2030):**

- Bringing online the new HoTF
- Upgrade and install glazing and building insulation for LGI
- Larger scale roll out of electrification of heat initiatives for SJUH, WAR, SEA
- Review electrical infrastructure capacity and upgrade as necessary
- Demolition of selected buildings no longer in use at each site

# 14. Biodiverstiy and green spaces



# 14. Biodiversity and green spaces

Providing accessible green spaces throughout our estate is vitally important for protecting our local environment, supporting biodiversity and promoting the health and wellbeing of patients, colleagues, visitors and our local communities.

We see the green spaces on our estate as a valuable asset. Maintaining healthy green spaces across our estate has a number of benefits for our environment and community. These spaces provide habitats for wildlife, promoting biodiversity across the city. Green spaces and plants can also help to improve air quality, help drainage and provide temperature regulation across our sites.

In addition, access to green space plays an important role in promoting wellbeing and has been linked to improved health outcomes for patients. Supporting greenspace projects is an integral aspect of our ICS's work to promote green social prescribing to help people connect to nature to improve their mental and physical health.

As a large organisation, it is also crucial that we consider our impact on biodiversity, directly or indirectly, on biodiversity globally through our supply chain. We are reliant on natural resources and must ensure that we are minimising our impact on habitat loss through the products and services we purchase to preserve valuable global ecosystems. This will involve understanding the impacts of our supply chain, engaging suppliers and supporting purchasing standards for high-impact items.

## What we have achieved

Our Estates and Facilities team continue to work to establish and maintain safe and accessible green spaces throughout our estate. We aim to maximise green spaces throughout our estate, regardless of the location. We monitor the amount of green space utilised on our estate through periodic assessments of our sites using aerial photography analysis.

These green spaces include maintaining grass area, protecting trees and installing green roofs on new builds within the estate.

In 2022 the Trust joined the NHS Forest, a tree planting alliance run by the Centre for Sustainable Healthcare working to transform green spaces across the NHS estate. As part of this project, 60 colleagues across the Trust volunteered to plant trees across SJUH. As St James's Hospital is located in an area with limited green spaces, the 1,520 trees planted at the site will have a positive impact on the site's biodiversity, visual appearance and air quality.





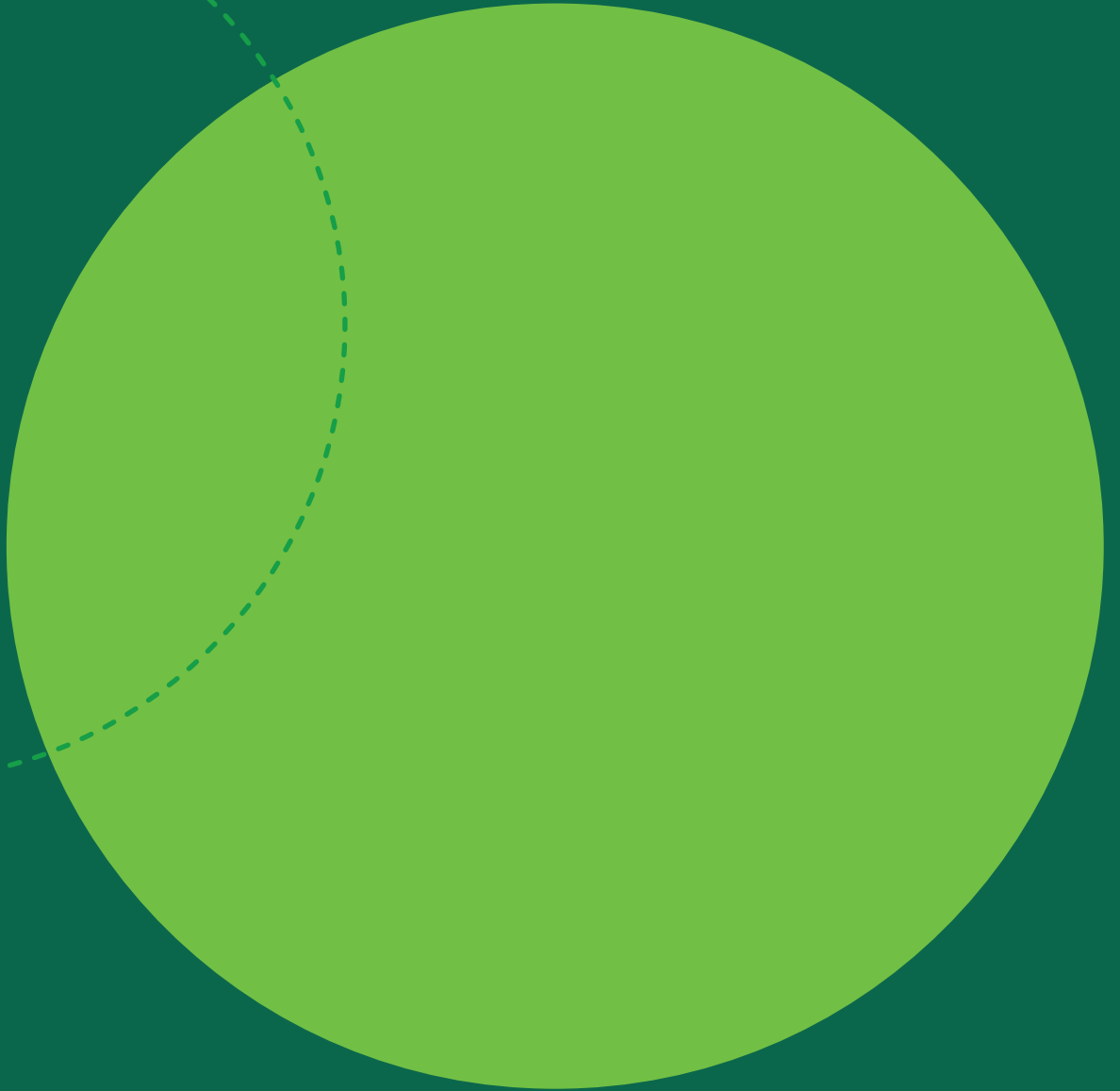
As part of the Trust's GRASP initiatives, the Sustainability Team also developed an opportunity for staff to partake in a nine week Horticultural Therapy Growing Well programme. The project was open to any member of staff who was feeling overwhelmed, tired, stressed, isolated or anxious and provided them with the opportunity participate in activities including sowing seeds, growing veg, digging out beds to create new garden areas, and harvesting and preparing food that was grown. The Growing Well project, run in partnership with Lemon Balm allowed colleagues to be in nature, meet new people & connect, learn new things and help create a garden to improve biodiversity and provide a space for others to enjoy.

The Trust aims to minimise the impact of our procurement on deforestation through the purchase of FSC-certified and recycled paper. As part of our digital transformation, the Trust is also working to minimise the quantity of paper procured within the organisation to minimise resource consumption and drive improvements in efficiency and patient care.

### **Strategic objectives:**

- Maintain and protect healthy habitats across our estate to promote biodiversity
- Maximise the provision of accessible green space within our estate to improve the wellbeing of our colleagues, patients and community
- Work to understand and minimise the impact of our supply chain on global biodiversity and ecosystems

# 15. Medicines





# 15. Medicines

Medicines contribute to a quarter of the NHS' total annual carbon emissions. Some medicines have a higher carbon impact upon use than others, with volatile anaesthetic gases and metered dose inhalers accounting for two greenhouse gas emission hotspots, making up 5% of total carbon emissions. Other medicines make up another 20% of the total carbon footprint of the NHS, with these emissions primarily associated with the supply chain, arising from the manufacturing, packaging, transportation and disposal of the medicines.

The Trust has made significant progress in minimising the emissions from anaesthetic gases. We will continue to target this area and will expand our efforts to begin to address the impact of wasted Nitrous Oxide and Entonox across the organisation.

We will also address inhaler emissions over the course of this Green Plan. Emissions can be minimised throughout the lifecycle of inhalers. By supporting patient choice of lower carbon inhalers including dry power inhalers and soft mist inhalers, where clinically appropriate, we can reduce the overall impact of inhaler use. We can also encourage correct use and disposal to minimise the unnecessary release of greenhouse gases.

As a significant proportion of emissions results from the medicines supply chain, LTHT will continue to work with pharmaceutical suppliers to support their alignment to our 2045 net-zero target. We will continue to lobby our suppliers to improve their environmental impacts and identify opportunities for reducing the waste associated with pharmaceutical products.

To create further carbon emissions reductions from the optimisation of medicines use, we will adopt a system wide approach to addressing overprescribing to ensure that patients are receiving the most effective treatment for their condition whilst minimising unnecessary medicines wastage and carbon impact.

Many of the interventions set out within this theme will require a collaborative approach between primary and secondary care to ensure that sustainability is a consideration in our approach to prescribing.

## What we have achieved

At LTHT we have made significant progress in reducing the emissions associated with anaesthetic gas use. In our baseline year, anaesthetic gases made up 8% of our Scope 1 and 2 emissions. The clinical application and impact of using Sevoflurane instead of Desflurane is negligible in most cases, however Desflurane produces 14 times more CO<sub>2</sub>e per bottle. The shift away from Desflurane use has cut emissions from anaesthetic gases by 81% from the baseline.

This work has been championed by the Theatres team who engaged with colleagues in 2019/20 to promote the use of Sevoflurane. The Board has now pledged to use Sevoflurane as the default anaesthetic gas where clinically appropriate.

The Sustainable Theatres Group meet regularly to discuss opportunities for improving sustainability within Theatres and Anaesthesia. The group champions sustainability innovation within the department and work collaboratively with suppliers and the Sustainability Manager to drive change.

In 2020 the Respiratory Team undertook a study on the carbon impact of inhalers prescribed at the Trust. As a result they produced an inventory of carbon factors for the types of inhalers used within the Trust. These factors were used to calculate the impact of inhalers for 2021/22. The impact of inhalers has now been included in our Carbon Baseline, to enable the Trust to monitor the monitor the reduction in emissions generated from the actions set out in this strategy to minimise the impact of metered dose inhalers.

### **Strategic objectives**

- Optimising prescribing of medicines
- Promoting the minimisation of medicine waste and related wastes
- Encouraging the responsible capture of medicines waste and improving the impacts of disposal
- Accelerating the transition to low-carbon medicines



# 16. Supply chain and procurement





# 16. Supply chain and procurement

The delivery of our services relies on the procurement of a huge variety of goods and services. The medical devices and equipment, medicines, ICT, construction, manufactured products and commissioned healthcare services, although essential, each contribute to our scope 3 emissions as part of our Carbon Footprint Plus.

The NHS supply chain is responsible for approximately 62% of all NHS emissions. Although our Scope 3 emissions are indirect and not under the direct control of LTHT, we have the opportunity to minimise these emissions and can address them through careful selection of what we purchase. We can also use our individual and collective purchasing power as an anchor institution to influence the supply chain to make sustainable choices and drive a reduction in the embedded carbon emissions of the goods and services we procure.

We can also add social value through our procurement decisions. Prioritising purchasing locally can support our local and regional economy, boost employment locally and have a positive social impact on our region. Social value will now be assessed formally within any procurement/tender and we will seek to use NHS Supply Chain or local suppliers that create local social value benefits wherever possible.

## What we have achieved

Significant work has been undertaken to improve the impact of procurement at LTHT. As carbon emissions from our supply chain make up a significant proportion of our Carbon Footprint Plus, we have worked with a contractor to analyse the carbon impact of all of the goods we procure. This detailed analysis enables the Trust to assess the carbon impact of each item we are looking to purchase and make easy comparisons which can then be factored into procurement decisions. This is now linked into our Connexica procurement system to enable us to monitor our carbon emissions from procurement in real time and make like to like comparisons of the carbon impact of goods and services we procure. This will enable us to easily identify low carbon alternatives and support our suppliers in their journeys to becoming net-zero.

We have considered the waste disposal routes of many products we are purchasing to ensure that we are working in line with the waste hierarchy. We now recycle drapes and gowns that were previously single use. We have also invested in a Sterimelt system to enable the Trust to recycle single use plastics from theatres packaging into reusable plastic blocks.



In addition to the impact of the goods and services we procure, we are also working to address the impacts of transporting these items. To minimise the transport impacts we are consolidating our deliveries to one centralised warehouse. Instead of each supplier delivering to 5 sites, suppliers will now deliver to one site and then LTHT will transport items in electric vehicles to our estate. This is expected to reduce annual deliveries from 18,000 to approximately 8,000, which will significantly reduce our impact on local air quality and create a significant carbon reduction.

### **Strategic objectives**

- Assessing the carbon impact of our supply chain and addressing carbon hotspots
- Engaging with suppliers to accelerate sustainable changes within our supply chain
- Integrating sustainability into all our procurement practices
- Optimise our operational processes to reduce unnecessary procurement

# 17. Food and nutrition





# 17. Food and nutrition

Ensuring that patients are provided with nutritious meals is valuable to their recovery and overall health and wellbeing. The NHS recommends a diet that is low in heavily processed foods high in sugar, salt and fats to promote a healthy balance. When supported with seasonal and locally produced fruit and vegetables, this is also a low carbon diet which can improve health outcomes for patients and limit our environmental impact.

Food is estimated to produce 6% of the NHS' total Carbon Footprint Plus each year. This results from the ways food is grown or made, processed, delivered and served. Significant emissions also result from food waste disposal. An estimated 1 in 6 meals in the NHS is wasted, costing the NHS an estimated £230 million, or 39% of the total spending on food.

Nutritious food has been seen to improve clinical outcomes for hospitalised patients, such as reducing complications, lengths of hospital stays and re-admission rates through preventing malnutrition. There is a clear link between improving the sustainability of food and the health and wellbeing outcomes of patients.

## What we have achieved

The catering team at LHTH have implemented a number of initiatives to reduce the environmental impact of our patient catering. The team aim to provide multiple food choices that meet patient needs whilst also being sustainable and nutritious.

We have removed processed meats from all main menu items, excluding one, and significantly reduced red meat options including all lamb and most beef options. As 90% of our patients eat off our main menu, this has created a significant reduction in the amount of high carbon foods being consumed during main meals. This also helps to promote a balanced diet.

The Trust has also undertaken work to reduce the single use packaging associated with our food services. We have replaced pre-packaged sandwiches with sandwiches prepared in house and packed in compostable materials. This has required an additional cost to the Trust but has been considered worthwhile for the amount of waste saved. We have also worked to reduce single-use disposable foil packaging by using large reusable trays for heating food where possible. We also continue to monitor new innovation in packaging to reduce the amount of waste we are producing.

## Strategic objectives

- Minimising the amount of food waste produced and managing it according to the waste hierarchy
- Reducing the impact of single use food packaging
- Providing nutritious and low carbon food options for patients and colleagues

# 18. Adaptation





# 18. Adaptation

We recognise significant risks that climate change presents in our region. Climate change has been described by the World Health Organisation as the single biggest health threat facing humanity in the 21st century.

Climate change is already starting to lead to an increase in temperatures, sea levels and extreme weather events such as floods, droughts and storms. This is starting to impact our ecosystems and population health. We expect to see a change in the types of illness treated due to climate change such as infectious diseases and the number of patients due to climate related impacts such as heatwaves is likely to increase. These issues are also likely to have a negative impact on mental health.

In addition to the changes to patients, climate change could also threaten our ability to deliver care. Many of the effects of climate change may impact our supply chain and our colleagues.

In addition to taking mitigation measures to limit our impact to climate change, it is also vital that LTHT as a key healthcare provider adapts to the potential impacts of climate change.

Building resilience into our buildings, services and systems is essential to ensure we are equipped to continue providing high level care despite the changing climate.

## What we have achieved

Since the publication of the first Green Plan in 2020, the Trust has focused efforts on the mitigation of climate change rather than adaptation. Less progress has been made in this area due to other organisational pressures experienced during the duration of the Plan due to the COVID-19 pandemic. The Trust recognises the importance of preparing the organisation for climate change to ensure that we are resilient to the potential impacts and can continue to provide high quality care.

This version of the Green Plan sets our objectives for climate change adaptation. This has also been recognised as a priority by our ICS, and we will work collaboratively to align our adaptation strategy to those of our partners in the ICS and other anchor institutions.

## Strategic objectives

- Assessing the potential operational risks posed by climate change so we can manage our response
- Monitoring extreme weather events and their impact on our Trust
- Integrating climate change into our continuity plans and transformation strategy
- Educating our colleagues and partners on the risks of climate change to health and the provision of healthcare
- Prioritising passive building solutions as well as those that have secondary benefits to improve climate resilience

# 19. Monitoring our progress





# 19. Monitoring our progress

The Trust recognises that to meet the challenging targets ahead of us the commitment to improving sustainability should be the responsibility of everyone at the Trust and will need to become embedded within our organisational culture. We have defined a clear governance structure to ensure accountability for the implementation of this Green Plan.

## National level:



- Greener NHS Team
- NHS Net Zero System Leadership Group

## Regional level:



- West Yorkshire and Harrogate Health and Care Partnership
- West Yorkshire and Harrogate Health and Care Partnership's Climate Change Team
- West Yorkshire and Harrogate Health and Care Partnership's Net Zero Board Leads

## Trust level:



- Trust Board
- Strategic Sustainability Group (SSG)
- Head of Sustainability
- Grasp Champions Network

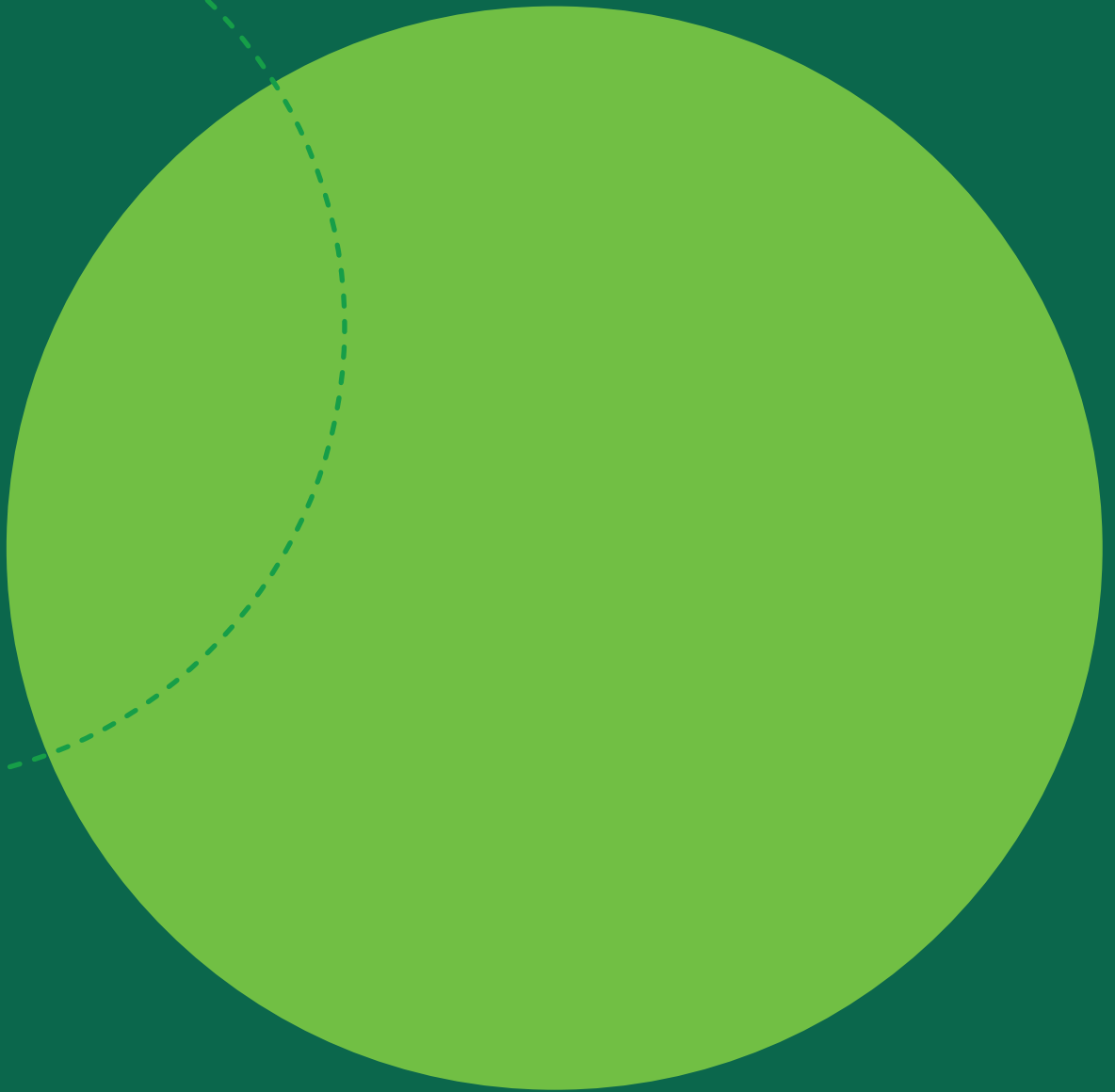




## Reporting

We will continue to report our progress against our action plan and towards our net zero carbon targets to the Board. Our SSG will report our progress into the Estates Strategy Programme Board who report to the Finance and Performance Committee every six months. We will continue to provide honest and transparent reporting on our impacts, with a standing sustainability section included in our annual report.

# 20. Glossary of terms





## 20. Glossary of terms

### **Air Pollution**

The presence and introduction into the air of a substance which is harmful to human health.

### **Carbon Intensity**

A means of calculating the amount of carbon generated for a specific energy source (e.g., electricity).

### **Carbon Net-Zero**

A state in which an organisation emits no carbon emissions from its activities. Or a state in which all remaining carbon emissions are offset.

### **CO<sub>2</sub>e (Carbon Dioxide Equivalent)**

A unit used to express total greenhouse gas emissions. There are multiple GHGs, each with a different impact on climate change. CO<sub>2</sub>e equates all GHGs to the impact of carbon dioxide. CO<sub>2</sub>e is used to report all GHG emissions.

### **Greenhouse Gas (GHG)**

A gas that contributes to the greenhouse effect, leading to climate change (e.g., CO<sub>2</sub>).

### **Global Warming Potential (GWP)**

A measurement that enables the comparison of global warming impacts of different greenhouse gases.

### **kWh (Kilowatt Hours)**

A unit of measurement for energy usage (e.g., gas and electricity).

### **Direct Emissions**

CO<sub>2</sub>e emissions from sources which are owned or controlled by the Trust.

### **Indirect Emissions**

CO<sub>2</sub>e emissions from sources which are not owned or controlled by the Trust, but are generated due to the Trust's activities (e.g., purchase of electricity, procurement, waste disposal).

### **Scope 1 Emissions**

Direct emissions from owned or controlled sources (e.g., on-site fuel combustion, company vehicles, anaesthetic gases).

### **Scope 2 Emissions**

Indirect emissions from the generation of purchased electricity, steam, heating, and cooling.

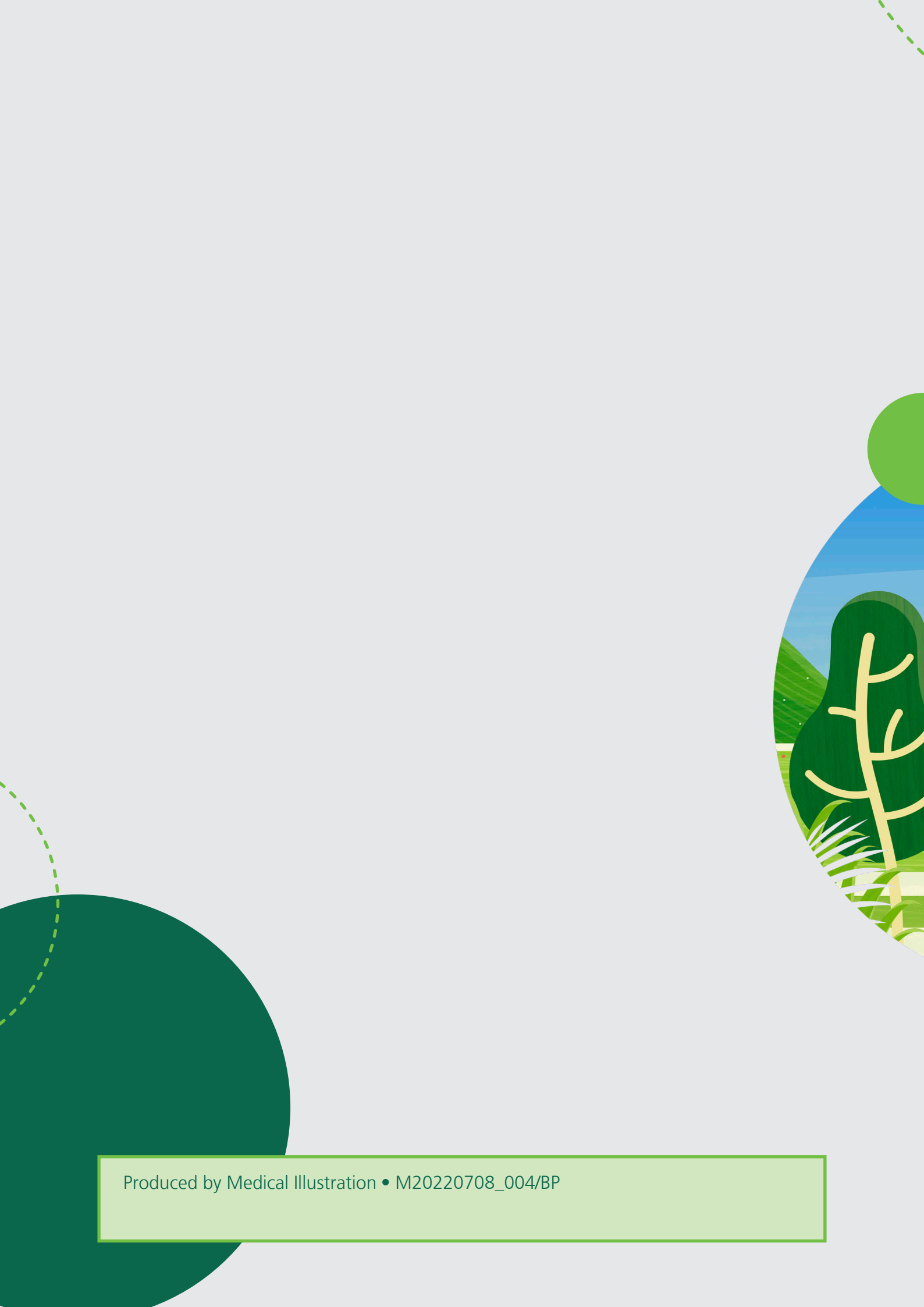
### **Scope 3 Emissions**

All other indirect emissions that occur in an organisation's supply chain (e.g., purchased goods, employee commuting, waste disposal).









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