



Creating a Greener CCC:

Our plan to achieve net zero carbon
Summary of our Green Plan 2022–2027

Introduction

Climate change has been widely recognised as one of the greatest threats to public health globally, nationally and in our region. The NHS is leading by example and has set an ambitious target to achieve net zero carbon emissions by 2040.

As one of three specialist cancer centres in the UK, our mission is to drive improved outcomes and experience through our unique network of specialist cancer care across Cheshire & Merseyside.

The environmental consequences of climate change and air pollution could mean increased risk of cancer so it's important that we act now and play our part in tackling this threat.

Our Green Plan aims to:

Drive sustainable change across the Trust over the next five years and prepare us for transition to delivering net zero carbon healthcare within two decades.

The Green Plan sets clear objectives and targets to take us to net zero carbon. It also includes an action plan explaining how we will achieve this.

Why this matters

The UN's Intergovernmental Panel on Climate Change (IPCC) has warned that global warming and its environmental impact are widespread, rapid and intensifying. This has huge implications for the environment and human health.

Organisations including the World Health Organisation, British Medical Association, Royal College of Nursing and Royal College of Physicians view climate change as the greatest threat of the 21st

century to global health. The impacts range from food production to water availability, extreme weather events (e.g. flooding and droughts) and disease prevalence.

The UK Government set a mandatory target to achieve net zero carbon by 2050 (Climate Change Act 2008). Local bodies including Liverpool City Region Combined Authority, Liverpool City Council, Sefton Council and Wirral Council have declared climate emergencies.

As an anchor institution in our local communities and a leading specialist healthcare provider, we have a responsibility to do all we can to minimise climate change by reducing our carbon emissions.

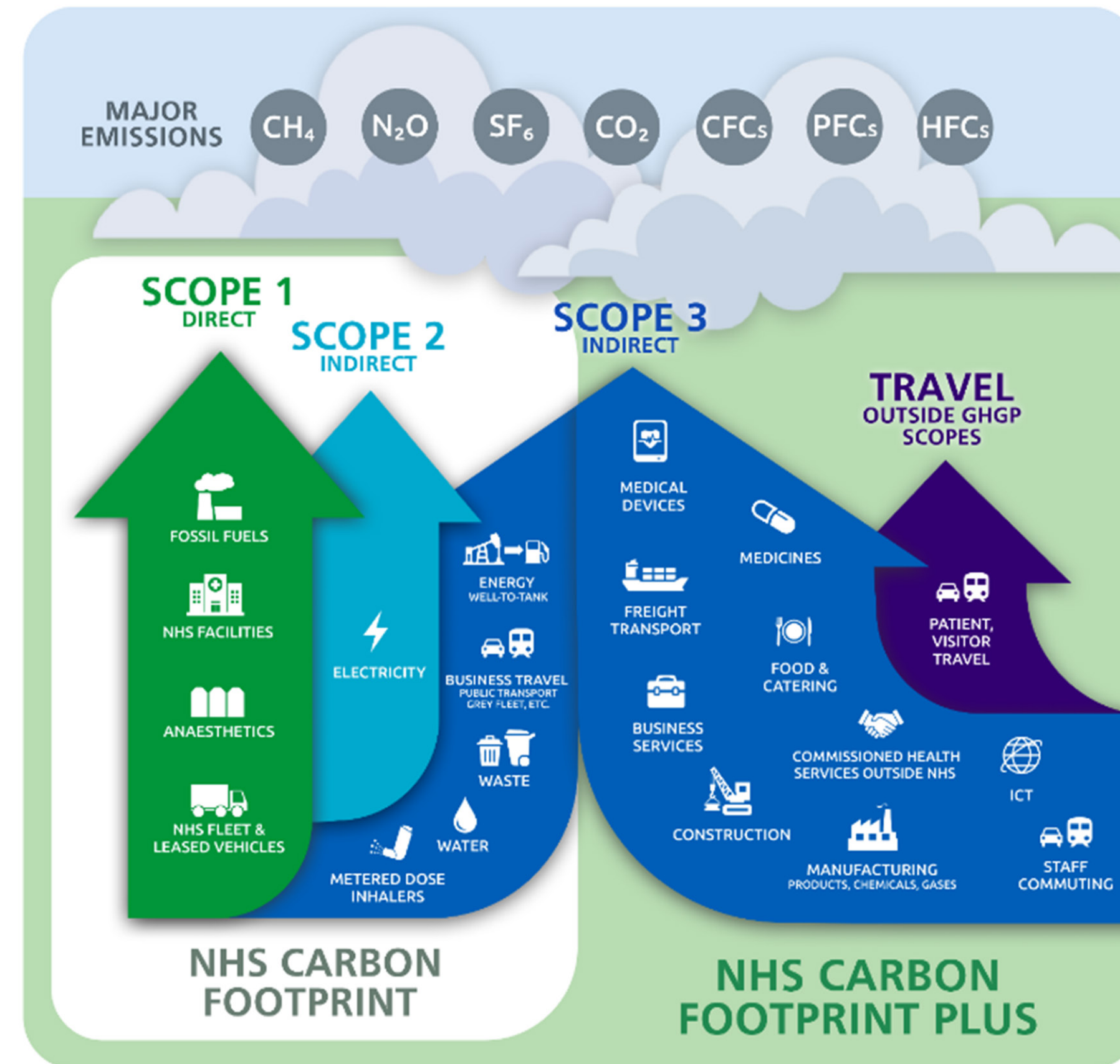
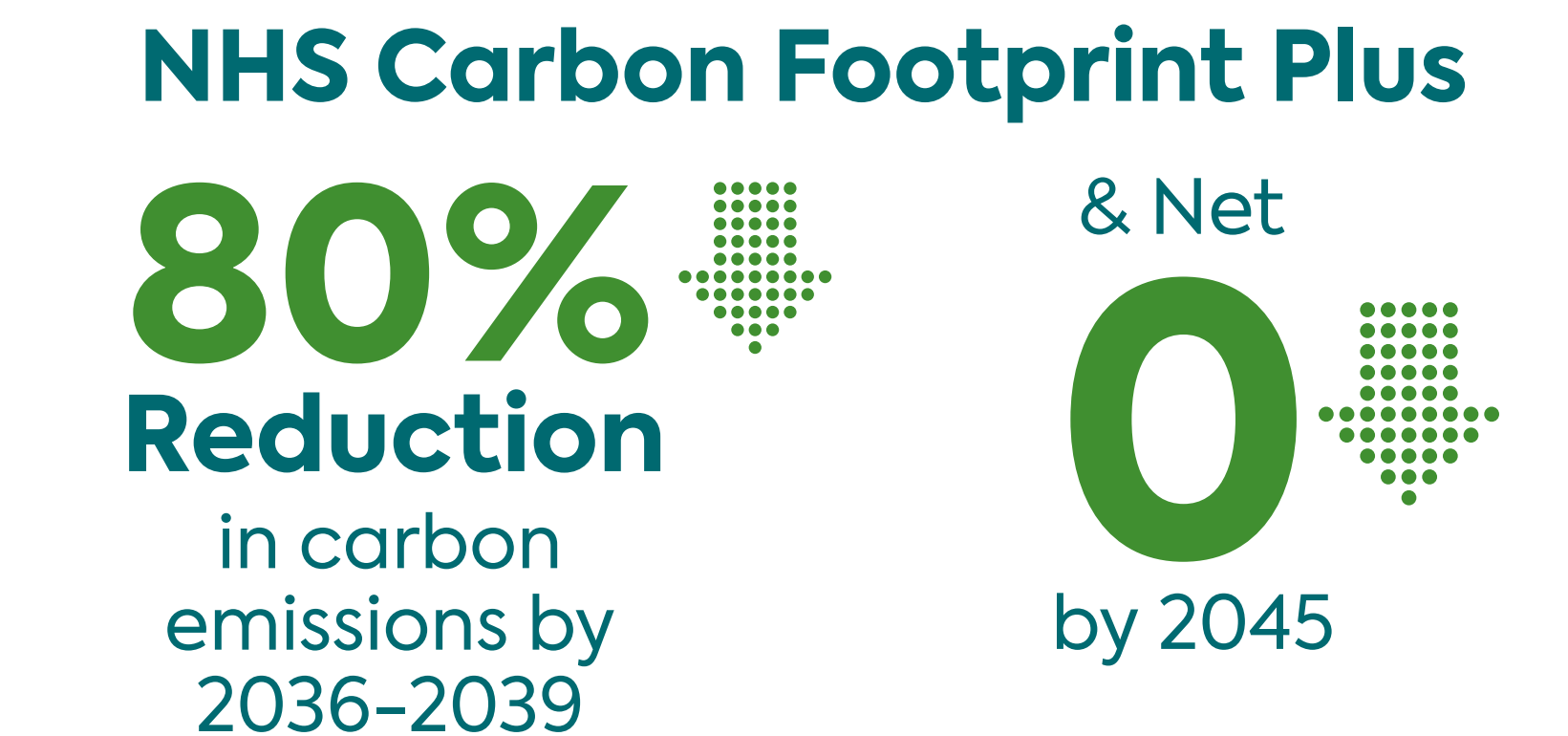
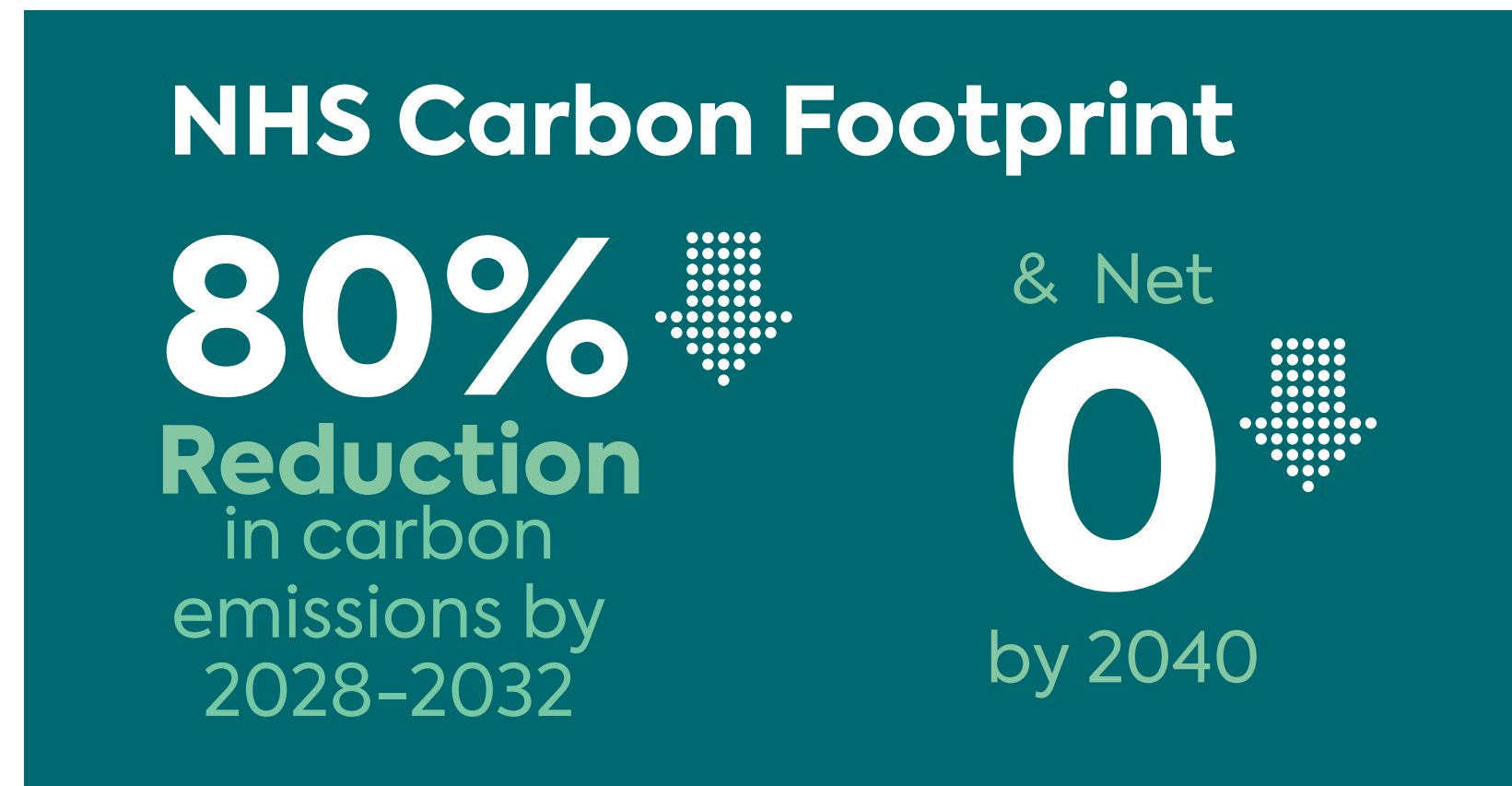
The NHS nationally also expects this of us and has set ambitious targets that all NHS organisations need to achieve.

A Greener NHS

Climate change and the need for greener ways of working has climbed higher and higher on the policy agenda in recent years, including within the NHS. Nationally, the NHS aims to achieve net zero carbon several years earlier than the target set

by the UK Government. There is now a wealth of guidance and policies that set clear expectations for every NHS organisation as well as for the NHS as a whole, highlighting the importance of us addressing our impact on the environment.

National NHS Targets




Local partners


We deliver cancer care at sites across Cheshire & Merseyside including in other hospitals and patients' homes/workplaces and we are part of the wider health and care system. Working together with our partner organisations will be key to delivering net zero health services.

Site partners  

- PropCare
- Clatterbridge Diagnostics
- VINCI
- Clatterbridge Private Clinic
- ISS
- PharmaC
- Blackburne House cafe
- Wirral University Teaching Hospital
- RVS
- Volunteers
- Maggie's Merseyside
- Suppliers

The Clatterbridge Cancer Centre 

- Clatterbridge Cancer Centre – Aintree
- Clatterbridge Cancer Centre – Liverpool
- Clatterbridge Cancer Centre – Wirral
- Clatterbridge clinics in other hospitals
- Clatterbridge in the Community (treatment at home or at work)

NHS partners 

- NHS England/Improvement
- Cheshire & Merseyside Health and Care Partnership
- Other NHS trusts
- Ambulance trusts
- NHS Blood & Transplant
- Primary care

Other partners 

- Local authorities (incl Liverpool & Wirral)
- Liverpool City Region Combined Authority
- Liverpool Health Partners
- Merseytravel
- Voluntary and community sector
- Universities & other academic partners
- Research partners
- Deanery and other education/training providers

A Greener CCC

We have set ourselves the following targets, in line with the national NHS targets.

Waste
Zero waste to landfill policy

Air pollution

20% reduction in air pollution emissions from business mileage and fleet by March 2024

90% of our fleet will be low, ultra-low and zero emission vehicles by 2028

Carbon reduction

Directly controlled

80% reduction in carbon dioxide equivalent (CO₂e) emissions by 2032

100% reduction by 2040

Indirectly controlled

80% reduction in carbon dioxide equivalent (CO₂e) emissions by 2039

100% reduction by 2045

The journey so far

We have already taken a number of steps to reduce carbon emissions, adopt sustainable working practices and deliver social value.

Saving energy



- LED lighting on all 3 sites (CCC-A, CCC-L, CCC-W*)
- Motion-controlled lighting on all 3 sites
- Additional pipe & hot water insulation at CCC-W
- 100% renewable electricity at CCC-L
- Photovoltaic arrays at CCC-L
- 50% CHP-powered hot water at CCC-W
- Natural ventilation at CCC-A, reducing need for mechanical cooling
- Heat recovery on ventilation systems at CCC-L and CCC-A

Sustainable care



Reducing patient journeys through:

- Clatterbridge in the Community – treatment at home or work
- Networked model with care provided close to home



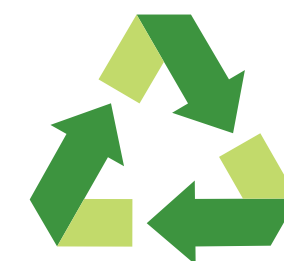
Environment

- Air filtration providing excellent indoor air quality at CCC-L
- Temperature control at CCC-L
- Replanting and landscaping of spaces at CCC-W
- Plants on terraces & in offices at CCC-L and The Spine
- Winter Garden at CCC-L
- Working with NHS Forest



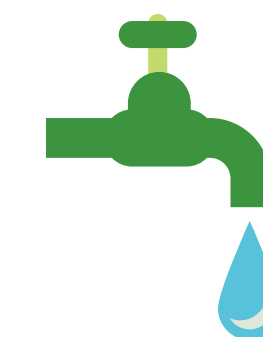
Travel

- Hybrid working
- Virtual clinics (phone/video consultations)
- ‘Cycle to work’ scheme
- Active travel initiatives incl bike lockers & showers
- Public transport incentives for CCC-L
- Electric Vehicle (EV) charging points on some sites



Waste

- Paperlite working / EPR
- Recyclable packaging & cutlery in Blackburne House café



Water

- 75% automatic taps across all 3 sites
- Leak detection on CCC-L & CCC-A water systems

*Clatterbridge Cancer Centre – Aintree, Clatterbridge Cancer Centre – Liverpool, Clatterbridge Cancer Centre – Wirral

Going green for CCC-Liverpool

Our flagship new Clatterbridge Cancer Centre – Liverpool was designed with **sustainability** at its core:

- BREEAM Excellent
- Modern methods of construction
- High-performance façade minimising heat loss
- Dynamic control systems for energy efficiency (50% above Department of Health & Social Care guideline targets)
- Photovoltaic (PV) panels
- 30% electricity generated on site by low and zero carbon systems
- Combined Heat & Power (CHP) unit
- Connected to site-wide district heating network
- 23.6% reduction in regulated CO₂ emissions



Social value has also been fundamental:

- Use of local workforce & supply chain reduced the travel impact of construction
- Social enterprise Blackburne House runs our hospital café, using local suppliers and reinvesting profits into training & employment for local women
- Ongoing training, education & employment opportunities for local people

Energy efficiency and sustainability will continue to improve as we **optimise the building management system**. Data from independent sensors throughout the hospital monitor how the system is performing throughout the year (e.g. measuring any heat loss). We can then adjust the building management system to make it even more efficient.

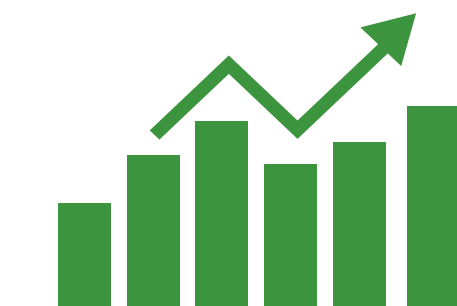
We plan to follow the same approach as we upgrade and refurbish CCC-Wirral:

Step 1



Design & build an efficient building

Step 2



Use performance data to make it even more efficient after it opens

Our starting point

We have calculated our baseline carbon footprint from the emissions we can directly control (NHS Carbon Footprint). This includes:



Waste



Fleet travel



Fossil fuels



Water



Business travel



Electricity



Anaesthetic gases








We will seek to quantify indirectly controlled emissions (e.g. those relating to our supply chain, staff commuting and patient/carer journeys) over the next few years so we can achieve the NHS Carbon Footprint Plus target by 2045.

Our baseline carbon footprint

We are using 2020/21 as our baseline year as this was when Clatterbridge Cancer Centre – Liverpool opened. Using 2020/21 means the baseline accurately reflects our current estate and the locations where we operate.

We have calculated our emissions using the Government’s national carbon conversion factors.

Our baseline carbon footprint (2020/21)

	Tonnes a year
 Fleet travel	133
 Business travel	40*
 Water	49
 Fossil fuels	1,046
 Anaesthetic gases	4
 Electricity	2,257
 Waste	29
Total	3,558

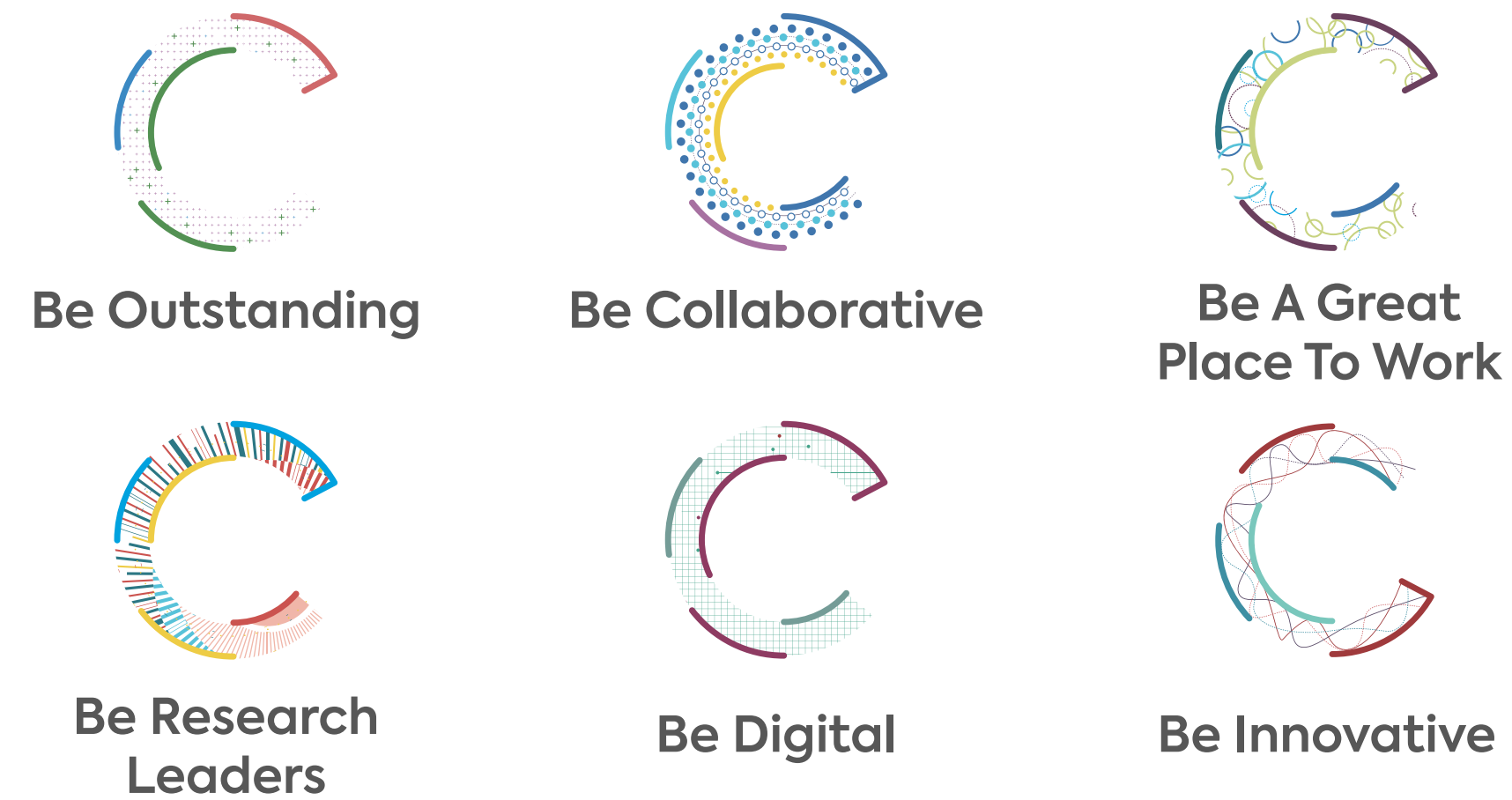
*Business travel was unusually low in 2020/21 due to the COVID-19 pandemic

Our commitment

We have a strong commitment to sustainability and to providing high-quality care in a way which:

- Does not negatively impact the environment
- Achieves positive financial performance, and
- Adds value to our communities

Our commitment to sustainability is reflected in our strategic priorities. Creating a Greener CCC aligns closely to all six of our strategic priorities:



Be Outstanding

Relationship with a Greener CCC	Adopting a patient-focused approach to sustainability means we can deliver high-quality care and strong operational and financial performance (e.g. energy efficiency & less waste)
We will	Use performance data to optimise CCC-Liverpool's building management system for efficiency, then use similar data available for other sites
We will	Introduce a waste management, recycling and compactor system across the Trust
We will	Set ambitious departmental targets for sustainability and minimising waste

Be Collaborative

Relationship with a Greener CCC	By working with partners we can gain support for a Greener CCC and encourage good practice in our supply chain
We will	Work with partners and industry to implement sustainable projects
We will	Reach out to partners, social enterprises and industry on mutually beneficial green opportunities
We will	Do business with sustainable and ethical suppliers of goods and services

Be a Great Place to Work

Relationship with a Greener CCC	Engaging staff in sustainability – something we know many of them care about – will help us attract and retain highly-skilled and motivated people
We will	Launch a green travel plan, including incentives to encourage people to choose public transport, active travel & car sharing
We will	Develop a network of sustainability advocates
We will	Raise awareness & support staff in adopting greener working practices

Be Research Leaders

Relationship with a Greener CCC	Better understanding of environmental impacts on health is key to our role as research leaders at the forefront of cancer care
We will	Work with partners to look for more sustainable ways of delivering cancer care
We will	Look at ways of carrying out research in a more sustainable way
We will	Adopt emerging technology (e.g. potential use of AI to improve building management systems)

Be Digital

Relationship with a Greener CCC	Delivering digitally-transformed services will empower patients and staff and help achieve a Greener CCC
We will	Continue to promote agile and hybrid working (incl MS Teams) and appropriate use of virtual clinics (e.g. phone/video consultations)
We will	Go paperless by digitising documents wherever possible and using recyclable alternatives where needed
We will	Engage with digital services and apps that help people to be green, including reduce/re-use/recycle, cycle & walking routes, public transport, car sharing etc

Be Innovative

Relationship with a Greener CCC	We can explore new and more sustainable working practices and equipment, improving patient care
We will	Upgrade our estate for energy-efficiency (e.g. installing greener lighting and air conditioning units)
We will	Find recyclable solutions for consumables (e.g. chemotherapy pump batteries, sharps and cleaning products)
We will	Source staff uniforms made from sustainable materials and create a 'swap shop' for re-using uniforms when staff change roles

Health & wellbeing benefits of going green

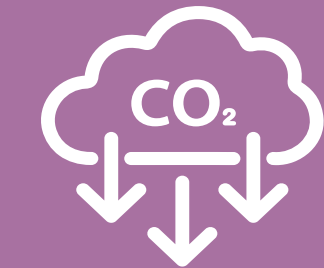
The next phase of our estates strategy will be investment in CCC-Wirral to significantly enhance facilities for patients and staff. Sustainability and energy-efficiency will be key elements as we develop the site over the coming years.

Green space will also be core with many benefits for mental health & wellbeing, which is particularly important in cancer care.

As we develop CCC-Wirral over coming years...

By:

- Making the most of the beautiful rural setting
- Improving biodiversity & green spaces
- Creating sustainable/active travel options
- Using space more efficiently
- Harnessing low and zero carbon technologies



We will:

- Improve patient & staff experience
- Promote healthier alternatives
- Create a greater sense of wellbeing for patients & staff
- Reduce carbon emissions
- Make better use of resources & reduce waste

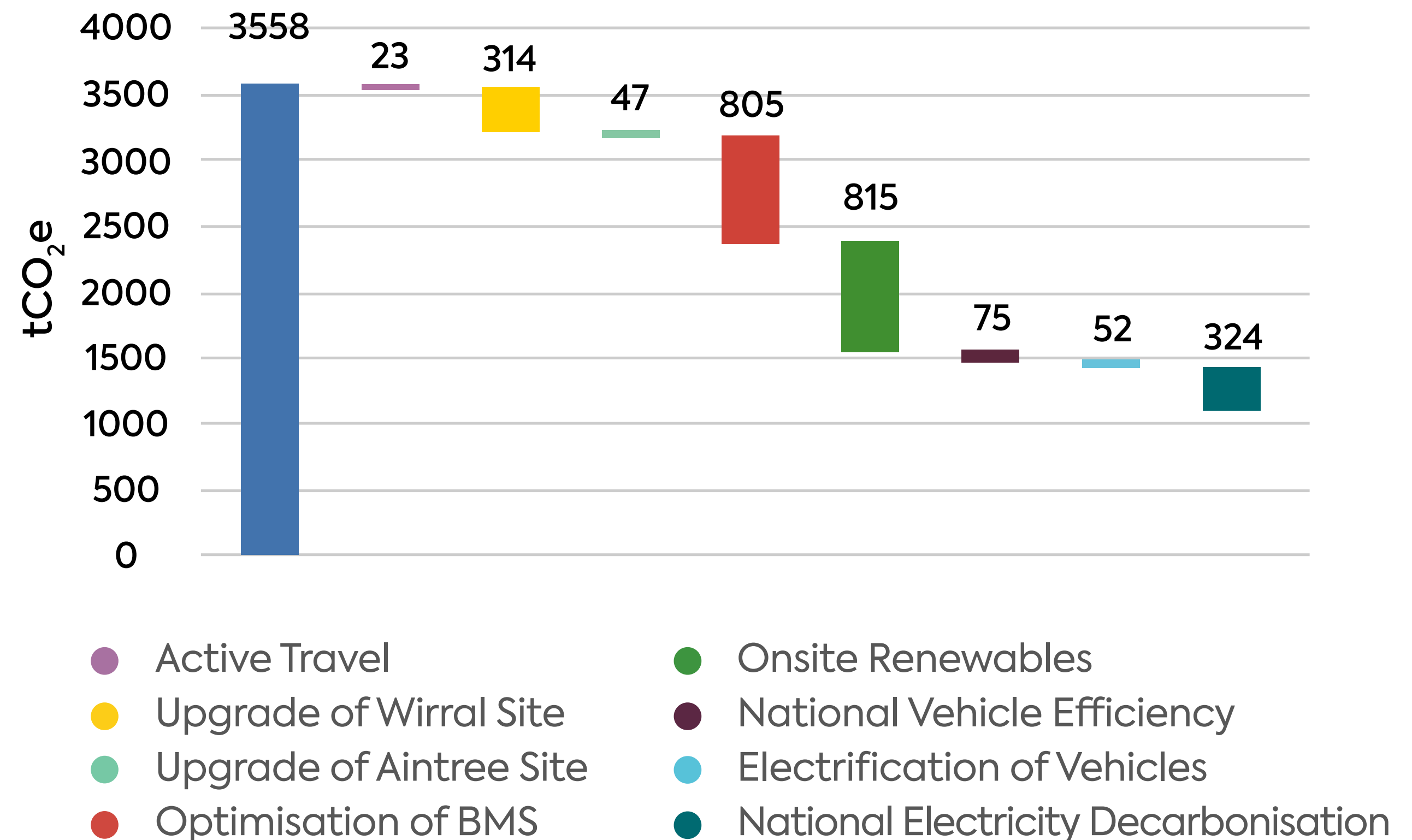


Our path to net zero

We already know lots of ways we can reduce our emissions based on current systems and technology. This could reduce our emissions by an estimated 69%. Achieving net zero, however, will also depend on the development of market innovations and national changes to new systems and technologies. For example, decarbonising the National Grid and converting the natural gas grid to hydrogen.

Our Green Plan 2022-2027 sets out the actions we can deliver, based on current technologies. As new innovations emerge, we will update this plan with actions to eliminate the remaining emissions.

We estimate that we can reduce directly controlled emissions by up to 69% (2,455 tonnes a year) in the following ways:



Market innovations and national/regional developments between now and 2040 will help us reduce the remaining 31% (1,103 tonnes a year) to achieve net zero.

Expected route/ journey times

For the first few years (2022-2025), our Green Plan focuses on some rapid changes and creating a culture of sustainability. From 2025, it focuses on longer-term interventions.

Long Term



2032

We will transition to zero emission vehicles



We will achieve an 80% reduction in directly controlled emissions



2039

We will achieve an 80% reduction in indirectly controlled emissions



2040

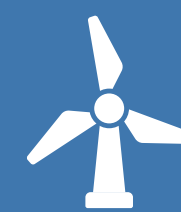
We will achieve net zero for directly controlled emissions



2045

We will achieve net zero for indirectly controlled emissions

Completed



2020

We began our journey towards purchasing 100% of our electricity from renewable sources

Near Future



2022

We will launch an engagement campaign and Green Travel Plan to encourage staff and volunteers to get involved in sustainable practices. We will highlight how tackling air pollution could lead to better cancer outcomes



We will explore sustainable, recyclable and reusable solutions for consumable items such as chemotherapy pump batteries, sharps and cleaning products



2025

We will have invested in redeveloping CCC-Wirral to include net zero features such as solar panelling

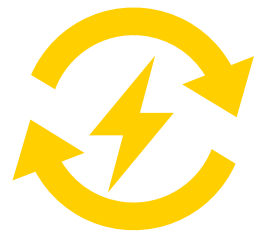
Our Action Plan

We have a detailed action plan for the next five years. The actions are grouped into 10 themes.



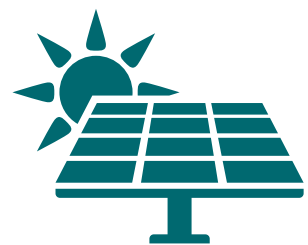
Adaptation

- Contingency plans for resilience to extreme weather events



Asset management & utilities

- Green/renewable energy
- Energy efficiency



Capital projects

- Redeveloping CCC-Wirral in a net zero way (e.g. solar panels & more efficient use of space)



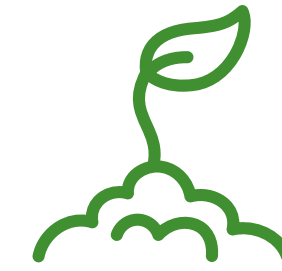
Carbon & greenhouse gases

- Greener business travel
- Reducing travel (e.g. hybrid/digital working)
- Joined-up procurement & sharing best practice via Health Procurement Liverpool



Corporate approach

- Commitment from Board
- Green criteria in procurement
- Partnership working
- Setting ambitious targets for sites/departments



Green space & biodiversity

- Enhanced green space & biodiversity on all sites, especially CCC-Wirral
- This will improve patient & staff wellbeing



Our people

- Harnessing existing staff enthusiasm
- New network of green advocates
- Raising awareness across the Trust



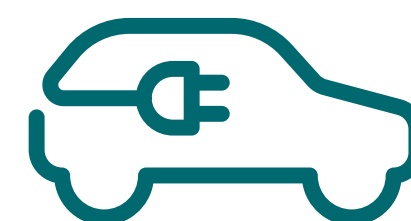
Sustainable care models

- Optimising sustainability wherever possible
- On-site manufacture of cancer treatments (e.g. chemotherapy)
- Virtual clinics where appropriate
- Reviewing prescribing processes



Sustainable use of resources

- Enhanced estates efficiency
- Recycle, re-use & circular economy
- Sustainable solutions for consumables



Travel & logistics

- Agile & hybrid working
- MS Teams / videoconferencing
- Green travel plan (including electric vehicle infrastructure & cycling)

Implementation & monitoring

Delivering

The commitments in this plan will be delivered by a Sustainability Action Group. This multi-disciplinary group will contain the nominated leads for each theme outlined in the plan. The group will be chaired by the Director of Strategy, who is our Board-level lead for net zero carbon.

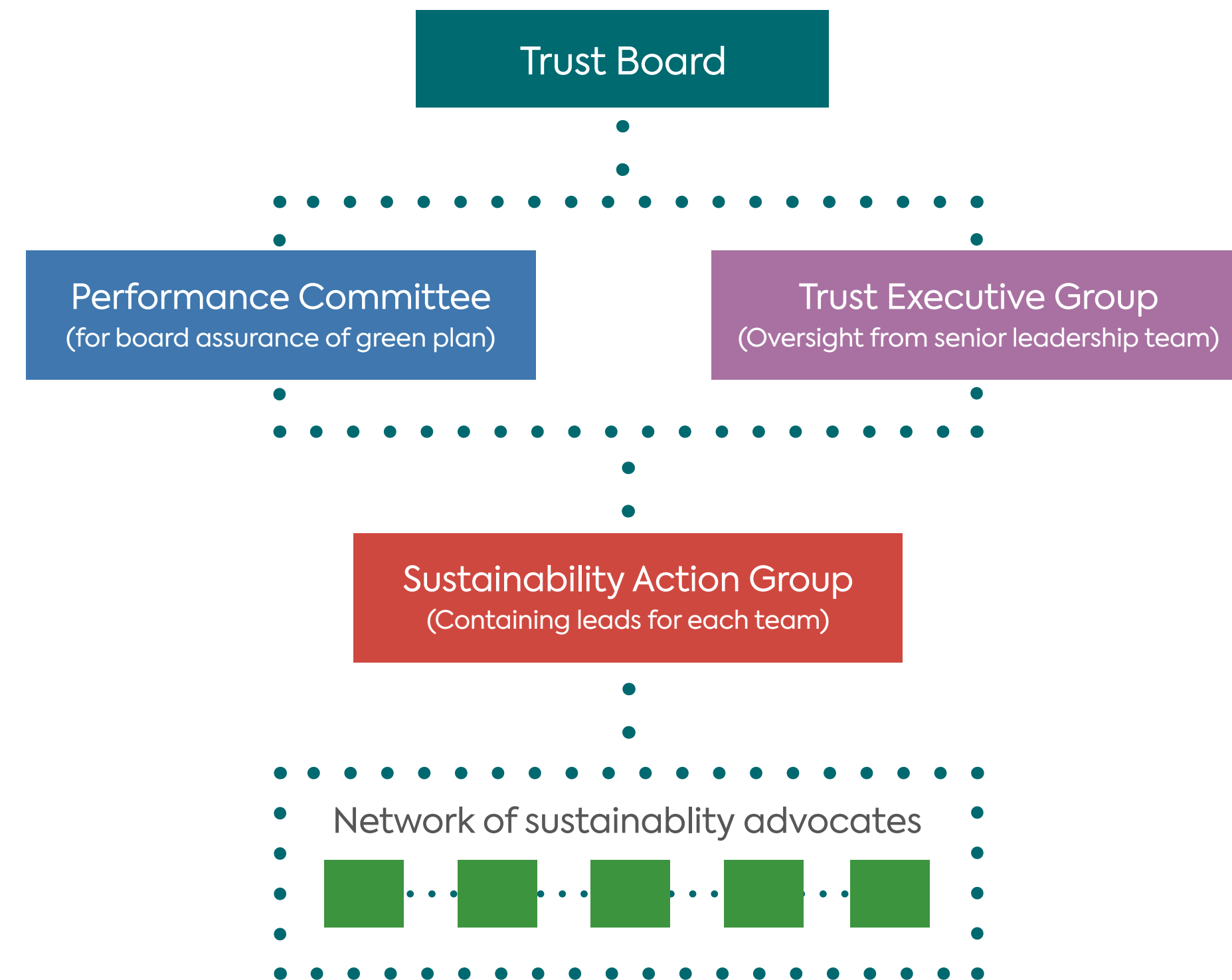
The Sustainability Action Group will report to our senior leadership team through the Trust Executive Group. The group will also provide assurance to the Trust Board on progress against delivery of the Green Plan through the Performance Committee, which is chaired by a Non-Executive Director.

Monitoring

We will develop metrics to ensure we can regularly monitor and report on our progress. These metrics could include:

- Quantity of CO₂ emitted per patient treated
- Total carbon emissions
- Proportion of actions which are on track, completed or outstanding

We will also continue to report our progress nationally as required by the Greener NHS programme.



Reporting

We will report progress through:

- Regular communications for staff and stakeholders
- Board reports
- Annual Report

Conclusion

Climate change is a real and growing health threat. Its consequences include increased risk of cancer. As a leading provider of cancer care, we are duty-bound to do all we can to reduce this threat by adopting greener, more sustainable ways of working.

The scale and pace of change required is challenging and success partly depends on innovations in other sectors

(e.g. energy and transport) but we are absolutely committed to making real and sustainable changes.

Our Green Plan explains how we intend to do this. Achieving it will need everyone's engagement but together we can make a real difference, benefiting the environment and the communities we serve.



Glossary

AI	Artificial intelligence
Air pollution	Contamination by any chemical, physical or biological agent that modifies air's natural characteristics
Agile & hybrid working	Working in a way that reduces the need to travel into a main site as much e.g. IT access off-site, virtual meetings, working from home some days
Building management system (BMS)	Computer-based system that manages functions like a building's temperature, lighting, fire alarms & lifts. It can help the building run more efficiently
Carbon dioxide equivalent emissions (CO ₂ e)	A measure used to compare emissions from various greenhouse gases based on their global warming potential
BREEAM	Building Research Establishment Environmental Assessment Method
Combined heat and power (CHP)	A highly-efficient process that captures and uses heat produced as a by-product of electricity generation. Producing heat and power together in this way can reduce carbon emissions by up to 30%
Directly controlled emissions	Emissions produced by sources that an organisation directly owns or controls itself. Also known as Scope 1 emissions
EPR	Electronic patient record

Fleet	Vehicles that an organisation owns or leases
Heat recovery	A process in which any warmth in stale air that is being mechanically removed (usually via a ventilation system) is extracted & recycled by feeding it back into the fresh air coming in
Indirectly controlled emissions	Emissions produced by sources that an organisation does not directly own or control itself
LED	Light-emitting diode, a more energy-efficient type of light bulb or tube
MS Teams	Microsoft Teams is technology that allows virtual meetings
Net zero	When the amount of greenhouse gases produced is the same as the amount of greenhouse gases absorbed this is zero (i.e. no net increase in carbon emissions)
Photovoltaic (PV)	Directly converting light into electricity via semi-conducting materials like silicon
Scope 1 emissions	Emissions produced by sources that an organisation directly owns or controls itself
Scope 2 emissions	Indirect emissions from the generation of purchased energy e.g. electricity, steam, heating & cooling
Scope 3 emissions	All other indirect emissions from producing and transporting goods and services, including the organisation's full supply chain

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WE ARE...



KIND



EMPOWERED



RESPONSIBLE



INCLUSIVE