

# Our Action 50 Green Plan Phase 1 2022-2024

Executive Plan



Climate Emergency



To find out more, visit: [www.cuh.nhs.uk](http://www.cuh.nhs.uk)

# Contents

04	Foreword
06	Part 1: Why we need a Green Plan
18	Part 2: Learning from experience and mapping a way forward
36	Part 3: Taking responsibility
44	Part 4: Taking Action
68	Next Steps
69	Glossary

Improving cycle & pedestrian access



Recycling exhausted batteries



Installing heat pump technology



Rolling out dry-mixed recycling



Compressing polystyrene to recycle



Repairing staff bicycles on site



# Foreword



**Roland Sinker**  
Chief Executive

The science is clear: we are living in the midst of a human-made climate emergency.

If the carbon emissions arising from what and how we consume are not halved within the next ten years, then today's rapidly unfolding environmental crisis can be expected to become globally catastrophic for health, wellbeing and prosperity within a generation. Governments, organisations, and communities are stepping up to the challenge of 'net-zero'. In the UK, the NHS is providing real and practical leadership – clearly setting out what the country's largest employer will be doing to meet the targets and how this will directly contribute to resolving the emergency.

Every NHS Trust has therefore been asked to draw up a new 'Green Plan' that will put them onto a rapid decarbonisation trajectory in line with these targets.

For Cambridge University Hospitals NHS Foundation Trust (CUH), it is important that this is clearly interlinked with the organisation's strategy and goals for partnership working. **Our vision is to demonstrate, through action, our leadership locally, regionally and nationally in the delivery of sustainable healthcare across the community.**

This is not new territory for CUH, we have been working to make our services more environmentally sustainable for many years. We know that working on the margins of business-as-usual is not sufficient if we are to play our role as a genuinely responsible consumer in avoiding climate chaos.

We have also learned that we cannot do this alone. The actions we take will have to be connected to those of our suppliers, contractors, campus colleagues, and public, academic, commercial and third sector partners. We know that the relationships already forged with other healthcare system partners, industry, local councils, and universities will need to be further strengthened and developed to allow us to deliver fully against our Green Plan.

High-carbon and high-waste has been woven into all our day-to-day lives over a very long period of time. Changing the fabric requires, not only, concerted commitment within the Trust, but also collaboration and cooperation across supply chains and the wider community we serve.

We have to work out how to reframe all our decisions so that they take full account of their environmental impacts both today and tomorrow, and both here and elsewhere.

Our **Action 50 Green Plan** has been specifically designed to do just this. And to achieve these actions, and our exceptionally challenging targets, we need the help and support of each and every member of the CUH family.



# Introduction



## Carin Charlton

Net Zero Lead (Director of Capital, Estates & Facilities Management)

As the owner and operator of one of the largest acute teaching hospital campuses in the country, CUH will need to play a significant part in delivering against the NHS Net-Zero commitment. This new Phase 1 **Action 50 Green Plan** lays out how we will deliver the first phase of a ten-year programme. It has five guiding principles:

1. provide all staff with a practical understanding of their environmental impacts and how to reduce them.
2. always work out whether Trust policy or process changes will increase or reduce its carbon footprint.
3. take sufficient deliberate actions to meet our carbon emission targets by design.
4. recognise that ill-health prevention for all is the best way to lower a hospital's carbon emissions.
5. use our long-term embedded position in the community to extend the influence of our environmental actions.

These principles will build on the Trust's learning and achievement from a strong track record of infrastructure and behavioural-based carbon reduction and environmental sustainability work.

However, we must also recognise that the approach taken to date is falling significantly short of meeting the level and rate of decarbonisation now required. Carbon emissions are so deeply embedded within the processes of what and how we consume, that resistance to anything but marginal change is built into business-as-usual.

From the results of a recent survey, there is real interest amongst staff for us all to work together to do more. The majority view is that the Trust has an obligation to take urgent action with regard to environmental sustainability, and that there is a strong enthusiasm for learning and support to help us reach our targets.

We must therefore reframe our consumption with an approach aligned to the needs of accelerated decarbonisation. The approach needs to put the objective of net-zero at the heart of our decisions – from building design to service delivery. And, this must be done without compromising patient care, hospital capacity and flow, budget control, and staff wellbeing.

Our five guiding principles will help in transitioning **from** – today's fossil-fuelled conveyor belt of take-make-use-throwaway consumption (often referred to as the 'linear economy'), **to** – tomorrow's renewably fuelled self-sustaining take once then make-use-reuse-repair-recycle mode of consumption (often referred to as the 'circular economy').

This Phase 1 of our Green Plan (Action 50) aims to deliver:

- comprehensive engagement across the organisation;
- a 10% demonstrable reduction in carbon emissions by design by the end of 2024;
- the springboard to cut emissions by 50% by 2032.

As a provider of acute healthcare, CUH will always be an intense consumer. However, to do this responsibly in the 2020s means we must provide a new frame for our consumption choices – one that actively secures our role, and supports our patients and partners roles, in urgently diffusing the climate crisis we are all a part of.

Our transition into a circular economy way of working will not undermine the quality of the Trust's safe, kind and excellent healthcare. Rather, it responsibly redefines what productivity means in a restorative and resilient manner through a reframing approach to what and how we consume across three distinct elements:

1. Life Cycle Assessment: putting the spotlight on the carbon emissions from everything that CUH consumes from 'cradle-to-grave' – whether this be materials, miles, medicines, machines, metered energy or one of the multitude of items that CUH purchases, uses and then disposes of.
2. Devolving responsibility: with the variety in the services that CUH provides, it is rare for one-size-fits-all solutions to work well in practice.
3. Connecting budgets: the transition to net-zero/zero-waste will require investment in new future-proofed ways of working and alternative infrastructure.

This approach has evolved through our environmental sustainability work to date and has been positively raised and discussed in both patient and staff focus groups. Reframing our approach in this way establishes a clear set of strategic commitments to guide all decision making. Decisions that will progressively shift the Trust onto a net-zero/zero-waste trajectory.

CUH will always put its patients first and, as a consequence, it will always be an intense consumer. However, to do this responsibly in the 2020s means we must provide a new frame for our consumption choices – one that actively secures our role, and supports our patients and partners roles, in urgently diffusing the climate crisis we are all a part of.



**“ It comes down to a simple premise – we must move from high-carbon/high-waste to net-zero/zero-waste. ”**

# Part 1:

## Why we need a Green Plan

**Climate Emergency**



# What is a Green Plan and what does it need to achieve?

The purpose of this plan is to lay out what Cambridge University Hospitals NHS Foundation Trust (CUH) will be doing to tackle the ongoing and rapidly escalating climate crisis. This is the first phase (2022-24) of a three-phase programme covering the period 2022-2030.

By 2032, and in line with the rest of the NHS, CUH should have almost halved its baseline 2019/20 carbon footprint on the way to achieving 'net-zero' by 2045. Over this period it will also have built an important level of resilience to the risks and more immediate impacts of climate change.

Effectively tackling the risks and realities of climate change is the dominant global challenge of the 21st century. The difficulty of doing this cannot be understated. However, it does bring many co-benefits which make the process of 'decarbonisation' not only a necessary goal but also a positive one. From the healthcare perspective, these include:

- hospital facilities that are less costly to run;
- improved activity rates and reduced obesity risk;
- less anxiety over the future;
- fewer and shorter hospital admissions;
- a real sense we are "fit for the future", and;
- being an organisation anchored in the community and health system that is managing a positive response to the climate emergency.

The path to net-zero carbon is not one an organisation can find or follow on its own. The Trust's carbon footprint is an outcome of what and how it consumes – from the sourcing and purchasing of goods and services, through to their use and disposal of what is leftover. Redefining how this chain of consumption functions, to remove carbon emissions, is as dependent upon the co-operation of our partners as it is with the Trust's own commitment. All 'net-zero' relationships are at least two-way, with the low-carbon choices made by one consumption chain partner (whether positive or negative) impacting the options of others.

CUH's carbon footprint, like most of the NHS, is dominated by emissions already embedded by the supply chain through the extraction and refining of raw materials, manufacturing and distribution. These direct supply chain product emissions become the Trust's and our patients' indirect emissions. As the Trust consumes these products, we must take some of the responsibility for reducing their environmental impacts. This shared responsibility lies at the heart of determining how human-made carbon emissions can be quickly driven from the entire consumption chain.

This first 3-year phase (2022-24) is crucial. The energy and commitment applied to delivering a minimum 10% reduction and establishing a real-world springboard to net-zero will determine

**“The Occupational Therapy department has created an enthusiastic working party aiming to reduce waste and to contribute to the Trust's Zero Waste Plan. As a group, we proactively identified ways that we can reduce waste and we will continue to identify many more. We are challenging every member of the occupational therapy department to make a sustainable waste reduction pledge on our up and coming 'Waste Challenging Wednesday'. This is an important issue for us all and we can all make a difference, no matter how big or small. We are excited to see what differences we can make to tackle climate change.”**

Louise Bonner Occupational Therapy Deputy Manager



**“Working with system partners, we are delivering a lower carbon footprint. Medicines are thought to account for 25% of NHS emissions, and inhalers used to treat common respiratory conditions are responsible for a good part of this. In appropriate patients, switching from one type of inhaler (metered dose inhaler - carbon at 500 g/dose) to a different type (dry powder inhaler at 20 g/dose) can deliver a massive reduction in carbon footprint. This has been recognised by NICE, and the local CCG asthma guidelines have been adjusted to reflect this. As a father, I hope this change will contribute to a healthier world for my children.”**

Dr. Martin Knolle Consultant and Clinical Lead for Respiratory Medicine

whether the subsequent stages and longer-term net-zero objectives are met.

This Green Plan reshapes CUH's long-term commitment to carbon reduction, pollution control and natural resource conservation (as set out in its previous Sustainable Development Management Plan (2013-2020) to match that required by today's climate emergency and the NHS's net-zero targets.

The importance of meeting these targets and rapidly de-escalating the emergency are such that carbon reduction is the Plan's driving priority. However, because carbon emissions are a part of almost

everything we consume and how we consume it, this priority is enmeshed with a whole range of other environmental benefits, especially those relating to waste and its direct relationship with pollution and the conservation of natural resources.

The NHS has mapped out a carbon emissions descent plan for the whole of the service – dividing the total footprint up into segments according to their source. The purpose of our Green Plan is to lay out exactly how CUH will be delivering its contribution to rapidly shrinking each segment against the real-world terrain of running a major acute teaching hospital.

**Making every kilowatt count with integrated power electronics and battery storage**



**High efficiency LED street lighting**



**Real-time bus information**

Departures from		
Service	Destination	
1	Cherry Hinton	
1	Arbury	
2	Camb North Station	
1	Cherry Hinton	
A	Marley Road	
U	Eddington	

**Improving cycle & pedestrian access**



**Photovoltaic solar panels on the roof**



**Food waste biodigesters**





# Rationale – the ‘why’, ‘when’ and ‘what’ behind NHS green planning

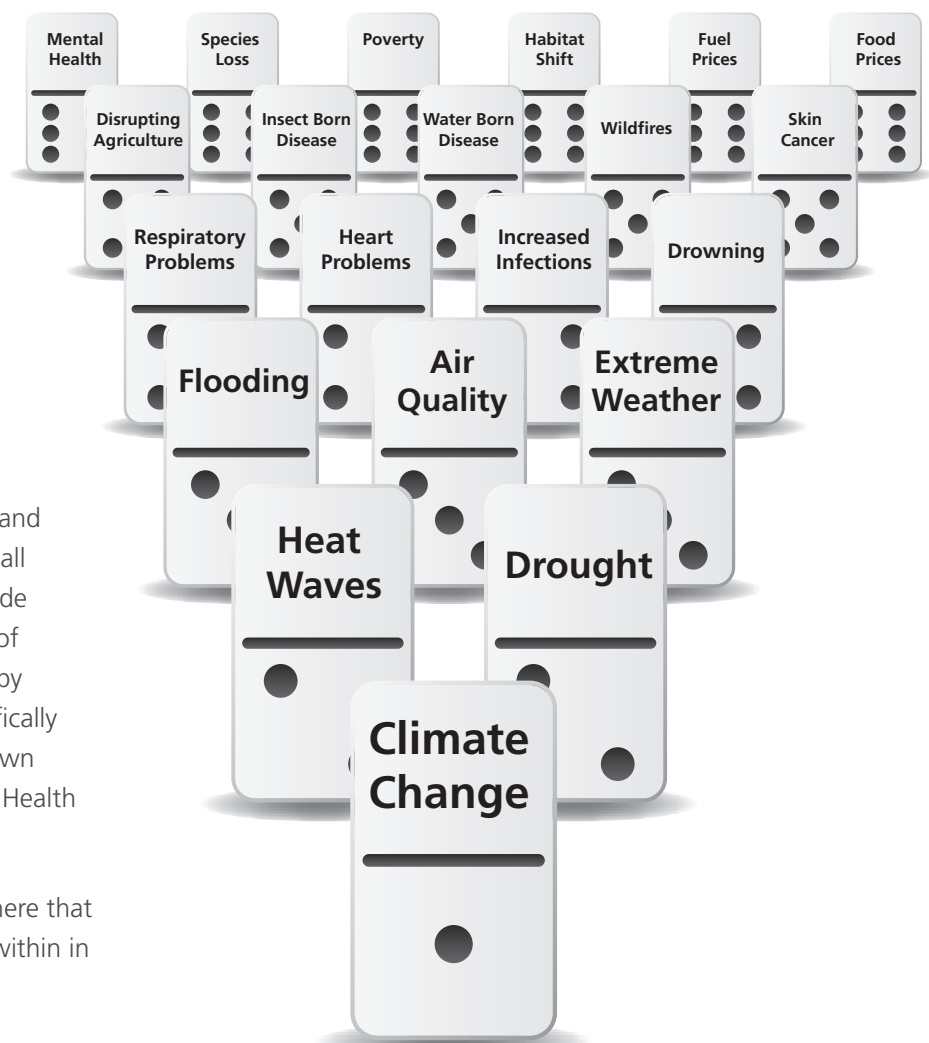
## Why? = extreme risk

As a health service, the NHS has a priority stake in reducing the grave impacts of human-made climate change on both human health (heatstroke, disease, flooding, fire, malnutrition) and the infrastructure needed to provide healthcare. As a significant contributor to these impacts the stakes are raised further. Human-made climate change is primarily caused by ‘forcing’ the natural greenhouse effect beyond its current balance through the release of huge quantities of additional greenhouse gases (predominantly carbon dioxide from the burning of fossil fuels) and lowering the capacity of natural ‘sinks’ to absorb carbon (e.g. forests). The urgency with which we must halt the increase in these emissions (referred to in shorthand as ‘carbon reduction’ on route to ‘net-zero carbon’) has led to the UK Government declaring a “climate emergency”. The causes and impacts of a rapidly warming climate are often strongly associated with the more conventional environmental concerns of pollution, habitat destruction and the loss of natural resources. Even more importantly, if the growing concentration of carbon emissions in the atmosphere is not halved in the next 10 years and set to ‘net-zero’ in the next 20, all other issues relating to man-made pollution and over-exploitation of natural resources will be minor by comparison. The NHS has specifically recognised these targets in its own Delivering a ‘Net-zero’ National Health Service plan.

Science tells us that an atmosphere that has more heat energy trapped within in

it becomes a more active one and the longer-term average atmospheric conditions we refer to as ‘climate’ begin to change. This leads to the increasingly unstable and extreme short-term conditions that we are now beginning to experience as our more day-to-day ‘weather’. Climate has changed before, but the current change is different – the increase in the concentration of greenhouse gases is human-made. The change is also happening very quickly. This is creating a domino-effect of impacts – each of which puts pressure on how we live and the wider ecology of life that supports us. If we do not act very quickly (within the next 25 year) to stop burning the fossil fuels, that are largely

**Figure 1: The climate change ‘domino effect’**



responsible for emitting carbon, and destroying the natural systems (such as forests), that also hold a large amount of carbon and prevent it entering the atmosphere, then climate chaos will rapidly follow. This chaos will make our current standards of health and wellbeing unrecognisable and potentially push natural systems into ‘tipping points’ when the dominoes topple. The tipping points will escalate carbon emissions beyond our ability to control. We genuinely are in the midst of a ‘climate emergency’.

Hospitals are used to prioritising the treatment and care they provide against the risks presented to human health. The COVID-19 crisis has illustrated this to an extreme extent. There is little doubt that if the risk that COVID-19 presented to people’s health, our communities and economy had been fully understood in advance, then an emergency map to head off the tragic, destructive and costly outcomes we have since experienced would have been drawn up and followed to the letter.

We know that if human-made global warming exceeds 1.5°C then the outcomes will far outstrip those of COVID-19. The risk of this happening, as measured against our current ‘business-as-usual’ in terms of carbon emissions and resilience to the impacts of climate change today, would be defined as:

## Likelihood: certain, Impact: catastrophic

The advantage we have over the COVID-19 crisis is that we understand this risk in advance, we know what we need to do to avert it and when this needs to be done by. The other crucial parallel with COVID-19 is that we all have a role to play in tackling the problem. We all have responsibilities from individuals, to families, communities, organisations and government. At CUH we need to understand and deliver against our responsibilities. Our Green Plan is a map for doing so as well as supporting everyone else’s responsibilities so that our health, wellbeing and prosperity are sustained during, and out of the other side of, this climate crisis.

## When? = right away

‘Net-zero’ for CUH, or any other organisation, means that through delivering our services we will not add to the amount of greenhouse gases in the atmosphere. To achieve this, we will need to dramatically reduce the Trust’s carbon emissions as much as possible, and find ways to balance out any remaining residual emissions by other less direct means.

The plan for Delivering a ‘Net-zero’ National Health Service (NHSE/I, October 2020) lays out what high level targets NHS organisations need to

**Figure 2: The 2021 risk rating of exceeding a 1.5oC in man-made global warming: certain and catastrophic**

		Impact →				
		Negligible	Minor	Moderate	Major	Catastrophic
Likelihood ↑	Almost Certain	Moderate	High	Extreme	Extreme	Extreme
	Likely	Moderate	High	High	Extreme	Extreme
	Possible	Low	Moderate	High	High	Extreme
	Unlikely	Low	Moderate	Moderate	High	High
	Rare	Low	Low	Low	Moderate	Moderate

be planning for – the ‘hotspots’ for emissions, and some actions to tackle them. In summary, what we have to do at CUH is:

1. halve our carbon emissions before 2032 (from a 2019 baseline) and reduce these down to ‘net-zero’ by 2045. This will mean we play our part in doing everything we can to hold global warming to no more than 1.5°C.
2. protect our services from the risks of higher summertime temperatures and surface water flooding that are already in play from a 1.0-1.5°C increase in average global temperatures.

Reducing carbon emissions at the rate and volume required whilst ensuring that the Trust continues to deliver its services to the highest standards, is immensely challenging (re. Figure 3). We must maintain business-as-usual in terms of continuously improving healthcare delivery whilst transforming in terms of:

- how our premises are heated, cooled and powered,
- how we travel,
- how some aspects of patient pathways are provided,

- how we choose what goods, materials and equipment to purchase, and
- how we manage our waste.

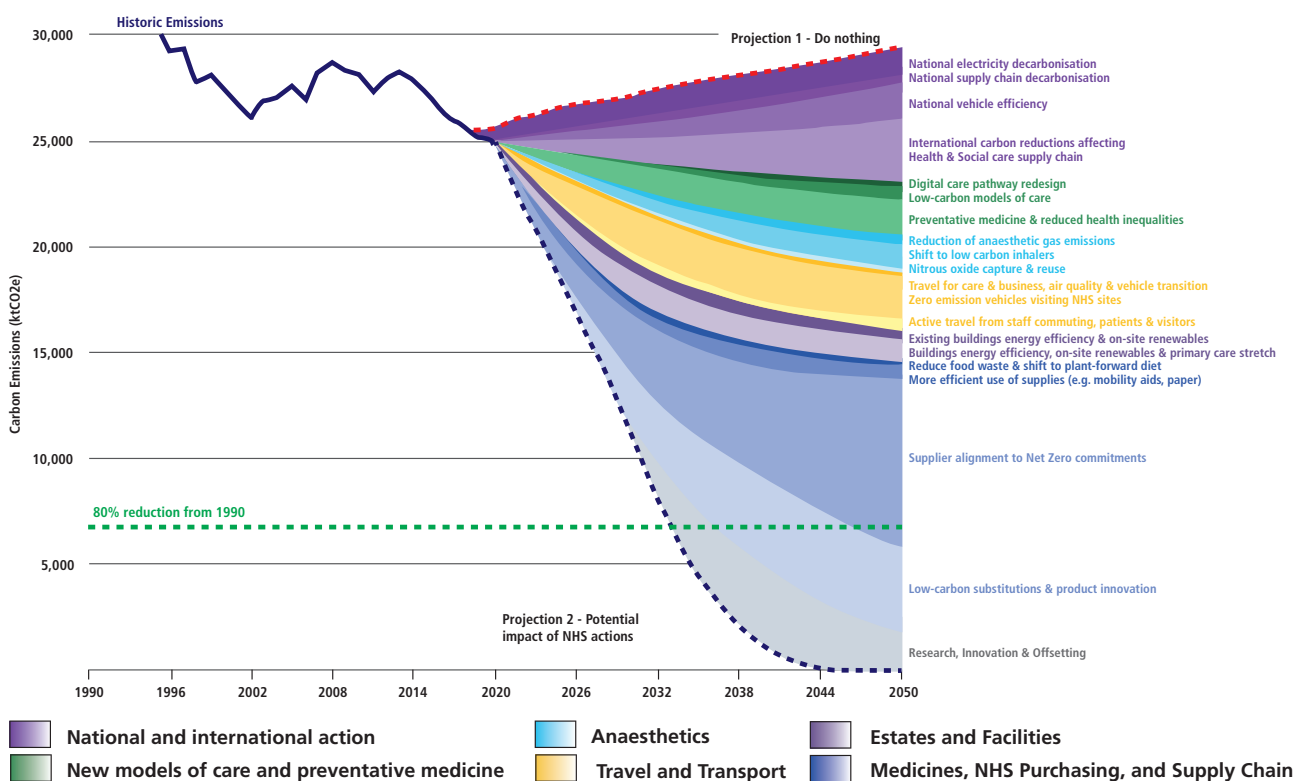
Alongside these reductions in emissions, through direct and indirect control and influence, there are opportunities to take out the inevitable residual emissions through helping others avoid emissions, holding (sequestering) carbon in materials and working in partnership on ill-health prevention (as a root cause of CUH’s emissions).

The NHS Net-zero Plan defines the ‘scope’ for these actions by breaking them down into one of three (or four) types of emissions. It also provides service-wide values for the elements that make up each type.

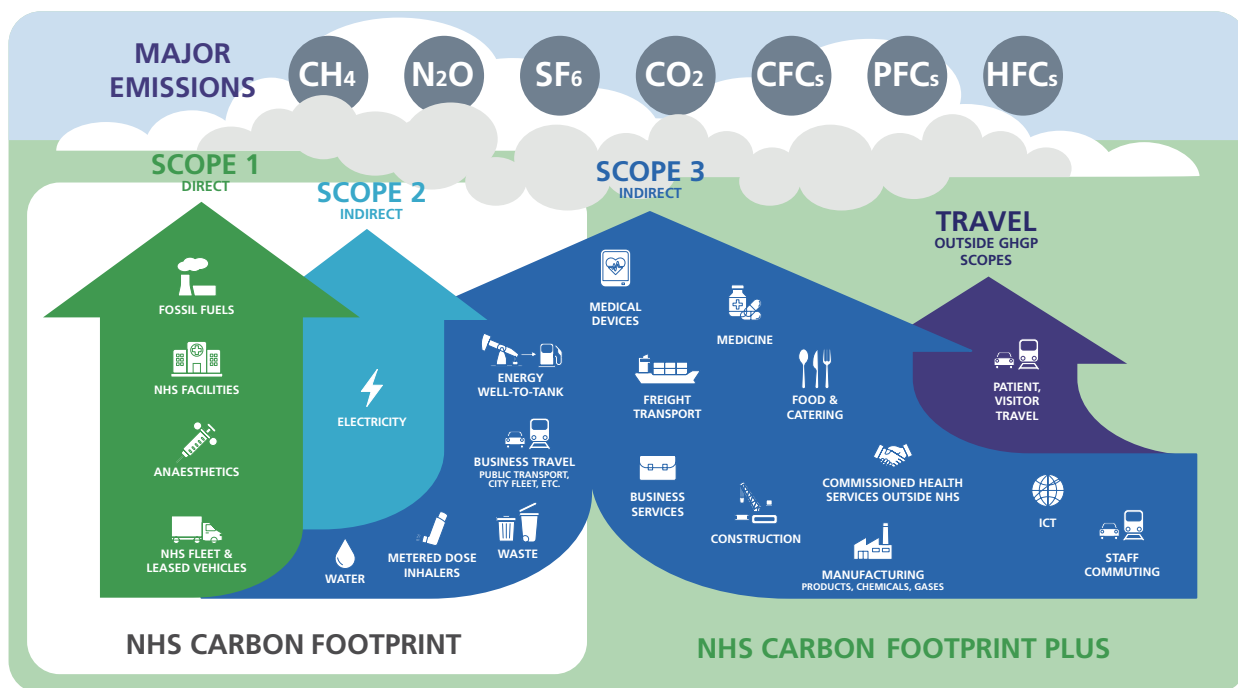
## What? = net-zero carbon footprints

Following international standards, the carbon emissions that make up the Trust’s carbon ‘footprint’ are broken down into three ‘scopes’.

**Figure 3: The current trajectory of NHS carbon emissions and the required future contributions for ‘net zero’**







Scope 1 emissions are those directly released into the atmosphere from CUH's immediate activities (e.g. from on-site gas boilers, or from the petrol engines of Trust vehicles).

Scope 2 emissions are those arising from the generation and distribution of national grid electricity – allocated to the Trust according to how many kilowatt hours it is metered as having consumed.

Scope 3 emissions are those that have been released during the extraction, refinement, manufacture, packing and distribution of any item that CUH purchases and subsequently consumes. The carbon emissions associated with water, waste disposal and staff commuting are also included in this scope.

There is another set of emissions that fall outside of this formally defined footprint. These are the emissions that, although allocated to others, the Trust can take significant action to help them avoid. These are sometimes referred to as an organisation's Scope 4, or 'avoided', emissions. These would include those saved by reuse, repair and recycling that would otherwise return to the supply chain when providing new items from scratch. This group also importantly covers those emissions that would be allocated to the personal footprints of our patients travelling to and from hospital – here the Trust's use of telemedicine can help patients avoid the need to travel.

**Figure 4: The 'scoping' of NHS carbon emissions**

Thinking of emissions in this way is helpful: locating their sources is the first step in starting to identify how they can be set onto a net-zero trajectory. The NHS has broken these down further into the key components relevant to running a national health service and then collated them into two groups:

- the first is referred to as the NHS Carbon Footprint and is open to direct intervention from within NHS organisations in a rapid journey towards net-zero for this sub-set by 2040
- the second group is only really open to indirect actions of influence in endeavours to achieve full net-zero for all emissions by 2045 and is referred to as the NHS Carbon Footprint Plus (re. Figure 4).

**Net-zero' milestones (2019 baseline):**

<b>47%</b>	<b>73%</b>	<b>Net-zero</b>	<b>Net-zero</b>
reduction	reduction	NHS	NHS
in NHS	in NHS	Carbon	Carbon
Carbon	Carbon	Footprint	Footprint
Footprint	Footprint	by	Plus by
by	Plus by		
<b>2028-32</b>	<b>2035-37</b>	<b>2040</b>	<b>2045</b>

## Where are the main elements of carbon reduction to be found?

This high level scoping of emissions has also been relatively quantified by type, and refined further to highlight emission ‘hotspots’ for particular types of NHS service provision – e.g. acute hospitals.

From both this scoping of emission types (in terms of how directly the Trust can intervene to reduce them) and quantifying the material NHS sources, we have drawn up a list of measures under six headings through which a reduction of emissions to net-zero can be achieved (re. Table. 1).

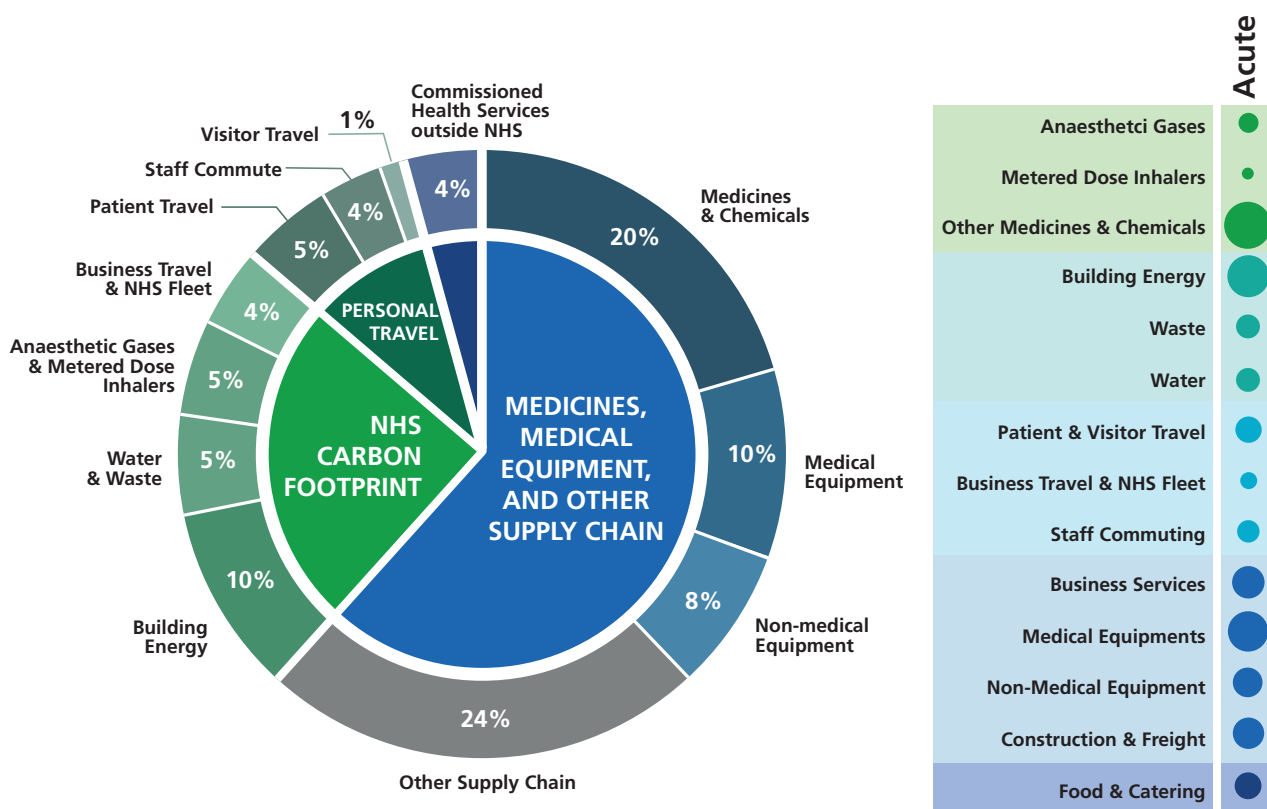
As well as scoping carbon emissions against how directly the Trust can secure reductions, and breaking them down against core categories such as

building services, support services, clinical delivery, transport and procurement, it is essential to have a baseline against which to measure progress.

Ultimately ‘net-zero’ will eradicate whatever this starting value is, but, with a 25-year programme to get there, measuring progress against intermediate targets will be crucial.

Conventionally in the UK the baseline date has been set at 1990 and this has also been applied to the NHS ‘net-zero’ plan. The Greener NHS analytics team have subsequently run a science-based recalculation to re-baseline the NHS net-zero trajectory targets with a 2019 point of departure.

**Figure 5: What the NHS consumes and how this relates to the percentage of carbon emissions from each main item.**



**Table 1: Measures to reduce, avoid, sequester or off-set/in-set carbon emissions**

▼ = activities with options to directly or indirectly reduce carbon emissions

▲ = activities to avoid, capture or off-set carbon emissions

1. Where we can **directly reduce** carbon emissions:
  - ▼ Burning **natural gas** for heating (and incineration).
  - ▼ Burning **petrol/diesel** in vehicles to get to and from site (commuting, patient/visitor access, and business miles).
  - ▼ Burning **diesel oil** as backup for heating (boilers) and electricity (generators).
  - ▼ Releasing **medicinal gases** (anaesthetics, propellants).
  - ▼ **Refrigerant** losses from cooling systems/units.
2. Where we can **less directly reduce** carbon emissions:
  - ▼ Consumption and sourcing of national **grid electricity**.
  - ▼ Consumption of **mains water** (and waste water services)
3. Where we can **indirectly reduce** carbon emissions:
  - ▼ Purchase of clinical and non-clinical **consumables**.
  - ▼ Purchase of clinical and non-clinical **equipment and machines**.
  - ▼ Purchase of **food**.
  - ▼ Purchase of **pharmaceuticals**.
4. Where we can avoid carbon emissions:
  - ▲ Prevent waste: reuse, repair, recycling.
  - ▲ Reduce the need for some patients to travel to site.
  - ▲ Use systems thinking to connect any/all of these measures across and between care pathways to foster aggregation and avoid duplication.
5. Where we can remove and hold CO<sub>2</sub>e on-site:
  - ▲ New build and major refurbishment **construction materials**.
  - ▲ On-site **tree planting**.
6. Where we can **support others to emit less CO<sub>2</sub>e** off-site:
  - ▲ In-setting: directly supporting **ill-health prevention** within the CUH catchment (prevention is no-/low-carbon to the hospital).
  - ▲ Off-setting: Stop-gap **investment in off-site projects** outside of healthcare: e.g. tree planting, habitat restoration, renewables, community projects.

“ *The current climate crisis is going to affect us all, including our patients, probably in ways we haven't really appreciated yet. We all have an important role to play in trying to prevent it getting worse, no matter how small we feel our efforts are, it all counts. I believe that with everyone working together, CUH can make a difference!* ”

Dr. Stephen Farrell Consultant Paediatric Surgeon



## What makes this Green Plan different from what has gone before?

Efforts to cut carbon emissions have figured strongly in CUH's Think Green approach to making environmental sustainability a part of its healthcare provision. The Trust's Sustainable Development Management Plan 2013-20 (SDMP) provided the strategic delivery framework and has subsequently achieved a great deal (as will be illustrated later). However, despite taking actions that have removed in the region of 4,000 t CO<sub>2</sub>e, the more material actions have been largely limited to upgrades in physical infrastructure to make the estate run more efficiently in terms of utility use, transport and waste disposal – reducing unnecessary losses and wastage. These permanent savings have been assembled against a backdrop of growing demand for CUH's services and a burgeoning of energy-hungry technology and single-use consumption. In terms of directly secured progress in reducing the Trust's carbon footprint we have, at best, been running to standstill. Where the recent record shows an annual fall in Scope 1 and 2 emissions, the majority of this is down to the 'greening' of national grid electricity – the emissions factor per kilowatt hour consumed falling by approximately half as more wind and solar farms have come online and fossil-fuelled power generation has switched away from coal.

The new NHS 'Net-zero' plan (October 2020) has taken ground-breaking strides in refocusing attention across all of its organisations as to: why urgent and wholesale carbon reductions are a necessity; when it is they need to be delivered by, and an essential description of what needs to be done. The difference this makes for the Trust's new Green Plan, is the priority focus on carbon emissions with compelling drive and action across carefully identified delivery areas against a very challenging timeline. This committed focus is a prerequisite to the rapid removal of 10% of these emissions by 2024 and subsequent medium-term removal of 50% by 2032 (re. Figure 6).

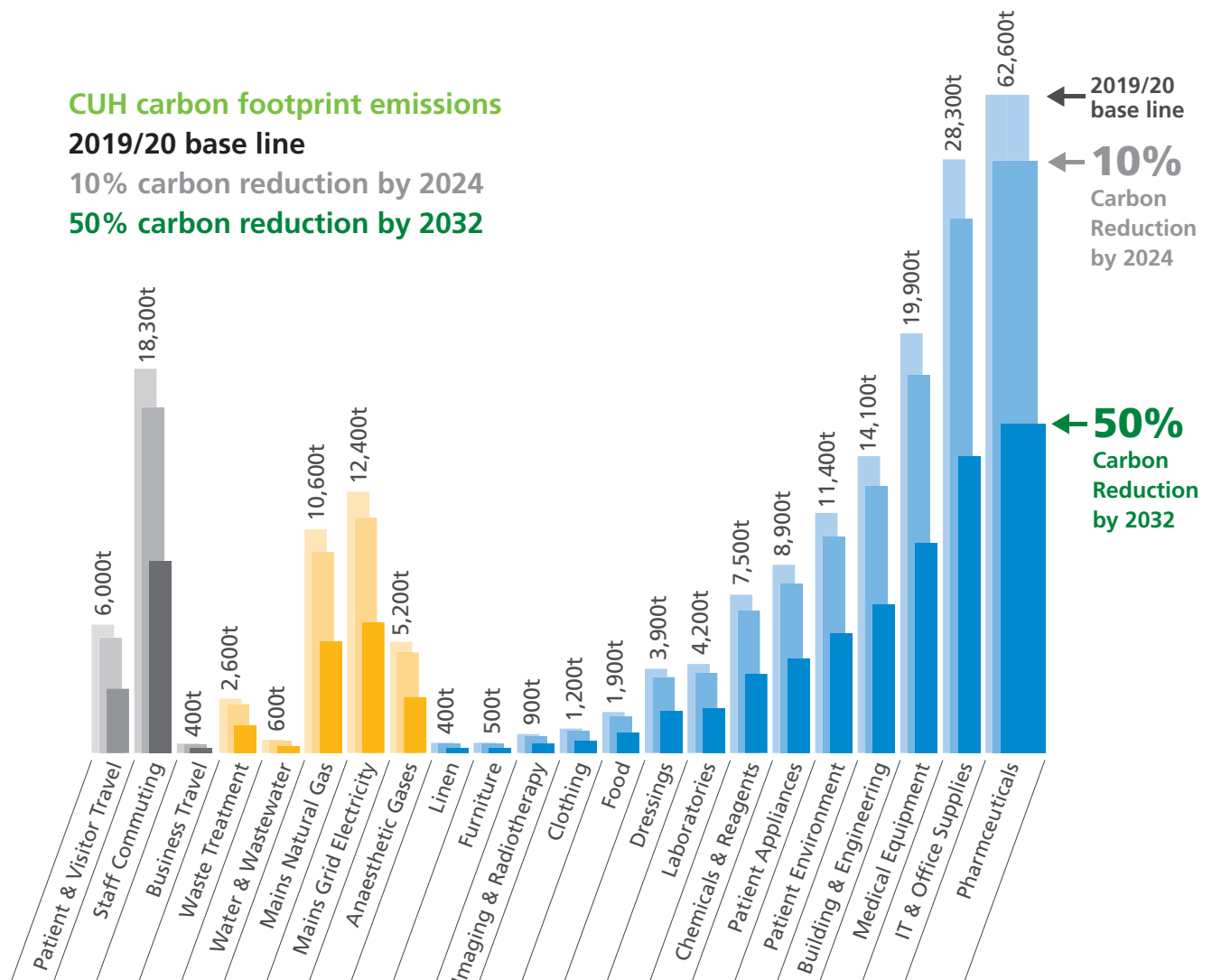
The crucial point of note for this Green Plan, however, is that the proposed NHS net-zero actions are, though more focused, not very different from those set out and attempted previously. The implication is that just knowing what we need to do to achieve our carbon targets is not enough. Despite some concerted effort, it has proved very difficult to overcome the resistance of 'business- as-usual'.

**“ I am a member of the Paediatric Critical Care Society (PCCS) Green Group. This is a group of professionals that look after critically ill children in the UK and want to act in making their practice more sustainable, not only in order to be able to offer excellent care but to leave a better and healthier planet to the new generations. We are coordinating with many of the most important trusts in the country to train clinicians in carbon footprint reduction, designing projects to pilot in different Paediatric Intensive Care Units that can be then applied to other units, and discussing what changes we can implement in our day-to-day practice to reduce the impact of our work on the planet.**

**“This new Green Plan will be an opportunity for the PCCS Green Group to engage with CUH and work to make a difference in the future of the planet we leave to our children. CUH now has the opportunity to be an example to the country and the world as a green hospital”**

Juan Ramon Valle Ortiz Consultant in Paediatric Intensive Care

Figure 6: CUH's carbon footprint, from 'as is' (2022) to 'to be' in 2024 and 2032



“ Currently within my role I try to improve sustainability directly within my control. I am currently working hard with colleagues to reduce consumption and emissions. I feel sustainability is so important to me as it's something that extends to my personal life, therefore it's something that I feel is generally, in life, an important area of focus. In terms of why I feel it's so important for our trust, we are a very large site and have a huge impact on the environment. We have a duty as a trust to ensure our impacts on the environment, which in turn can impact our patients (locally) are kept at a minimum and to do everything we can to be as green as possible and lead by example. ”

Megan Pedersen Outpatients Office Manager (Patient Experience Team)

## Our Green Planning Survey – what staff told us



**>730**  
responses

In February 2022, we carried out a comprehensive survey to gather the 'green planning' views and opinions of our staff. The response rate was very strong with the majority of staff agreeing that:



**CUH has an obligation to take urgent action with regard to environmental sustainability.**



**They wanted to do more and learn how (especially for those actions that seem hard to achieve).**



**Organisational actions should be explicit and clearly set within management objectives.**



**What we are doing and achieving needs to be more visible.**

### Top 4 initiatives that align with the NHS drive for net-zero were:



**securing patient equipment returns for reuse,**



**working on the sustainability of food,**



**only printing with 100% recycled paper, and**



**moving to reusable surgical gowns.**



**>600**  
free text  
comment

**The dominant themes from all the comments submitted pointed towards the importance of:**



**a combination of:** more support, clear information, and guidance to deliver with consistency across all aspects of running our hospitals.



**effective communications** whilst engaging those championing action on the ground.



**>200**  
staff want to join our Think  
Green champions network

### Other recurring feedback, included:

- Staff are looking for the Trust to respond urgently with strong leadership.
- As a large organisation, the opportunity to exert influence in its prioritised Green Plan actions is significant.
- Internal management support is essential as actions need to include leadership to ensure they be sustained, organised and resourced.
- A strong theme around waste reduction – single-use items, packaging and plastics.
- The importance of further upgrades to our transport infrastructure for sustainable travel – particularly for staff travelling on public networks or bicycles.



**Part 2:**

**Learning from  
experience and  
mapping a way  
forward**

**Climate Emergency**



Understanding the resistance within business-as-usual and taking the necessary steps to rapidly change it, in terms of what and how we consume, is the most pressing objective of this first phase Green Plan (2022-24) for CUH. This resistance will be far from unique to the Trust and therefore our experience, and how we propose to respond, will be very important to share with other NHS Trusts, regional and national systems, and our range of consumption chain partners. The resistance to cutting operational emissions comes from two distinct but connected issues. The first is in how emissions relate to global heating, and how they have been regarded historically. The second is tied to how the release of carbon emissions is fragmented across the entire consumption chain – from extraction, to refining, manufacture, packaging and distribution, through use itself and finally in disposal.

## The trouble with carbon

The climate crisis runs deep into almost every aspect of modern life because it is an outcome of almost everything we consume and how we consume. From the time when Addenbrooke's first opened its doors in 1766 the problem has been growing as the immense value and intensity of fossil fuels has been increasingly exploited to raise progress, prosperity and the quality of life.

Because rising human-made carbon emissions are a product of material consumption, understanding how to get to net-zero hinges upon our understanding of what we consume, and the costs involved in the process.

When you look at the consumption in detail, and revisit it again and again in an effort to reduce emissions, the difficulties and resistance to finding a workable net-zero pathway become clear:

- carbon emissions are invisible – when you start a petrol car, fire up a gas boiler or allow your air-conditioning unit to leak you are releasing greenhouse gases into the atmosphere but, because you typically cannot see the gases, the release goes largely unregistered
- carbon emissions accumulate in the atmosphere and stay there for a long time (50-200 years for carbon dioxide). This is really important because it means that warming does not start to drop when we reduce carbon emissions, and that any contribution today will add to the problem for a long time
- most carbon emissions come from the burning of fossil fuels for the energy that our modern world is still almost entirely dependent upon – this means we cannot stop burning fossil fuels unless we find an alternative way of generating this energy and ways to use much less of it
- most of the carbon emitted today has been done so for free. Very little attempt has been made to put a price or tax on emissions to encourage and fund alternatives and reductions. Where a price or regulation has been attached it is typically not sufficient to enforce change (our changing climate and the impacts it is bringing represent the greatest market failure of all time).

**Figure 7: The growth of Addenbrooke's and the growth in consumption utilities, equipment, goods and materials**



In the 256 years since Addenbrooke's first opened its doors: fossil-fuel energy has become progressively cheaper and more useable - transforming our quality of life through ever increasing levels of production, technology and consumption. More sustainable energy sources are side-lined, the need for reuse, repair and recycling is downgraded and human-made carbon emissions escalate dramatically.

## The source: what we consume and how we consume it

The problematic characteristics of carbon emissions and their impacts, that previously made prioritising efforts to reduce them so difficult, are now being reversed. We still may not be able to see man-made carbon emissions but we know where they come from. As the cost of climate change escalates, it is increasingly recognised that we cannot just emit for free, and the impacts in terms of both geography and time are no longer remote – even in the UK, the front-line of climate impact is rapidly becoming more real, more current and more local. Recognising and acknowledging the need to do something about the problem is essential, but it needs to be rapidly followed by a means of allocating responsibility that is both accepted and responded to.

The dominant business-as-usual system of consumption makes this difficult. The majority of what we consume involves the extraction and refining of raw materials, their manufacture into products, goods and equipment, their packaging, distribution, unpacking, use, and the discarding of what is leftover and subsequent disposal processes.

This all largely happens in a conveyor-belt format. Each part relates to each other in terms of meeting or creating demand for the products as efficiently and in as low-cost manner possible. They do not, or very rarely, relate to each other in terms of their cumulative and grossly unbalanced impact on the natural environment.

Why is this suddenly such a problem? As populations have grown, demographics have changed, living standards have risen, and the demand on products from the conveyor-belt has expanded to the point where the raw materials no longer have time to regenerate.

The conveyor-belt is predominantly powered by fossil fuels – the harder the conveyor-belt works the greater the amount of fossil-fuels burned. The land, rivers, seas and atmosphere have all been taken as largely free repositories for waste. As the

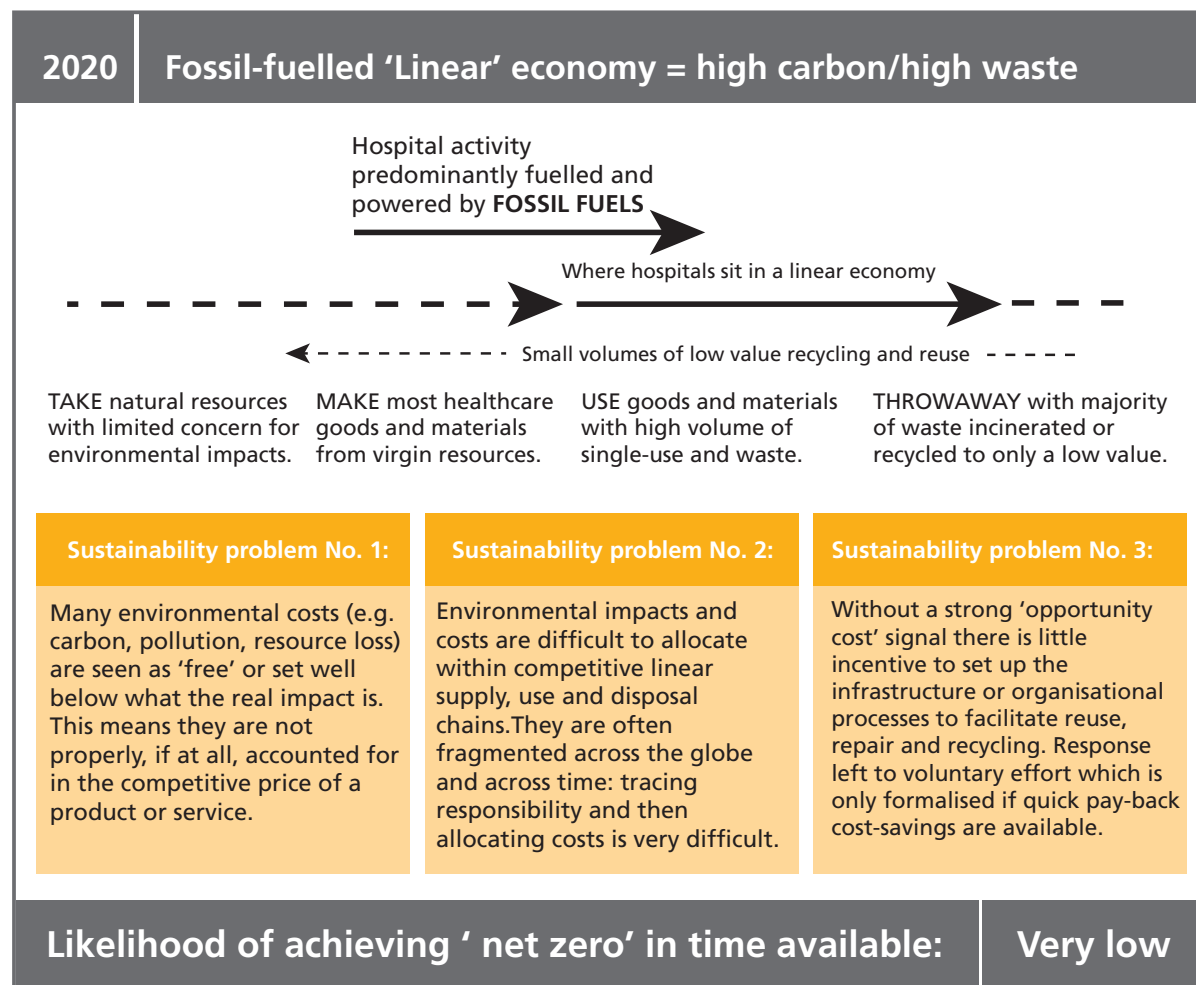
conveyor-belt has quickened, the volumes of carbon emissions, other pollution and waste products have reached the point where natural systems cannot contain them without dangerous side-effects – of which climate change is the most pernicious. When the conveyor-belt is seen to struggle it may be regulated by law to try and ensure it continues to run – in some countries there are carbon taxes, waste taxes and fines on pollution. But overall these taxes and fines are focused on regulating the belt so that it continues to run. The conveyor-belt model will continue to pressure and erode natural resources, continue to pollute and continue to emit the carbon that is so gravely changing our climate and destabilising our weather.

This conveyor-belt model of consumption dominates the national and global economy. It is often referred to as the linear economy. The supply chains provide what the customer wants and the customer then throws away the leftovers, all in a straight line: take-make-use-throwaway.

This appreciation of how we consume makes it clear that constantly managing waste through either destruction (incineration or landfill), unregulated release into the environment, or only extremely low value recycling is a major contributor to rising carbon emissions.

It has been calculated that less than 9% of the 100 billion tonnes of materials consumed annually across the world comes from previously extracted recycled sources. 70% of carbon emissions are linked to material handling and use: from extraction and transportation to processing and use of all the goods, materials and equipment we purchase (Circle Economy, 2021, [www.circularity-gap.world/2021](http://www.circularity-gap.world/2021)). This take-make-use-throwaway linear form of consumption is both high-carbon and high-waste and is the most significant driver of human-made climate change, pollution and the loss of natural resources.

**Figure 8 The fossil fuelled 'linear' economy = high-carbon/high-waste consumption**



## Resistance

Responsibilities, policies and commitments are the driving force behind what we consume and how we consume it. However, the current mode of consumption, and the supply chain and disposal practices that provide for it, offer scant priority and little space to:

- understanding and responding to carbon impact;
- accounting for the cost of carbon impact (both today and, more importantly, in the future) and building this into our cost calculations and subsequent decision making;
- assigning responsibility for this understanding and accounting to the right people in the right places to ensure that the high-carbon/high-waste business-as-usual route to the future is

replaced with a fully functional net-zero/zero-waste way forward.

From the CUH experience of delivery under its SDMP (2013-20), these are the three aspects of resistance that are engrained or habituated in thinking and behaviour with the resources and procedures biased to support them. The necessity to change is clear but the resistance and inertia within how we currently consume is immense. CUH has set itself three years maximum to reframe this thinking, overcome the resistance and deliver a group of opening actions that embody this new sustainable-for-real way of working.

Without the above aspects of understanding, accounting and assigning of responsibility, resistance to change is perpetuated by:

- business cases struck on short-term returns and failing to appreciate the opportunity cost of not incorporating net-zero carbon adjusted options
- complacency that can emerge from hollow forms of progress against carbon reductions that are an outcome of actions conducted elsewhere or as an unintentional by-product of an unrelated activity
- well intentioned high-level responses that are often denied credibility by the on-the-ground terrain of local circumstances and conditions.

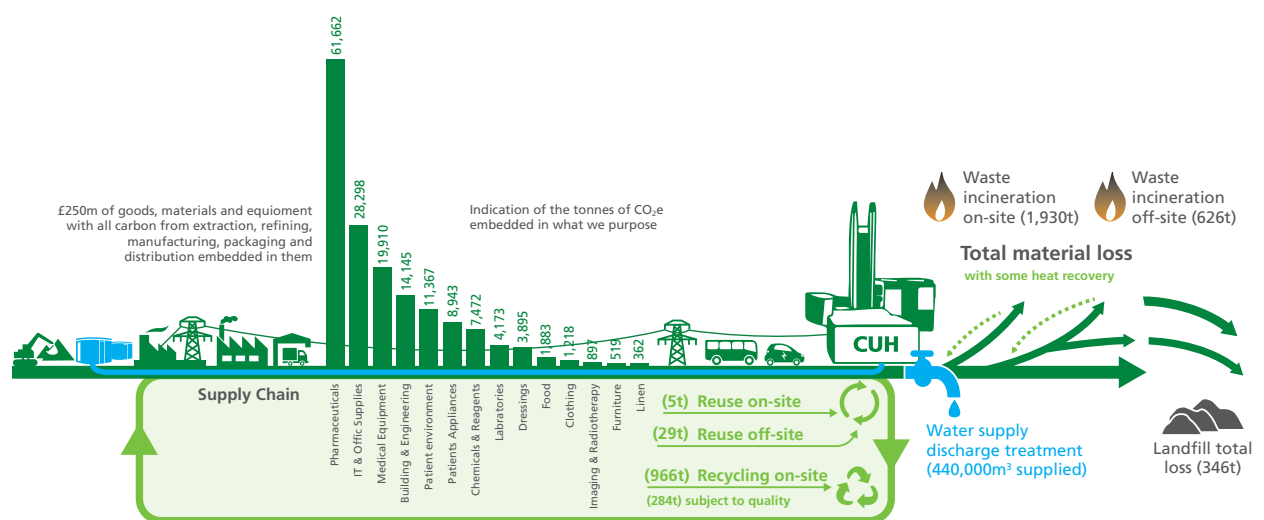
The final aspect of resistance is the most damaging and also the most obscured. Almost all of what we throw away is either deemed a single-use consumable or no longer fit for purpose. In both

cases the item will certainly be replaced with new. Unless the thrown-away items are refurbished, repurposed, or fully recycled to as high a value as possible, then the whole process of extracting raw materials, refining, manufacture, packaging and distribution with all its associated carbon emissions (and pollution and loss of natural resource) impacts will begin the linear cycle again, and again.

The embeddedness of this high-carbon/high-waste linear system, into what and how we consume, creates by far the biggest resistance to actions for a sustainable net-zero/zero-waste future.

We can input CUH's emissions into a more detailed image of this high-carbon/high-waste linear economy, as illustrated in Figure 9.

**Figure 9 CUH carbon footprint and material throughput 2019/20**



## The solution: zero-carbon and zero-waste

The linear consumption chain is dominated by fossil fuels (high-carbon) and a one-way 'cradle-to-grave' life cycle for the majority of what we consume. Perhaps the first thing that becomes clear from this arrangement of how we consume, is that there is little room for manoeuvre to halve carbon emissions within the next 10 years. The fragmentation and the 'one-way' nature of the relationships between supply, manufacture, consumption and waste disposal means that transformation as an entire

system to net-zero and zero-waste can only happen in hesitant and very slow incremental steps. The climate emergency demands much more urgent and comprehensive system change.

At the heart of bringing forward this change is connectivity, in:

- a.) energy sourcing and the intensity of its use, and
- b.) reclassifying the term 'waste' as the term 'asset.'

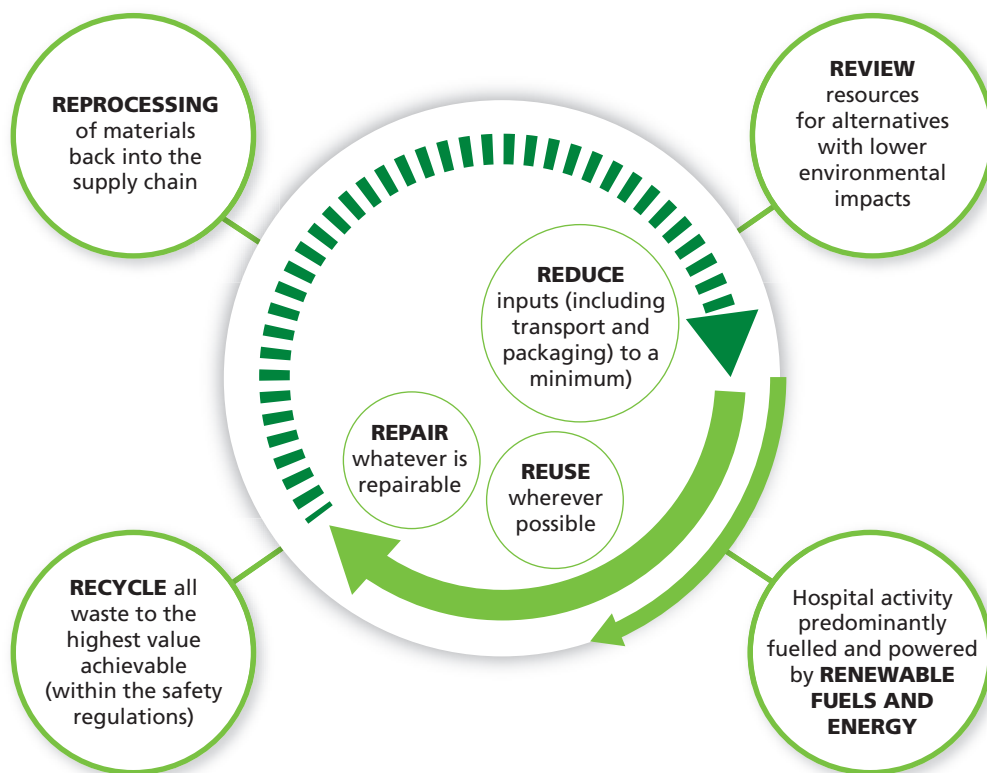


The model for this system transformation has already been developed as a 'circular' consumption chain. This is referred to as the 'circular economy' and is dominated by renewable energy, very high energy efficiency and a cradle-to-cradle constant cycling round of what we consume: there is no waste, only assets to be used, in one form or another, again and again.

Renewable energy (from the sun, wind and water) is already developing apace, recycling of waste is already

in common currency. The challenge is to massively upscale both to eradicate the need for fossil fuels and the idea that 'waste' is acceptable in a world with limited natural resources and a growing demand. The resistance within the currently dominant high-carbon/high-waste linear economy provides only limited room to achieve this and not within the timeframe available to rapidly lessen the climate emergency and begin to reverse ecological breakdown.

**Figure 10: The renewably-fuelled 'circular' economy = net-zero/zero-waste consumption**



### Sustainability solution No. 1:

The cost of all environmental impacts (especially carbon emissions) are included in the production, retail and disposal costs of all utilities, goods and materials. Net-zero/zero-waste products become the most competitive.

### Sustainability solution No. 2:

Because carbon, pollution and waste are identified and allocated within the supply-use-disposal chain, all associated processes are subject to collaborative adaptation and innovation to reduce direct and pass-through costs.

### Sustainability solution No. 3:

Forming regulatory measures, alongside market and consumer preferences, to specifically respond to retaining and recouping the environmental value through repair, reuse and high value recycling. The transition away from fossil fuel is achieved by default.

**Likelihood of achieving 'net-zero' in time available: Possible**

## The way forward: reframe and restructure consumption

To make the transition from a linear to a circular economy we need to reframe some key aspects of decision-making. Material steps to directly cut emissions are important, but to halve emissions inside ten years and then go on to net-zero in the following fifteen, we must also include actions to rapidly reframe decision-making in relation to what and how we consume. This reframing covers three core aspects that directly control our consumption. They apply to all organisations across the supply, use and disposal chain (i.e. everybody) but are especially relevant to intense consumers such as CUH.

### Reframing consumption, approach No.1: Physical infrastructure and connecting budgets

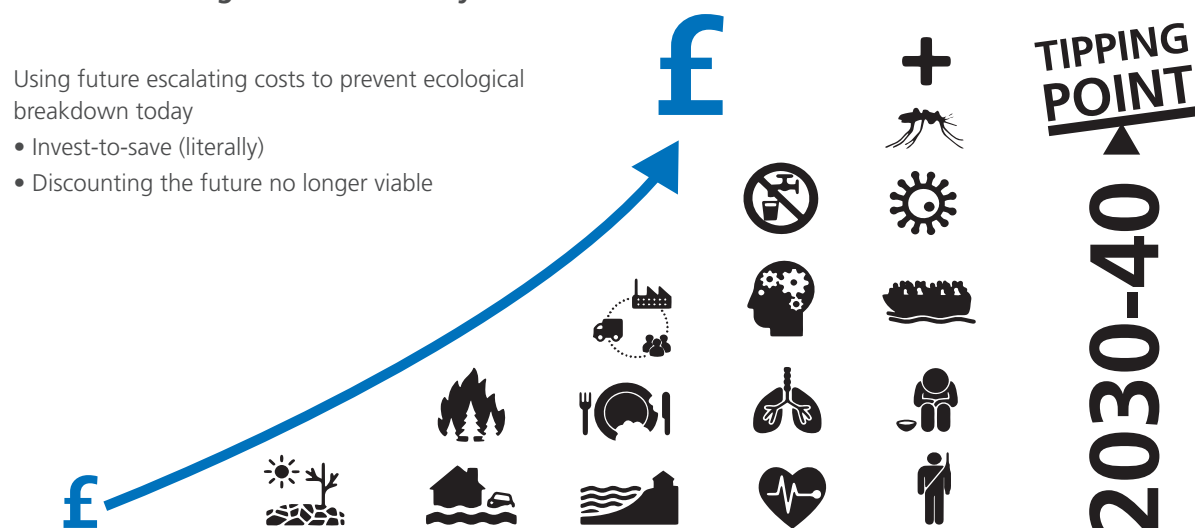
CUH's premises and the structure of its main campus were designed for the use of fossil fuels and a cradle-to-grave approach to waste management. The fossil fuel infrastructure provides for burning natural gas to generate heat (and waste incineration) together with petrol and diesel for travel to and from the site on business, for patient and visitor access, and staff commuting, together

with electricity from the national grid and associated power stations. Electricity from renewable sources (either generated on-site or from the national grid) is the primary way forward to replace fossil fuels for heating and motorised transport. This transition will require very significant investment across five fronts:

1. sourcing genuinely renewable electricity (e.g. through dedicated wind and solar power purchase agreements or generating from solar panels on or near site);
2. replacing all gas-fired heating plant with an electrical equivalent (e.g. heat-pump technology);
3. making major improvements to the fabric of buildings to reduce heat loss as high efficiency electrical heat is of a lower grade intensity (and higher cost);
4. providing on-site electric vehicle charging facilities, and;
5. upgrading active travel routes to and from site as well as the on-site support facilities.

The current waste management infrastructure is designed for the on-site incineration of clinical waste (with heat recovery) and contractor collection and off-

**Figure 11: The cost of tackling the impacts of climate change tomorrow far outweigh the costs of tackling the causes today.**



site disposal (including recycling) of non-hazardous/ domestic waste. To improve reuse, repair and recycle options, additional space and a dedicated on-site sorting/storing/recycling facility will be required.

**Implementing the above will require major capital expenditure. The returns on this investment relate to avoiding the cost of ecological breakdown. This is an opportunity cost of an almost unimaginably high value. The business cases for funding the required retrofit and new build projects should be reframed in this light. Connecting the future operational expenditure of managing climate chaos with today's capital expenditure to prevent the much greater cost of managing climate chaos being incurred.**

## Reframing consumption, approach No.2: Organisational procedures and life cycle assessment

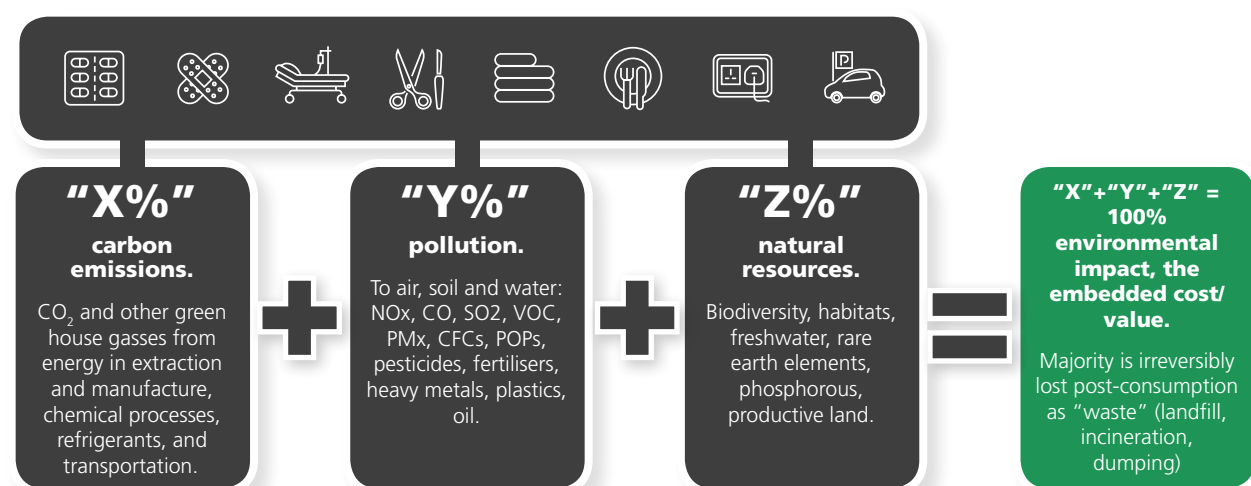
The Trust's procedures provide formal guidance and direction on all aspects of its services. As such they also have a significant bearing on what and how the organisation consumes – from energy to food and water, travel miles, pharmaceuticals and the entire range of goods, materials and equipment,

and associated waste management necessary in running a large acute teaching hospital. These procedures are required to account for a range of regulatory matters from health and safety to equality and diversity. These requirements, however, do not extend to an assessment of a procedure's carbon footprint and waste impacts.

Behind everything we consume at CUH there is a 'shadow' value associated with the carbon emitted during its production, packaging, distribution, use and disposal. The steps through which our procedures are drafted, assessed and approved needs to be reframed to incorporate a basic life cycle assessment (LCA) that draws out and, as far as possible, quantifies these impacts. Where the impacts are material then alternatives in terms of process or components used should be considered. If there are no viable options to reduce emissions or waste at this point then the way forward should be secured for inclusion in future reviews. As far as possible the impacts should be quantified together with the mitigation measures applied. This is important to be able to provide a bottom-up calculation of savings achieved – the methodology of corporate-level calculations can rarely be fine-tuned enough to pick-up local area savings.

### Applying a basic LCA methodology during the drafting or review of organisational procedures

**Figure 12: Almost everything we consume comes with a 'shadow' environmental impact and cost (carbon, pollution and loss of natural resources)**



provides the opportunity to minimise the carbon shadow and recoup as much value as possible from items used/consumed during implementation. The core assessment areas would include energy use, water use, travel miles, indicative footprints of goods, equipment and materials consumed and what happens to these items post-consumption.

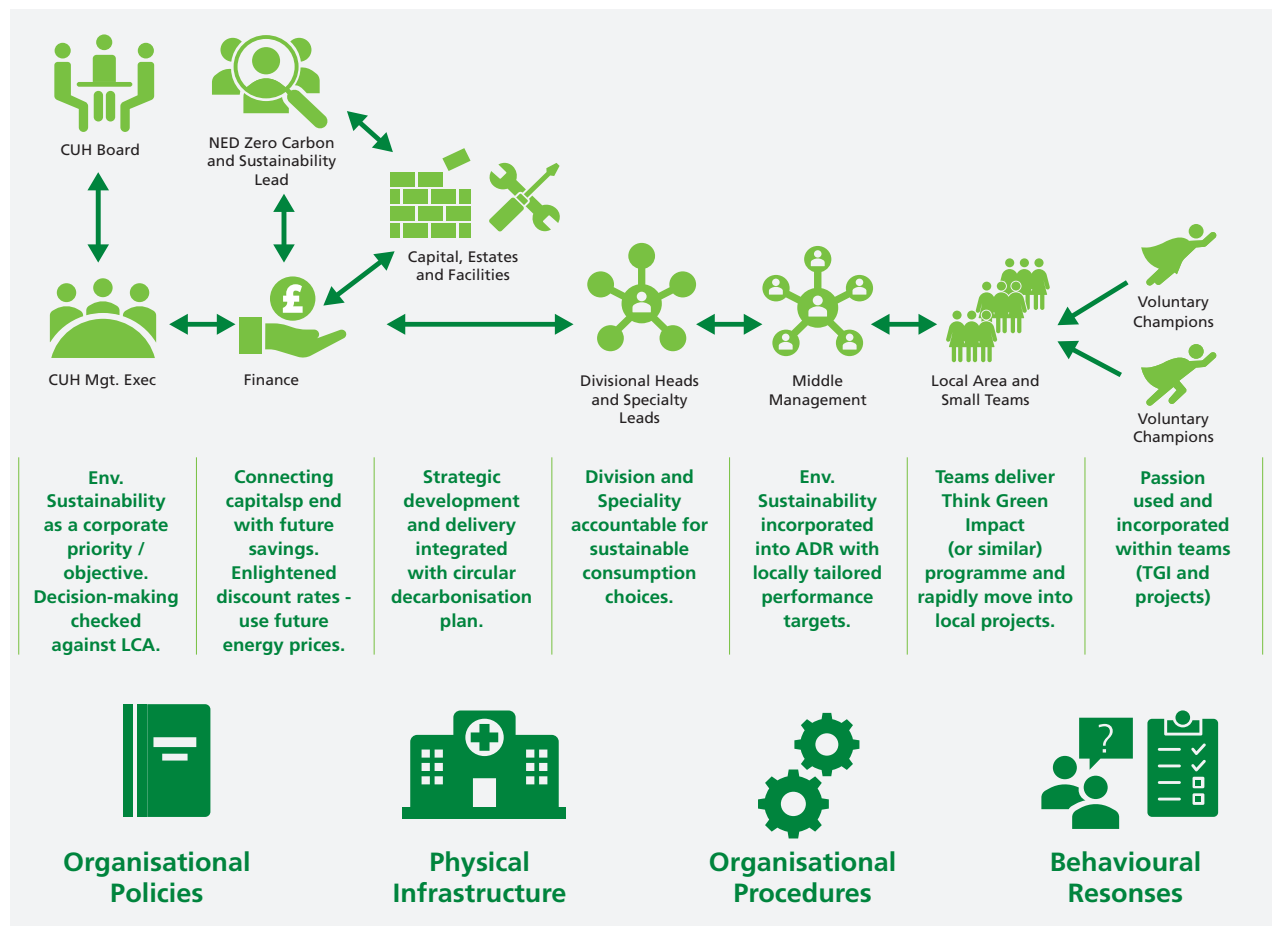
### Reframing consumption, approach No.3: Behavioural responses and devolving responsibility

The choices about what and how we consume are most real at the point of consumption. It is here that packaging is dealt with, utility and supplementary requirements are understood, the impacts of single-use are most strongly felt when what is leftover

is thrown away, and the quality and longevity of items is most appreciated. Through focus groups and other interactions with staff, the point of consumption is where carbon impacts and wasted resources are most keenly recognised – whether this be taking blood from a patient, treating patients in ED, carrying out surgery, travelling on Trust business, organising a meeting or refurbishing a clinic.

The responsibility for choosing what is consumed and how it is consumed stands to be far better managed if some of the responsibility is formally transferred to well informed local area managers as close as possible to the teams they are managing. This is where decisions sensitive to carbon emissions and waste can proactively and positively influence the environmental impacts of everything that is consumed on the front-line of activity (from wards, to clinics, theatres, laboratories, workshops and offices).

Figure 13: The choices for lower carbon and lower waste are best made close to the point of consumption (sustainability is for everyone)



## The responsible consumer

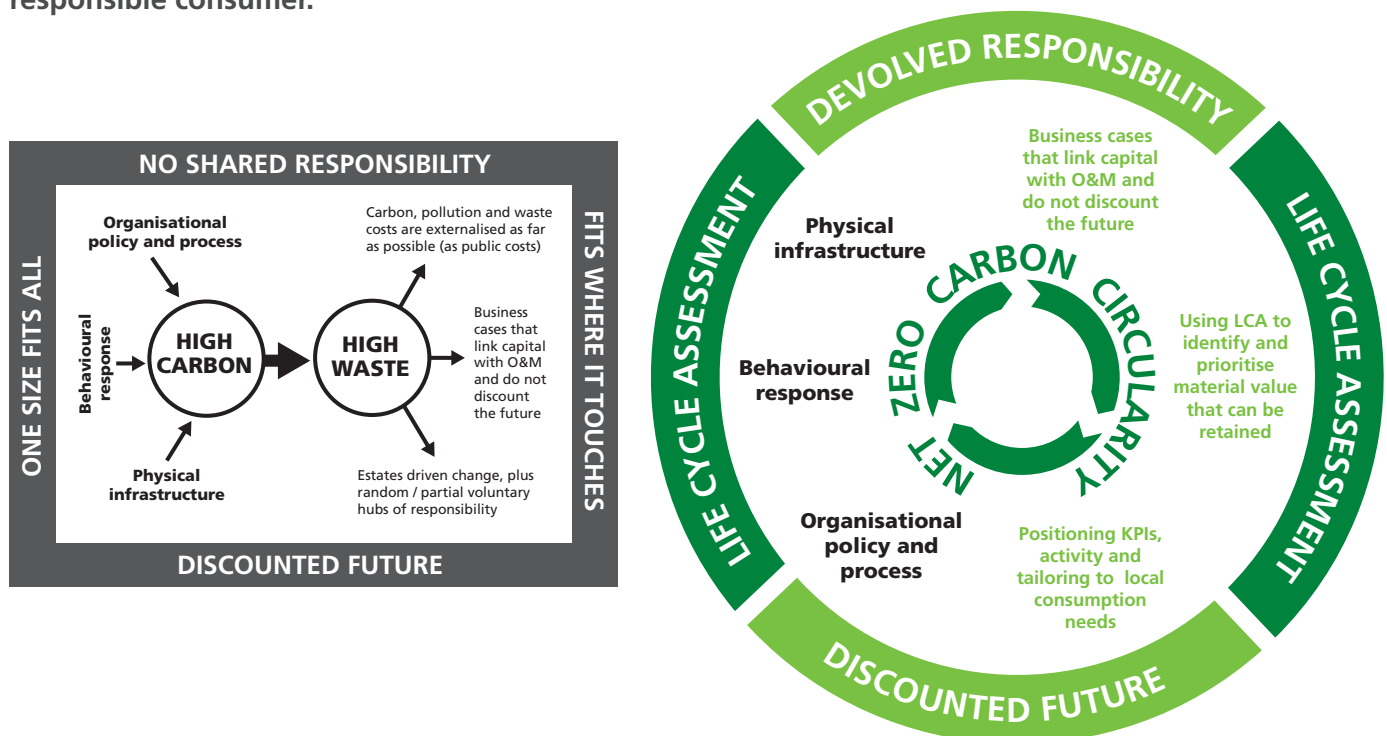
Living and working with the high-carbon outcomes of a linear economy is currently very hard to avoid: most of us live high-carbon/high-waste lives out of habitual response, entrenched processes and the infrastructure around us. Experience has shown us that where responsibility is not shared, where future climate chaos costs are still discounted, and where it has been acceptable for one-size-fits-all solutions to only fit-where-they-touch, then rapid decarbonisation is not achievable.

To transition to a net-zero/zero-waste circular economy, well-informed choices need to be devolved close to the point of consumption, using a basic life cycle assessment to determine the material sources of emissions and waste streams, and with any required costs being set against carbon reduction responsive business cases that recognise the opportunity costs of not halting human-made climate change. With decision-making reframed in

this way (re. Figure 14), each element can benefit each other in positive self-reinforcing ways to open the path to net-zero. The speed with which we get there will depend on:

- the commitment to reframing every key decision across the interconnected real-world terrain of physical infrastructure, organisational processes, and behavioural responses, and
- the resources put in, and tenacity applied, to support and develop these decisions into a full system net-zero/zero-waste transformation.
- Devolving the responsibility to the local management closest to the point of consumption – where the 'what' and 'how' of consumption will be best understood. The carbon consciousness needs to be developed here so that this form of carbon reducing subsidiarity can really work.

**Figure 14: Reframing our decision making on the way to becoming a net-zero/zero-waste responsible consumer.**

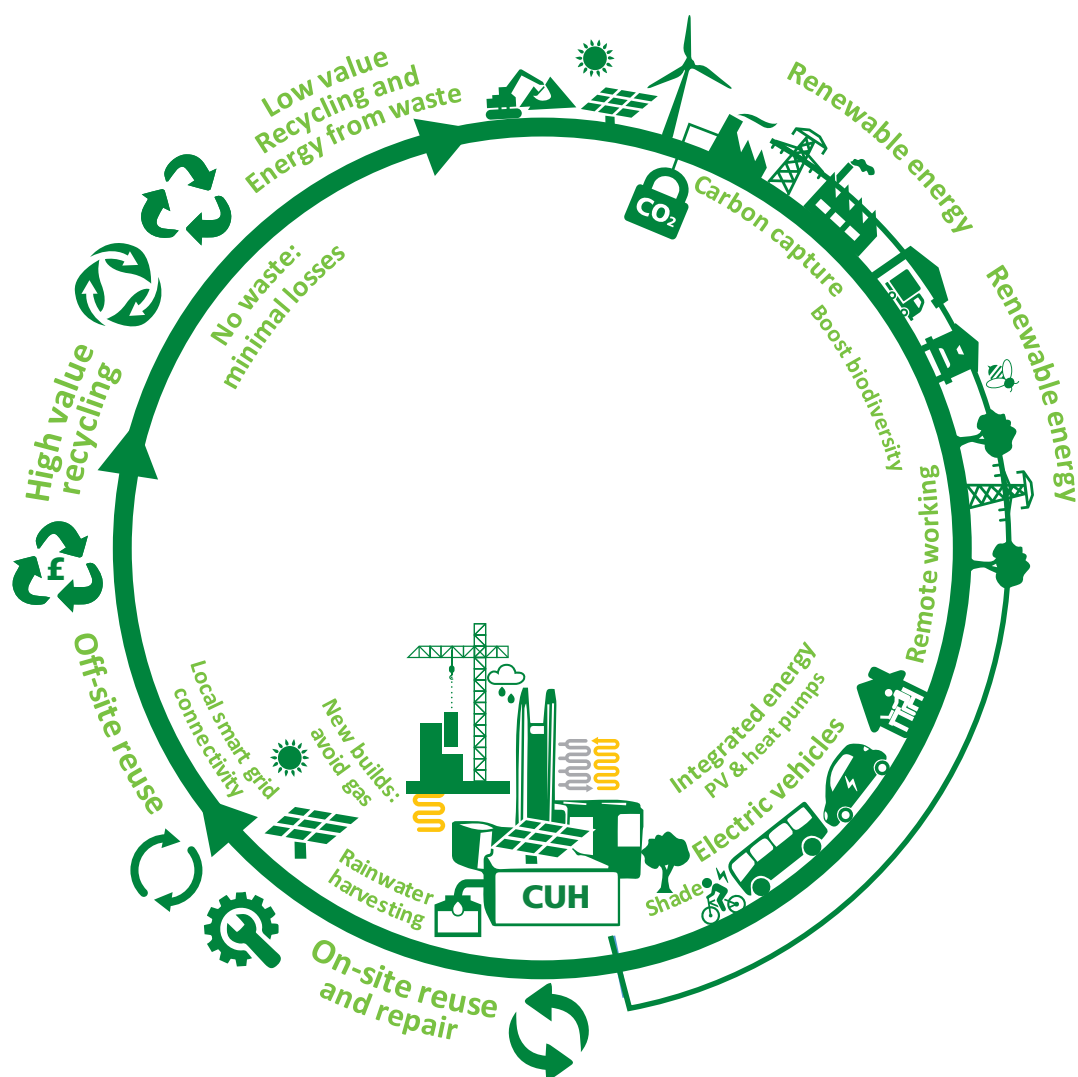




The actions contained within this Phase 1 Green Plan (2022-24) have been designed to press forward and help establish the three approaches of life-cycle assessment, time-connected budgets and devolved

responsibility so that CUH can take up its role as a responsible consumer. At this crucial point in time, this is a genuine 'anchor' institution role – making a vital contribution to the strategic development of a circular economy by facilitating a system transformation to net-zero/zero-waste across the local community it serves.

**Figure 15: CUH's current position and consumption in tomorrow's circular economy.**



*“Respiratory patients are amongst the most heavily impacted by air pollution and the climate crisis. I hope that by intensifying our sustainability efforts – ranging from decreasing the carbon cost of our prescribed inhalers to reducing the number of plastic aprons we throw away – we can be the environmental leaders the NHS needs.”*

Anthony Martinelli Respiratory Specialist Registrar

## Reaping the rewards: progressive, productive and resilient

“The health arguments for rapid climate action have never been clearer” (Director General, WHO, October 2021). This is central to the development of CUH’s role as a responsible consumer in the transition to a renewably powered circular economy.

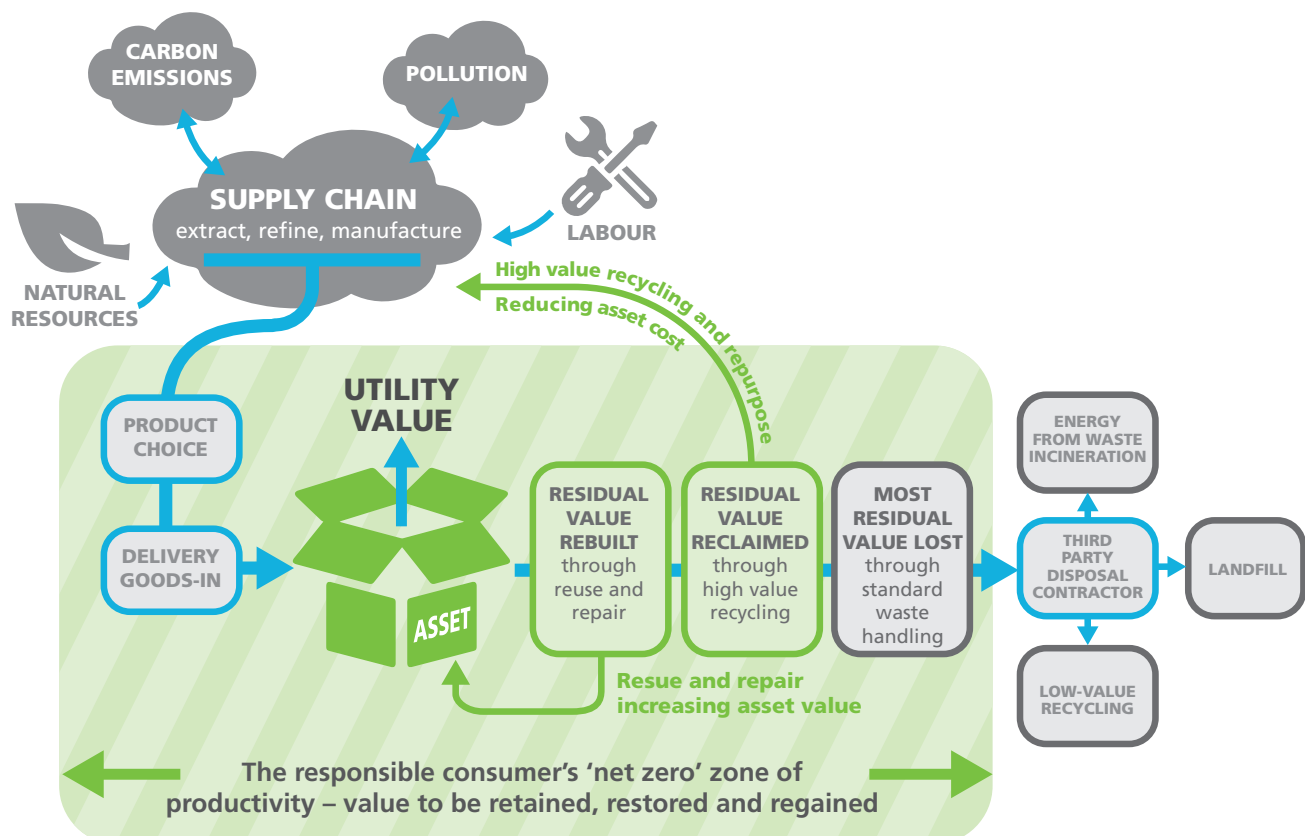
Running in parallel to this core rationale, is a raft of productivity and resilience benefits that, with commitment and strong partnership working, stand to secure a sustainable and prosperous future for the Trust. What is sometimes termed the ‘circular business advantage’, through creating or retaining previously undeveloped or lost value in the consumption chain, is based on the idea of doing less harm and delivering net positive productivity that is both regenerative and restorative. It is a

business advantage that offers a pathway for CUH to identify, capture and retain additional cost reductions and revenue rebates while continuing to meet the needs of our patients (re. Figure 16).

Whilst the responsible consumer in the 2020’s is prioritising resource efficiency, the social and financial aspects are also essential for ensuring that this responsibility is sustained. The transition from linear to circular consumption is not only environmentally more secure, but it also provides significant financial benefits such as:

- monetary and material resources being used more profitably,
- waste being eradicated,

**Figure 16: The role of the responsible consumer: retaining, restoring and regaining value to transform the relationship between supply and disposal**



- exposure to price volatility being diminished through substantial net material savings,
- energy demand and costs being heavily reduced allowing renewable energy sources to supplant fossil fuels,
- a wave of innovation generating major job creation potential.

The greater resilience that these benefits engender within the supply chain also brings important social benefits in workforce confidence in the future, reduced anxiety, stronger recruitment and retention. This resilience is a product of greater interdependence in what and how we consume – one that builds transparency in trust and security through actively connecting health, food, shelter and work.

The essential actions for CUH as a responsible consumer in the transformation to net-zero/zero-waste ways of working are summarised in Figure 16

**Figure 17: the actions behind the ReSOLVE to find a trajectory for net-zero/zero-waste**

<b>Regenerate:</b>	shifting to renewable energy and materials.
<b>Share:</b>	promote the sharing of products or otherwise prolonging product lifespans through maintenance and design.
<b>Optimise:</b>	improving product efficiency and reducing waste from the supply chain.
<b>Loop:</b>	keeping components and materials in 'closed loops' through remanufacturing and recycling.
<b>Virtualise:</b>	delivering goods and services virtually.
<b>Exchange:</b>	replacing old materials with advanced renewable ones or applying new technologies.

and 17. The asset in the centre of Figure 16 relates to anything that CUH purchases. Optimising the value of an asset, however big or small, whilst lowering the environmental impact over its full life cycle, lies at the heart of a net-zero/zero-waste system transformation.

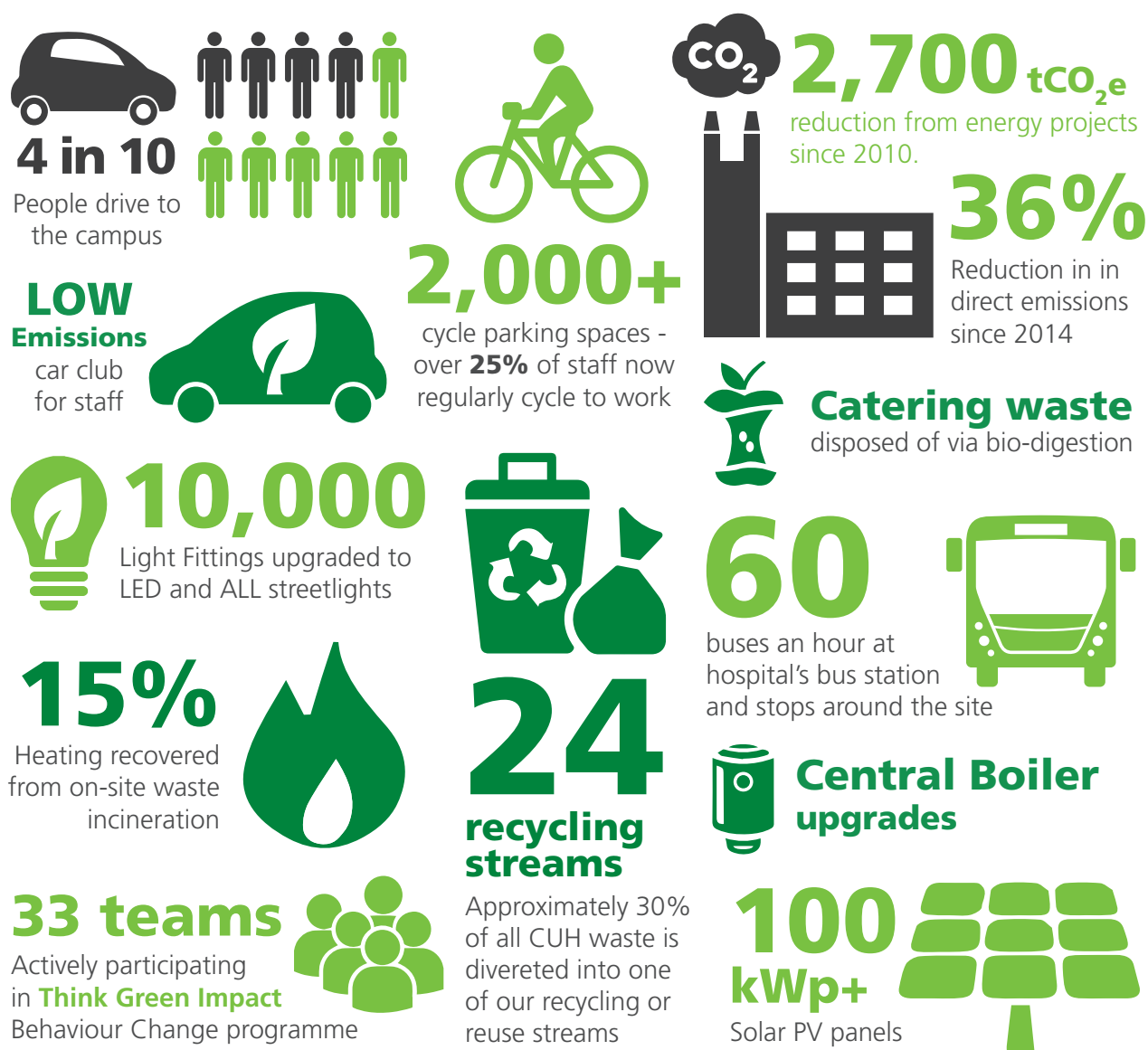
The core actions to increase the utilisation of physical assets, prolong their life, and shift resource use from finite to renewable sources, have been usefully presented in the ReSOLVE framework (Figure 17 McKinsey & Co.) – all the elements of which stand to be important to a prosperous and resilient future for CUH as a responsible consumer.

**As net-zero/zero-waste circularity becomes embedded within the Trust we can expect to see:**

- product ownership becoming a thing of the past (e.g. digitally boosted product-service systems building upon CUH's leadership through EPIC);
- future procurement dominated by regulatory change to sustainably manage the tension between raw and recycled materials;
- procuring items as services alongside sharing as core business values (e.g. building on existing CUH experience with its contracts for linen, dynamic mattresses and support for cycle share schemes);
- more flexible business arrangements based upon transparency and collaboration (e.g. building on CUH's existing material take-back schemes, charitable donations, and partnership knowledge flows);
- increasing options to bypass traditional trading channels with providers who do not share the Trusts net-zero/zero-waste approach to consumption (e.g. using the NHS's 2021 Net Zero Supplier Roadmap);
- a much improved approach to resource use, product design and waste providing overall health and quality of life benefits.

# Our Progress so far

Our sustainability progress to date has been productive – we have cut significant amounts of carbon and reduced operational budgets whilst contributing to CUH being an even better place to work.



In the context of our total consumption however, we have only made our business-as-usual marginally more environmentally sustainable, efficient and cost-effective. The major areas of achievement to date have been seen across: energy and water; travel and transport; waste management, staff engagement and partnership working.

Some examples of our progress are illustrated overleaf.

Figure 18: Lowering our environmental impact through sustainable building upgrades and management

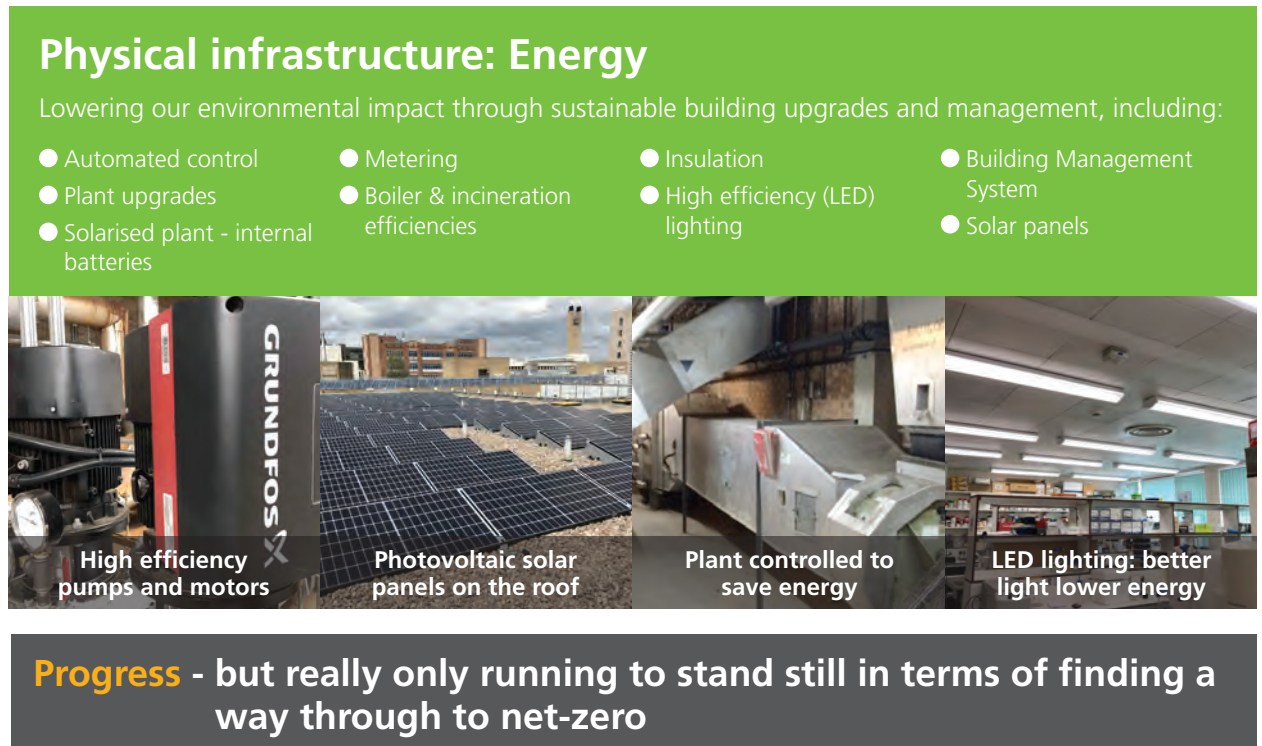


Figure 19: Carbon emissions from CUH energy use in premises 2014/15 2020/21

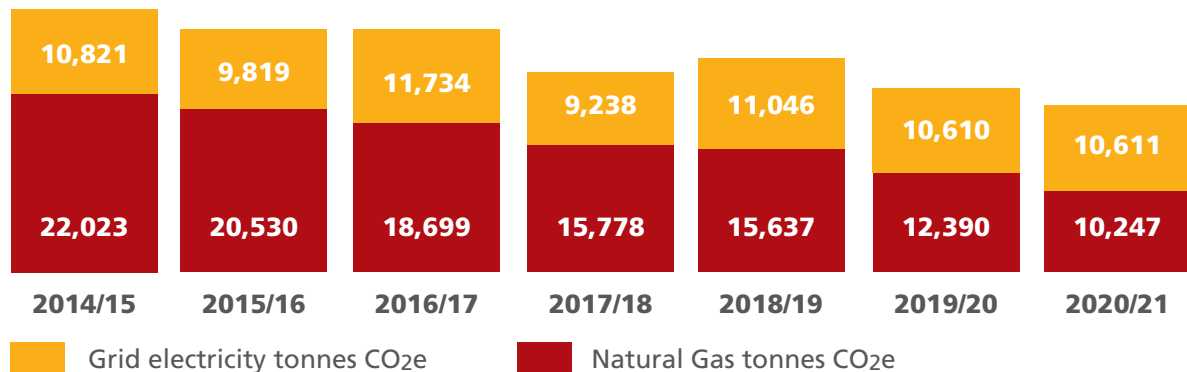
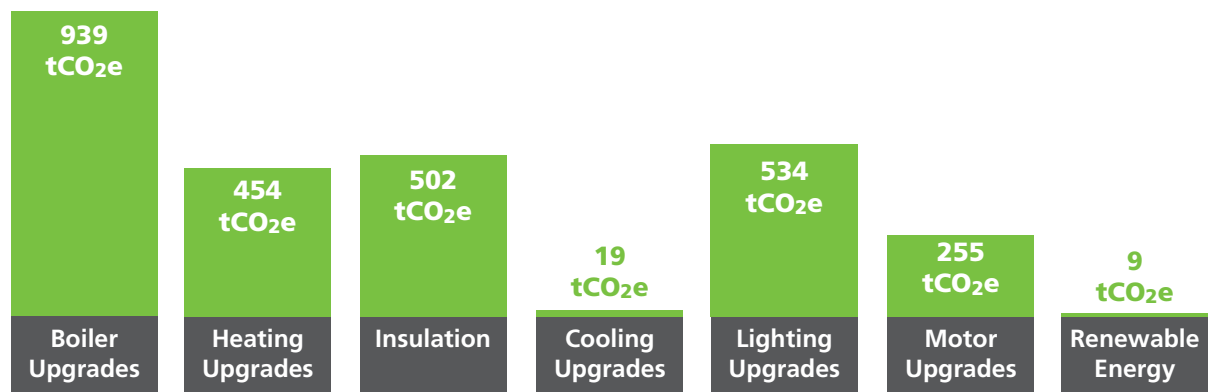


Figure 20: Over the past 12 years, the Trust's dedicated energy efficiency fund has permanently cut its carbon footprint by approximately 2,700t CO<sub>2</sub>e





## Lowering our environmental impact through supporting sustainable travel and transport

Figure 21: Lowering our environmental impact through supporting sustainable travel and transport



Figure 22: Typical weekday flow of arrivals on to Biomedical Campus by main travel mode

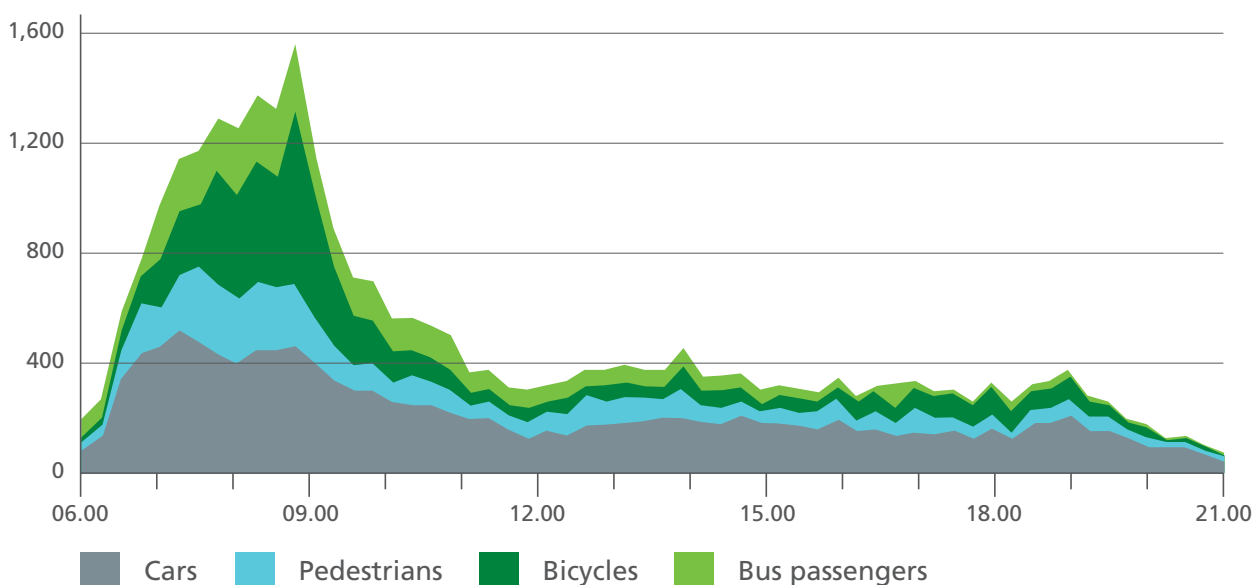


Figure 23: Business milage 2019/20 and 2020/21: split between CUH lease pool cars and staff using their own vehicles (greyfleet)

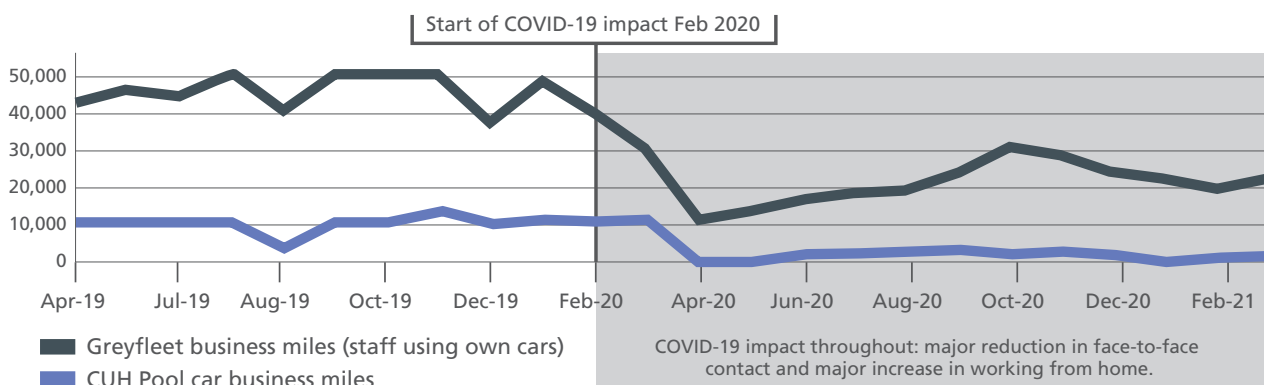


Figure 24: Lowering the environmental impact through sustainable waste management

## Physical infrastructure: Waste Management

Lowering the environmental impact through sustainable waste management, including:

- Dry-mixed recycling
- Abandoned cycles
- Maintenance and repairs
- Food waste - biodigestion
- and many more..
- Walking aids
- Polystyrene
- Clinical glass
- Batteries

**Progress** - but still too much waste arising to be on track for net-zero/zero-waste

Figure 25: Total waste arising, on site incineration with heat recovery, and recycling profiles pre and post COVID-19

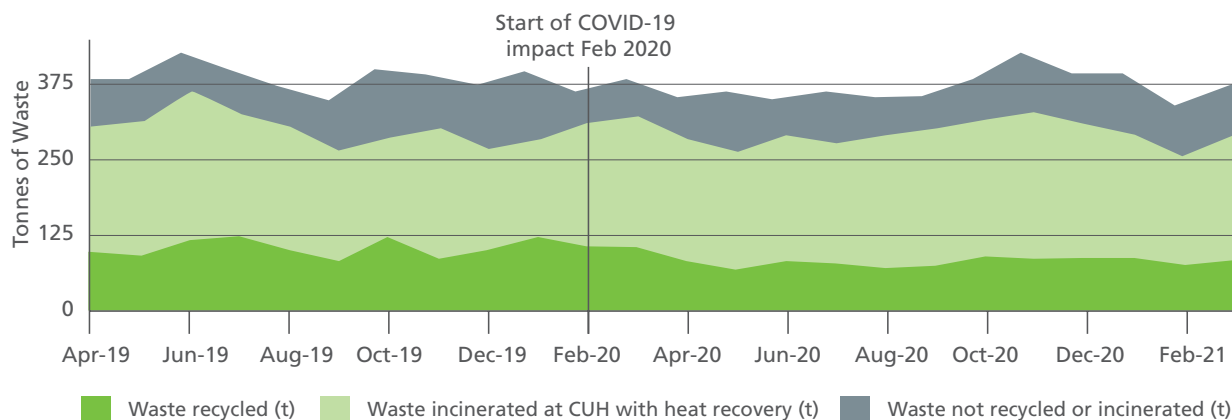


Figure 26: Lowering the environmental impact through staff participation

## Process: Voluntary collaboration

Increasing engagement and rewarding those who make an Impact, including:

- Rosie Hospital, Level 1, Breast Unit
- Theatres
- CRN Nurses, Cotton House
- C3 Ward
- Contact Centre
- Cambridge Health at Work
- Frank Lee Centre
- A&E
- J2 Ward
- and many more..



**Progress** - but down to a relative handful of volunteering champions

“ Here in Peri-Ops we are serious about sustainability and have been working really hard to lessen the impact that we have on the environment. The difference between when we started this journey, and where we are now is huge. At first, it was a small group of like-minded individuals making encouraging changes, recycling more, fewer plastics and additional recycling bins. We now have a phenomenal number of staff, across all grades, working together to tackle multiple projects ”

Rona Goodge Senior Practice Educator – Theatres, RCN Steward Eastern Region



# Part 3: Taking responsibility

Climate Emergency



Recognising what a safe and sustainable net-zero carbon future looks like, and how we should reframe decision-making to dissolve the resistance to change held within business-as-usual, are both vitally important. However, the gap between where we are now and where we need to be is deeply entrenched. The following three sections (policy, strategy and actions) provide the plan for how CUH will take responsibility for bridging this gap.

## Our commitments to net-zero/zero-waste productivity and resilience

The climate crisis gap between where we are today in 2021/22, in terms of a route through to net-zero, and where we need to be by 2032 is significant. The transformation from high-carbon/high-waste consumption to a safe and sustainable net-zero/zero-waste version rests as much on our day-to-day choices as it does on physical changes to our energy sources, buildings, transport and goods, equipment and materials. The current incremental approach of short-term win-win 'sustainability' based upon physical infrastructure upgrades, corporate awareness raising and under-resourced volunteer support cannot deliver the levels of carbon reduction required in a climate crisis. .

The physical and behavioural changes come together in the policies that define how our hospital is to be run. To date we have made sound progress in upgrading physical infrastructure and taken important steps in trialling models of behaviour

change, but the parallel shaping of policies (and the procedures beneath them) is falling behind.

In less high risk times these would gradually and incrementally evolve. In an emergency, however, prioritising the inclusion of net-zero/zero-waste parameters in all relevant decision-making becomes a necessity.

A day-in-the-life at CUH is a series of choices and decisions, many of which will have carbon and waste impacts because they involve what we consume and how we consume it (including the post-consumption disposal). Currently these choices and decisions tend to be pre-framed by the existing policies and procedures and accumulated history and habits that perpetuate high-carbon/high-waste business-as-usual. This means that any physical infrastructure upgrades may well be unknowingly undermined by organisational procedures and personal behaviours.

**“Working for the NHS is not only about looking after our patients but also about being a leader in our community. In spite of international legislation climate change continues at pace and it is only by not compromising on our Green plans at all levels, as individuals, organisations and nations, that we may be able to change this.**

**“As a Divisional Director I want to be able to make the plan real for staff, and this will start with small but tangible targets such as promoting “Meat Free Monday” or looking at our local recycling. We will be working closely with the central team to see what real changes we can make.”**

Miss Kanwalraj Moar Divisional Director, Women's and Children's Service



*“ In the endoscopy unit we have a lot of single use devices, all of which come in paper and plastic packaging. One of our nurses Helen drove a project to have green bins for recycling in all of our endoscopy theatres and these are now fully installed and the non-clinical waste goes for recycling. We all agreed this was an important thing to do to ensure that these materials are recycled and not sent to landfill. ”*

Dr G D Corbett Consultant Endoscopist, Gastroenterologist and Physician  
Clinical Director Digestive Diseases

*“ The Occupational Therapy department has created an enthusiastic working party aiming to reduce waste and to contribute to the Trust’s Zero Waste Plan. As a group, we proactively identified ways that we can reduce waste and we will continue to identify many more. We are challenging every member of the occupational therapy department to make a sustainable waste reduction pledge on our up and coming ‘Waste Challenging Wednesday’. This is an important issue for us all and we can all make a difference, no matter how big or small. We are excited to see what differences we can make to tackle climate change. ”*

Louise Bonner Occupational Therapy Deputy Manager

*“ Theatres are one of the most resource intense areas of a hospital and I have been working to improve the sustainability and environmental impacts of surgery. Specifically, driving change from disposable theatre gowns and drapes towards reusable alternatives that create 750% less waste, 250-330% less carbon and 200-300% less water waste throughout their life cycle.*

*“Other changes we hope to implement include increasing the number of single use surgical instruments that are reprocessed for reuse rather than discarded. ”*

Dr Henry Dunne CT1 Plastics

*“ So far, our department, which has many like-minded and enthusiastic team-members, has been working to reduce our volatile anaesthetic gas use, promote better waste management and recycling, and to positively engage our NHS colleagues in helping this cause. We also have plans to reduce our energy usage and reduce our single use plastics.*

*The health of our patients, be they young or old, is inexorably linked to the environment we live in, and I am grateful to work in a department, and a Trust that has significant plans ”*

Louisa Swain Senior Clinical Fellow – Anaesthetics

## Day-in-the-life decisions at CUH: choosing between high-carbon/high-waste or net-zero/zero-waste

Business-as-usual decisions and choices that perpetuate high-carbon/high-waste consumption – worsening the climate emergency, dangerous pollution and the loss of vital resources.		Decisions and choices are reframed so that life cycle analysis counts, current and future costs are connected, and responsibility is devolved to those closest to the point of consumption.
Staff continue to use their own cars (esp. where not very low emissions).	When choosing how to travel on business.	Use of on-line meetings where possible. Switch to using Trust's very low emission pool cars.
Net-zero/zero-waste not included or given sufficient weight in specification.	When drafting a tender specification document.	Specifications include material net-zero/zero-waste parameters that are prioritised in scoring.
Weak coverage of operational inputs (utilities and supply chain) and outputs (waste).	When thinking about what should be included in a new process.	Carbon, waste and travel footprint of the full process calculated and minimised by design.
Use of nearest bin or waste collection point that seems appropriate.	When deciding how to dispose of an unwanted item.	Care taken to fully understand waste segregation and then to ensure the correct stream is used.
Selection based on availability from supplier (and marketing promotions).	When picking out what to eat from the shop or café.	Fresh, local, seasonal, organic, plant-based option preferred or home-brought.
Decision almost entirely based on only utility and up-front cost.	When specifying a piece of equipment to carry out a particular job.	Full life cycle carbon and waste implications given real material weight in choice.
All used/open items put into nearest general purpose bin (typically offensive)	When setting-up or clearing-away after a clinical procedure.	Clean and non-hazardous paper, card and plastic packaging separated out and put in a green bin.
Lowest initial cost; carbon & waste not costed; future value discounted.	When establishing and managing a project budget.	All operational and lifetime costs (plus carbon and waste) included; discount rates reversed.
Limited focus on importance of active travel, recycling, and energy saving.	When introducing a new starter to their job role.	Focus on responsibilities to help deliver CUH, team and personal net-zero/zero-waste targets.
Pre-leave checks and hand-overs do not cover energy, waste and travel.	When routinely packing up to go home at the end of a shift.	Routine checks covering power-off, all waste carefully sorted, and sustainable travel where possible.

Trust policies and procedures, either directly or indirectly, set the context and parameters for such decisions and, where policy is silent, we use the CUH-family values of Together: Safe, Kind and Excellent.

Taking steps to reduce and manage the impacts of an unfolding environmental crisis on the Trust's present and future patients, staff and local community falls within these values. However, within the pressing conditions of the ongoing climate emergency it is important to provide more specific guidance and direction.

To this end, the following strategic commitments set the level of expectation for individuals directly

responsible for decisions, or establishing procedures, relating to how goods, materials, devices or larger items of equipment are specified and/or used (including relevant aspects of maintenance and reuse) and subsequently disposed of when exhausted or no longer required.

Wherever sufficient information or circumstances exist (or can be practically established) then proactive steps should be taken to use these commitments to minimise both the carbon emissions and waste arising from the delivery of all aspects of clinical and non-clinical work for and on behalf of the Trust (within the existing framework of safety procedures, regulatory guidance and operational viability).

## Strategic commitments: underpinning productive and resilient net-zero/zero-waste choices

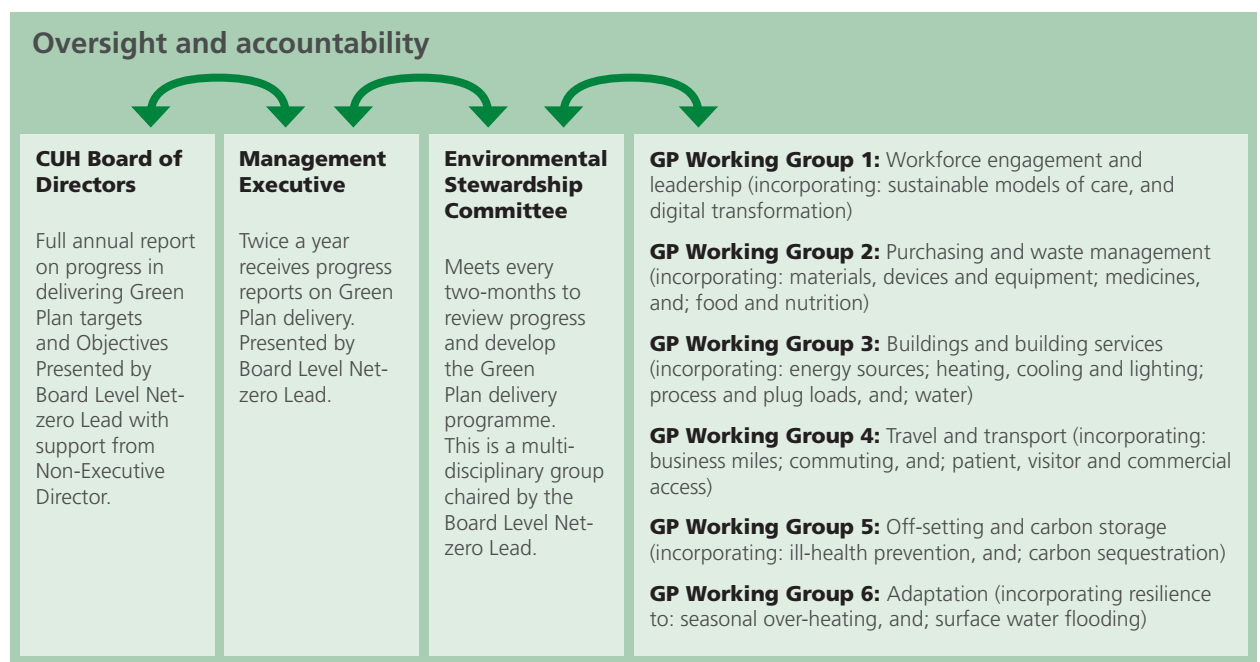
<b>Workforce engagement and leadership</b> (incorporating: sustainable models of care and digital transformation)	<ul style="list-style-type: none"> <li>▶ Ensure that all staff understand the Trust's commitment to becoming a net-zero/zero-waste organisation.</li> <li>▶ Support all staff in recognising and fulfilling their responsibilities to help the Trust meet its net-zero/zero-waste commitment.</li> <li>▶ Integrate net-zero/zero-waste actions within and across patient pathways to provide the most effective and efficient sustainable modes of care.</li> <li>▶ Fast-track the benefits of digitalisation to re-engineer processes and shape new services in ways that facilitate net-zero/zero-waste working.</li> </ul>
<b>Purchasing and waste management</b> (incorporating: materials, devices and equipment, medicines, and food and nutrition)	<ul style="list-style-type: none"> <li>▶ Trust suppliers to demonstrate how their approach to tackling the climate emergency supports CUH's net-zero/zero-waste trajectory and timeline.</li> <li>▶ Find and develop waste management practices that maximise post-consumption retained asset value (reuse, repair and recycle).</li> <li>▶ Request that all suppliers specify the reuse, repair and recycling parameters of the goods, materials and equipment they provide.</li> <li>▶ Develop and implement alternatives to the deployment of single-use materials and devices (with a particular focus on non-plastic alternatives).</li> <li>▶ Switch to paper free service delivery wherever possible (administrative printer and copier paper supplies to be 100% recycled content).</li> <li>▶ Recognise and respond to the benefits of locally sourced environmentally sustainable foodstuffs, and other goods or services, wherever possible.</li> <li>▶ Reduce to negligible levels the direct carbon emissions arising from the use of anaesthetic gases and prescription of metered dose inhalers.</li> </ul>

<b>Buildings and building services</b> (incorporating: energy sources, heating, cooling and lighting, process and plug loads, and water)	<ul style="list-style-type: none"> <li>▶ Negate heat losses in existing premises through comprehensive building fabric upgrades.</li> <li>▶ Convert existing gas-fired heating requirements to high efficiency electrically powered technologies (requires low heat loss building fabric).</li> <li>▶ Secure the necessary regional electricity network and local generator capacity to cover the transition to all-electric heating.</li> <li>▶ Ensure that all new build and major retrofit projects meet the NHS net-zero building standards in full.</li> <li>▶ Deploy high efficiency light-emitting diode (LED) lighting units as a rolling replacement programme and for all retrofit and new-build projects.</li> <li>▶ Install roof or wall-mounted solar photovoltaic panels on Trust properties wherever viable.</li> <li>▶ Negotiate and agree power purchase agreements for local and national supplies that directly support and secure additional network capacity</li> <li>▶ Reduce water losses through system flushing and deploy low-flow fittings where possible and safe to do so.</li> </ul>
<b>Travel and transport</b> (incorporating: business miles, commuting, and patient, visitor and commercial access)	<ul style="list-style-type: none"> <li>▶ Travelling on Trust business is to be by the lowest carbon means practically possible.</li> <li>▶ Provision of all new and replacement Trust-owned or leased transport is to be with ultra-low emissions or all-electric vehicles.</li> <li>▶ Support will be provided for active travel routes and means onto campus (e.g. public transport, cycling and walking).</li> <li>▶ Making telemedicine available to patients, where appropriate, to reduce the need to travel to CUH for certain types of appointment.</li> </ul>
<b>Off-setting and carbon storage</b> (incorporating: ill-health prevention and carbon sequestration)	<ul style="list-style-type: none"> <li>▶ Ill-health prevention will be prioritised through more active working with the local community and Integrated Care System.</li> <li>▶ Tree-planting and biodiversity enhancements are encouraged on the hospital campus (where viable and safe).</li> <li>▶ The use of wood as a construction material is encouraged (within the parameters of the fire regulations)</li> </ul>
<b>Adaptation</b> (incorporating resilience to: seasonal over-heating and surface water flooding)	<ul style="list-style-type: none"> <li>▶ Incorporate passive and low-energy measures to reduce vulnerability to summertime over-heating in Trust premises at risk.</li> <li>▶ Deploy measures to negate the surface water flooding risk of service disruption from intense rainfall events.</li> </ul>

## Governance and Reporting

The Green Plan is high on CUH's agenda with progress being reported through the CUH Board of Directors and Management Executive. The specific details of progress again responsibility will be managed by a new Environmental Stewardship Committee and delivered through a suite of Green Plan Working Groups across the six core areas of coverage.

Each of the actions has been allocated appropriate director-level accountability with the responsibility to complete actions founded in the most relevant areas of expertise and delivery. From here wider contributions will be devolved across the organisation as required.



## Data collection

As introduced in Part 1, the measurement of carbon footprints is an inherently imprecise exercise. Baselines are in a state of constant flux due to changing emissions factors, calculation methods and the availability or nature of recorded data. To minimise this variability impact, the following parameters will be applied to try and stabilise the calculations.

- Gas and electricity consumption will be normalised to account for the variability in weather conditions.
- Where considered relevant, reduction metrics will be set against the most relevant parameter of activity within CUH – e.g. business miles against number of staff, desflurane against number of surgical operations, energy saving against area of occupied space.
- The 2019/20 mains grid gas and electricity carbon emissions will be re-baselined against the

most current emission factors prior to assessing the savings achieved so that under-achievement is not covered by the ongoing reductions in the carbon intensity of grid supplies. This position will be applied to calculations for other elements as deemed necessary to ensure the Trust is securing genuine additionality.

- All calculations on savings will be made from the ground-up and expressed in absolute terms so that they do not get 'lost' in the aggregated footprint figures dominated by the imprecision of Scope 3 emissions.
- The inclusion of 'avoided emissions' in terms of CUH developing its role as both a responsible consumer (reuse, repair and recycling) and responsible provider (reducing patient travel miles and supporting healthcare prevention) will be tested as a Scope 4 category.



# Our Action 50 strategic themes

We have created a plan that details 50 distinct actions.

From our experience to date, and from our staff and stakeholder consultations, we have identified three **strategic themes**. Within each theme are three **activity areas** that form the basis of our Action 50 planning.

Because we are talking about a systemic change across CUH's physical infrastructure, organisational processes and behavioural responses, it is important to remember that these three themes (and associated activity areas) will always overlap, to a lesser or greater extent, with each other – everything is connected.

The strategic themes and activity areas provide the framework for planning all the actions over the next three years. It is important to remember that as we move through our Green Plan phases, the interconnections and shared actions will mean we get more and more value and progress from each area of activity: the whole progressively becoming much greater than the sum of its parts.

The following pages provide an overview of the actions under each theme and activity area. The complete prioritised listing (and individual delivery summaries) for all 50 actions can be found in Part 4.



# Our Action 50



As well as delivering our immediate objectives of organisational engagement and a 10% carbon reduction by 2024, the actions below are all essential to ensuring early momentum in achieving our medium-term 50% carbon reduction milestone by 2032 and then continuing to net-zero by 2045.

**Reducing emissions:** progressively cutting the carbon emissions that we have direct control over.

**In our buildings services we will:**

- Reduce energy use intensity through maintenance upgrade programmes.
- Install photovoltaic solar panels wherever we can.
- Review the set-points of all our building services to ensure they are not on unnecessarily.
- Follow the NHS net-zero standard for our new builds and major refurbishments.

**In our transport and travel we will:**

- Electrify our CUH vehicle fleet and support staff purchase of electric vehicles.
- Amend our expenses policy in favour of low-carbon travel.
- Upgrade our cycle parking capacity.
- Support public transport and active travel routes to and from our premises.
- Provide telemedicine services and remote access technology to reduce travel to site.

**In our clinical practice we will:**

- Reduce our nitrous oxide emissions by 50%.
- Reduce our desflurane use to less than 5% of volatile gases used in surgery.
- Prescribe lower carbon inhalers where possible and collect used items.

**Saving resources:** creating value and cutting carbon in how we purchase, use and throwaway.

**To increase reuse-repair-recycle options we will:**

- Specify goods to be reusable, repairable and recyclable wherever possible.
- Expand on-site reuse, repair and recycling facilities.
- Continue to develop waste bin infrastructure to extend recycling rates.
- Set an expectation that suppliers match our net-zero/zero-waste objectives.

**To lower the carbon footprint of our purchased items we will:**

- Reduce our consumption of single-use plastics (esp. PPE and in catering).
- Reduce paper consumption and maximise recycled content.
- Secure electricity supplies from very low-carbon sources.

**In avoiding emissions within our supply chains we will:**

- Set an expectation that suppliers match our net-zero/zero-waste objectives.
- Seek to exercise the Extended Producer Responsibility regulations.
- Work with carbon and waste reducing modern methods of construction.

**Working together:** responding to responsibility across our CUH family and local community.

**In our engagement with staff and stakeholders we will:**

- Provide extensive carbon literacy training and support
- Incorporate net-zero/zero-waste content in all relevant policies and procedures.
- Include net-zero/zero-waste engagement in new starter, new manager and appraisal processes.
- Roll-out net-zero/zero-waste tools for small teams alongside development of a more formal Think Green Champions Network.

**In how we provide leadership and accountability we will:**

- Deliver a 'say' and 'do' approach with management accountability.
- Become a net-zero/zero-waste anchor institution and ICS leader.
- Support ill-health prevention in the local community we serve.
- Bring together collective capabilities across the campus, local council, universities and research centres.

**In how we provide leadership and accountability we will:**

- Bring forward the longer term storage of carbon in materials and tree cover.
- Support ill-health prevention in the local community we serve.

# Part 4: Taking action

Climate Emergency



## CUH Green Plan Actions 2022-24

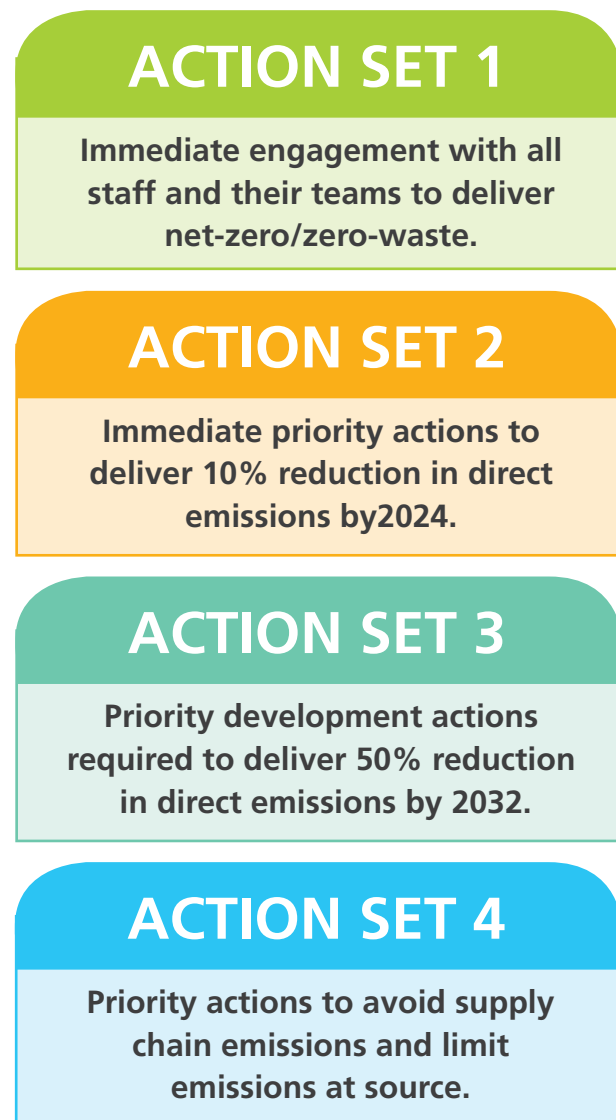
Each of the following four action sets (covering 50 distinct actions) are vital to ensuring early momentum in achieving the 50% carbon reduction milestone by 2032 and then going on to net-zero by 2045. They are set to deliver within three years as it is essential in 2022 that the Trust launches belief in the medium- and longer-term NHS targets. They must be implemented with urgency, in full and with real credibility.

Our Phase 1 Think Green Action 50 plan (2022-24) lays out what will be completed in the first opening period of a ten-year programme. Phase 1 has three core objectives, to:

- enact a rapid 10% reduction in carbon emissions by design by the end of 2024 (from a 2019/20 baseline);
- establish a deeper set of medium-term actions that will provide the springboard to achieving the delivery of a 50% cut in emissions by 2032 (and provide a firm foundation for longer-term decarbonisation to net-zero by 2045);
- embed a comprehensive climate emergency engagement structure across the organisation.

The governance and monitoring regime for the Plan will hold the organisation to account and ensure all three of these objectives are met in full.

**Figure 28: Green Plan action sets – direct engagement, immediate and medium-term**



An overview schematic of the four categories of action is shown in Figure 28. The separation into sets is only based upon the general objectives of each – in terms of delivery on the ground there will be much integration and iteration both within and across the sets.

An indication of scheduling has been applied to each action for each of the three years of the plan duration.

<b>2022</b>	<b>Year of intense focus to carry out and complete the action</b>
<b>2023</b>	<b>Follow-up actions or progressive roll-out period.</b>
<b>2024</b>	<b>No action (may be used if action over-runs or is extended)</b>



## ACTION SET 1

**Immediate engagement with all staff and their teams to deliver net-zero/zero-waste.**

Activity sets: Engagement (EN), Leadership and Accountability (LA) – (13 actions)

### Action Set 1: Immediate Engagement

**EN:1.** Green Plan patient and staff focus groups (p.50)

**EN:2.** Day-in-the-life carbon-finding tool (p.50)

**EN:3.** Carbon Literacy Training (p.51)

**EN:4.** Net-zero/zero-waste e-learning module (p.51)

**EN:5.** Net-zero/zero-waste reference in all policies/procedures (p.51)

**EN:6.** Clean Air Hospital Framework (p.52)

**EN:7.** Calendar of events/promotions (p.52)

**EN:8.** Formalise Think Green champions' network (p.52)

**LA:1.** New starter/new manager net-zero/zero-waste inductions (p.53)

**LA:2.** Net-zero/zero-waste progress in management level ADRs (p.53)

**LA:3.** Think Green Impact for small teams (p.53)

**LA:4.** Net-zero/zero-waste anchor institution (p.54)

**LA:5.** Cambridgeshire & Peterborough ICS Green Planning (p.54)

## ACTION SET 2

**Immediate priority actions to deliver 10% reduction in direct emissions by 2024.**

Activity sets: Building Services (BS), Travel and Transport (TT), Clinical Practice (CP), Purchased Items (PI) – (15 actions)

### Action Set 2: Immediate Priority (Scopes 1 and 2)

**BS:1.** Backlog maintenance net-zero/zero-waste options (p.55)

**BS:2.** LED lighting upgrades (p.55)

**BS:3.** On-site photovoltaic solar panels (p.56)

**BS:4.** Automated energy set-points for building services (p.56)

**BS:5.** Manual energy set-points for building services (p.56)

**BS:6.** Out-of-hours lights and equipment switch-off check (p.57)

**BS:7.** Deployment of dedicated energy saving fund (p.57)

**TT:1.** Electric vehicle charging (p.57)

**TT:2.** Ultra-low/zero emissions vehicle fleet (p.58)

**TT:3.** Travel expenses for net-zero (p.58)

**TT:4.** Lease car policy for ultra-low/zero emissions vehicles (p.59)

**CP:1.** Negate any nitrous oxide waste in distribution (p.59)

**CP:2.** Changes in clinical practice to reduce desflurane use (p.59)

**CP:3.** Changes in clinical practice to minimise nitrous losses (p.60)

**PI:1.** Power purchase from Babraham photovoltaic solar array (p.60)

## ACTION SET 3

**Priority development actions required to deliver 50% reduction in direct emissions by 2032.**

Activity sets: Building Services (BS), Travel and Transport (TT), Clinical Practice (CP), Purchased Items (PI) – (11 actions)

### Action Set 3: Priority Development (Scopes 1, 2 and 3)

**BS:8.** Towards net-zero new build and refurbishment (p.61)

**TT:5.** Cycle parking (p.61)

**TT:6.** Cambridge South Station (p.62)

**TT:7.** Sustainable travel routes (p.62)

**TT:8.** Promote salary sacrifice ultra-low/zero emission vehicles (p.62)

**CP:4.** Anaesthetic gas scavenging and containment (p.63)

**CP:5.** Alternatives to metered-dose inhalers (p.63)

**PI:2.** Reducing paper consumption (p.64)

**PI:3.** Swapping out of single-use cups (p.64)

**PI:4.** Develop options for corporate renewable power purchase (p.65)

**PI:5.** Net-zero/zero-waste input to catering and cleaning services (p.65)

## ACTION SET 4

**Priority actions to avoid supply chain emissions and limit emissions at source.**

Activity sets: Reuse-Repair-Recycle (RR), Avoided Emissions (AE), Locked-in and Off-set Emissions (LO) – (11 actions)

### Action Set 4: Priority Action (Scope 4/out of scope)

**RR:1.** Reduce clinical plastics/PPE/curtains waste (p.66)

**RR:2.** Allocated space to support reuse/recycling (p.66)

**RR:3.** Reusable sharps bins (p.67)

**AE:1.** Exercise Extended Producer Responsibility (EPR) (p.67)

**AE:2.** Supplier specifications to include net-zero/zero-waste by design (p.67)

**AE:3.** Telemedicine to reduce patient travel (p.68)

**AE:4.** Carbon and waste reducing Modern Methods of Construction (p.68)

**LO:1.** Incinerator ash recycling for concrete manufacture (p.68)

**LO:2.** Carbon storage via building materials: timber construction (p.69)

**LO:3.** Tree-planting and biodiversity (p.69)

**LO:4.** Off/In-setting by materially supporting ill-health prevention (p.69)

# Action Set 1

**Immediate priority actions to engage all staff across the organisation in, not only, implementing Green Plan actions but also: growing them, adding to them and following them through into urgent delivery and the monitoring of outcomes.**

**Action Set 1** (13 items) focuses on securing full engagement (EN) and leadership and accountability (LA) across the entire organisation: why net-zero is so important, when it needs to be delivered, what needs to be achieved and then, most importantly, how it can be achieved, by whom and where.

This is essential to rapidly deliver the following three more material action sets. It is also foundational to the medium-term drive to a 50% reduction by 2032 and ultimately the long-term goal of net-zero by 2045.

At the centre of the deliverables for this engagement is the breaking down of resistance or inertia in the current linear economy approach – especially fossil fuels and other potent sources relevant to CUH such as concrete, anaesthetic gases and refrigerants.

An important part of the breaking down of this resistance comes with the co-benefits of a transition to a renewably powered circular economy - such as improved air quality, better buildings, a lowering of climate anxiety and reduced costs in either the short, medium or longer term.

The thirteen actions are divided into 4 sub-sets: from 'SHOW' (illustrating the challenge and issues of change), to 'INFORM' (setting expectations for change), to 'ACT' (creating tangible change), to 'SHARE' (displaying change).

Show: Engaging to illustrate the extent, scope and immediacy of the required carbon reduction

## Engagement (EN)

### EN:1. Green Plan patient and staff focus groups

Objective	Build on Green Plan preparation patient and staff focus group sessions with regular review sessions to provide updates and receive views.		
Steps and milestones	Schedule opening review session post-adoption of Green Plan and then subsequent update/views sessions every six months.		
Delivery Team	Accountable: Head of Corporate Support and Sustainability Responsible: Energy and Sustainability Manager Contributors: Patient Experience Team; Corporate Communications Team		
Resources	Delivery Team's time		
Monitor	Attendance levels		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

### EN:2. Day-in-the-life carbon-finding tool

Objective	Provide an online 'day-in-the-life' tool to help staff understand and record where the carbon emissions exist and can be countered throughout their daily activities working at CUH.		
Steps and milestones	Draw up brief/specification for the tool. Work with external partners to procure a provider. Create beta version, trial, finalise and roll-out.		
Delivery Team	Accountable: Head of Corporate Support and Sustainability Responsible: Energy & Sustainability Manager Contributors: Sustainability Manager, Staff Focus Group, UoC ThinkLab team.		
Resources	Delivery Team's time, partnership funding for tool development.		
Monitor	Tool usage take-up/numbers		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**EN:3. Carbon Literacy Training**

Objective	Roll-out formal (2 x half-day) carbon literacy training sessions ( <a href="https://carbonliteracy.com/">https://carbonliteracy.com/</a> ) for management teams across the Trust in order to highlight the issues and most importantly reinforce the climate emergency actions that can and should be delivered by all teams across the campus.		
Steps and milestones	Review recently completed pilot with Procurement colleagues to refine delivery process moving forward. Advertise availability and book and deliver sessions accordingly.		
Delivery Team	Accountable: Management Executive Responsible: Head of Corporate Support and Sustainability Contributors: Energy & Sustainability Manager, Energy and Sustainability Team, Carbon Literacy Project representative.		
Resources	Delivery Team's time, formal certification £10/participant		
Monitor	Number taking-up training offer and actions subsequently committed to and impact of delivery.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**INFORM:** Engaging to establish staff expectations in delivering CUH's net-zero/zero-waste objectives

**EN:4. Net-zero/zero-waste e-learning module**

Objective	Provide formal e-learning module on how staff can engage, support and deliver on the net-zero/zero-waste agenda at CUH. This would be a practical and permanent form of reference that can be regularly updated as required.		
Steps and milestones	Draft module, present for inclusion on DOT as essential training for all staff. Finalise and release.		
Delivery Team	Accountable: Management Executive Responsible: Head of Corporate Support and Sustainability Contributors: Energy & Sustainability Manager, Energy & Sustainability Team, L&D E-Learning Manager, LMS Manager, MTAG.		
Resources	Delivery Team's time		
Monitor	Numbers of staff who have completed the module.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**EN:5. Net-zero/zero-waste reference in all policies/procedures**

Objective	All relevant Merlin policies and procedures contain the necessary practical steps to support the Trust's net-zero/zero-waste commitments.		
Steps and milestones	Review all Merlin policies and procedures for practical options to include content that supports delivery of net-zero/zero-waste. Where appropriate, forward proposed amendments to the document owner/author – either for immediate change or change at next full review point. Request reminders from the Merlin Document Team for documents that are coming up for review. Draft formal and practical environmental impact assessment guidance for all policy and procedure authors to ensure that net-zero/zero-waste implications are fully accounted for.		
Delivery Team	Accountable: Director of Corporate Affairs, Chief Nurse Responsible: Energy & Sustainability Manager Contributors: Merlin Document Team, all Merlin document owners/authors.		
Resources	Delivery Team's time		
Monitor	Number of documents reviewed, number of documents amended, number of documents yet to be reviewed.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## EN:6. Clean Air Hospital Framework

Objective	Sign-up to become a Clean Air Hospital and achieve a minimum of the Framework's 'Getting There' level by the end of the Plan period.		
Steps and milestones	Review current baseline position under the seven categories of the Framework (Travel, Procurement, Design & Construction, Energy Generation, Local Air Quality, Communication and Training, Outreach and Leadership). Target specific actions that will secure a minimum of a 50% points score. Draw up delivery schedule (there will be significant overlap with other Green Plan actions). Implement. Review.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability; Energy & Sustainability Manager; Sustainability Manager Contributors: Energy & Sustainability Team, Sustainable Respiratory Action MDT.		
Resources	Delivery Team's Time, other resources will be subject to the needs of the targeted actions to achieve required scoring.		
Monitor	6-monthly review of progress on actions and scoring levels achieved.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**ACT:** Engaging to create material and tangible net-zero/zero-waste outcomes

## EN:7. Calendar of events/promotions

Objective	To provide six relevant national or regional calendar events as rallying points to raise interest and activity rates in relation to specific Green Plan actions.		
Steps and milestones	Each year select six key relevant events (ideally one every 8 weeks). Prepare relevant publicity material accordingly in run-up to each event and most appropriate and practical means of engagement. Deliver in specific date. Reflect on outcomes and learning as soon as possible after the event.		
Delivery Team	Accountable: Head of Corporate Support and Sustainability Responsible: Sustainability Manager Contributors: Comms Team, Think Green Champions Network, Energy and Sustainability Team, external providers as available.		
Resources	Small comms material budget. Delivery Team's time.		
Monitor	Participant numbers, material outcomes		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## EN:8. Formalise Think Green champions network

Objective	To provide a documented network of volunteer Think Green champions across the Trust (recording work area, skills, interests etc.). The network would provide a foundation for engagement, events and ongoing expansion of staff committed to helping the organisation deliver Green Plan actions.		
Steps and milestones	Review and refresh existing membership database. Draft and release comms to encourage new members to join. Run an opening event with high profile speakers.		
Delivery Team	Accountable: Head of Corporate Support and Sustainability; Responsible: Energy & Sustainability Manager, Sustainability Manager Contributors: Comms Team, Energy & Sustainability Team		
Resources	Small engagement budget. Delivery Team's time.		
Monitor	Membership numbers, event participation, newsletters.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>



## LEADERSHIP AND ACCOUNTABILITY (LA)

### LA:1. New starter/new manager net-zero/zero-waste inductions

Objective	Ensure that all new starters and those starting management roles are fully aware of the net-zero/zero-waste agenda, what the Trust is doing to deliver against it and, most importantly, what we need them to do and what they can do to support this.		
Steps and milestones	Draft appropriate content for inclusion in job application and new starter packs. Review current induction information for new starters and adjust accordingly to reflect Trust's Green Plan commitments. Review current COVID-19 adjusted approach to New Managers' Orientation training and draft adjustments accordingly. Provide Think Green Champion connection option for those interested. Follow-up with all new managers re. progress/obstacles.		
Delivery Team	Accountable: Director of Workforce Responsible: Head of Corporate Support and Sustainability Contributors: Energy & Sustainability Manager, L&D Trainer and Facilitator, Leadership & OD Development Team		
Resources	Delivery Team's time		
Monitor	Number of staff and managers taken through the induction/new starter material. Numbers joining Think Green network, progress on New Managers.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

### LA:2. Net-zero/zero-waste progress in management level Annual Development Reviews (ADRs)

Objective	Senior and local area managers required to describe the actions they have taken through their teams to support the delivery of Green Plan commitments as part of their formal annual appraisals (ADRs).		
Steps and milestones	Draft potential ADR content for managers to set goals and reflect on delivery relating to supporting net-zero/zero-waste activity within their teams.		
Delivery Team	Accountable: Director of Workforce Responsible: Energy & Sustainability Manager Contributors: HR ADR development team		
Resources	Delivery Team's time		
Monitor	Feedback from managers post-ADR.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

### LA:3. Think Green Impact for small teams

Objective	Minimum of 25% of Trust staff directly delivering or directly influenced by their local teams signing up to the rolling Think Green Impact (TGI) programme.		
Steps and milestones	Update existing TGI online workbook to fully reflect and support delivery of Green Plan actions. Launch and promote access to the new workbook. Include as specific reference in all ADRs. Promote take-up in all relevant induction, training and e-learning materials. Run quarterly workshops to support and encourage take-up and delivery. Review active workbooks for successes and obstacles – share former; resolve and share latter. Annual review of levels completed and presentation of TGI Awards accordingly.		
Delivery Team	Accountable: Management Executive. Responsible: Head of Corporate Support and Sustainability. Contributors: Energy & Sustainability Manager, Sustainability Manager, Comms Team, all local area managers		
Resources	Annual fee for online programme access from Energy and sustainability budget. Delivery Team's time; participant teams' time.		
Monitor	Number of teams participating, actions completed, actions that multiple teams are struggling with, Awards presented.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**LA:4. Net-zero/zero-waste anchor institution**

Objective	Use CUH's anchor institution role to share, extend and add value to Green Actions.		
Steps and milestones	Share/present CUH Green Plan actions with relevant local authority, community group and commercial partners through the mechanism of the Cambridge Climate Change Charter, and any other suitable channels, to positively and beneficially contribute to the health and wellbeing of local people.		
Delivery Team	Accountable: Director of Strategy and Major Projects. Responsible: Head of Corporate Support and Sustainability. Contributors: Energy & Sustainability Manager, Head of External Affairs		
Resources	Delivery Team's Time		
Monitor	Development of community partnership contacts and relationships.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**LA:5. Cambridgeshire and Peterborough ICS Green Planning**

Objective	To facilitate leadership, promotion and support for net-zero and wider environmental sustainability activity across the Cambridgeshire and Peterborough Integrated Care System (ICS)		
Steps and milestones	Establish positive and active position within the ICS Greener NHS Delivery Group. Provide material support and facilitation in drawing up and delivering the wider ICS Green Plan.		
Delivery Team	Accountable: Director of Strategy and Major Projects Responsible: Energy and Sustainability Manager Contributors: Cambridgeshire and Peterborough ICS Board, East of England Regional Greener NHS Team, East of England Regional Sustainability Network.		
Resources	ICS funds as available, East of England Greener NHS funds as available.		
Monitor	Co-ordinated and shared working in delivery of Greener NHS/net-zero objectives across the Cambridgeshire and Peterborough ICS sub-region.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## Action Set 2

### Immediate priority actions to reduce CUH's NHS Carbon Footprint Scope 1 and Scope 2 emissions by at least 10% in 24 months

**Action Set 2** (15 items) mobilises immediate measures to deliver a fully verifiable minimum 10% carbon savings from the Trust's Scope 1 and 2 emissions by direct design (from a 2019/20 baseline) by the end of March 2024. The actions cover both physical infrastructure and organisational process.

By 'direct design' we mean that the savings will be the outcome of deliberate planned actions and not as an indirect and fortunate outcome of unrelated workstreams, or, where remote carbon savings might be anticipated but cannot be verified, or, are simply down to a change in nationally set carbon intensity factors.

## Building Services (BS)

### Physical Infrastructure Changes

#### BS:1. Backlog maintenance net-zero/zero-waste options

Objective	All projects in the Trust's ongoing/rolling programme of backlog maintenance (including capital projects overlap) is to include a full net-zero carbon options assessment. Immediate and optimal net-zero options to be taken wherever possible in upgrade/replacement of existing plant/fabric/ systems. Where this cannot be immediately achieved then a clear plan to ensure that it is delivered in line with NHS carbon reduction targets must be logged and scheduled as a future commitment (sufficient net-zero detail must be worked up to facilitate ready input to grant/funding application as/when available).		
Steps and milestones	Annual back-log maintenance plan assessment; specific inclusion of carbon reduction options with a view towards net-zero objective; source funding as required; detailed feasibility and specification to OBC/FBC; delivery.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Capital Projects. Contributors: Programme Manager – Engineering, Energy & Sustainability Team; major and minor works Capital Projects teams; Operational Engineering and Maintenance teams – mechanical and electrical.		
Resources	Backlog Maintenance budget, revolving Salix budget, invest-to-save capital spend application, grant funding as available.		
Monitor	Log planned and outcome energy use intensity reductions and all associated carbon savings (operational and embedded) for all backlog maintenance (or over-lapping capital) projects.		
Scheduling	2022	2023	2024

#### BS:2. LED lighting upgrades

Objective	Extend rolling programme of LED lighting upgrades by a minimum of an additional 2,000 fittings (pushing total site coverage to 50%).		
Steps and milestones	Survey, specify and implement through current rolling upgrade programme under existing call-off contract.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Capital Projects, Head of Corporate Support and Sustainability. Contributors: Energy & Sustainability Manager, Sustainable Energy Engineer, Energy Manager; Operations Engineering and Electrical Team; major and minor works Capital Projects teams.		
Resources	Salix revolving fund budget; external grant funding as/if available.		
Monitor	Before and after meter readings; Salix compliance, quarterly review and Annual Report, annual checks for longevity/replacement under warranty.		
Scheduling	2022	2023	2024

**BS:3. On-site photovoltaic solar panels**

Objective	Increase current roof-mounted solar PV capacity by at least 50% (min 50kWp) with DC link to building plant, battery storage and integrated power electronics as/if viable.		
Steps and milestones	Review solar PV roof survey for optimal locations aligned with suitable plant locations. Procure Arriba Tech or similar solution to provide DC connectivity with battery storage.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Head of Capital Planning and Development. Contributors: Energy & Sustainability Manager / Programme Manager – Engineering, Sustainable Energy Engineer; Operations Engineering and Electrical Team; major and minor works Capital Projects teams		
Resources	Salix revolving fund budget; external grant funding as/if available; backlog maintenance budget if projects align; Capital Projects budgets if projects align.		
Monitor	Before and after meter readings; Salix compliance if applicable, quarterly review and Annual Report.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Organisational Process Change****BS:4. Automated energy set-points for building services**

Objective	To ensure that all building services plant and equipment controlled by the Trust's Building Management System (BMS) are operating to timer and output parameters that meet the demands of the local area they are serving at the lowest possible energy consumption.		
Steps and milestones	Extract listing of all BMS controlled plant/equipment. Order from highest to lowest energy consumption and review settings accordingly against known local area requirements or up-to-date room data sheets. Units found switched to 'in-hand' should be returned to BMS control. Set-backs, dead-bands and timed on/off parameters should be reset where necessary to meet required local conditions.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering. Contributors: Head of Estates Engineering Services, BMS Manager and BMS Engineer, Sustainable Energy Engineer, Energy Manager, Operational Engineering and Maintenance Teams, local embedded contract teams, local area managers affected.		
Resources	Within CE&FM BMS operational budget, additional staff resourcing may be available from Energy and Sustainability team if required.		
Monitor	BMS monthly reports, log of changes and calculated changes.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**BS:5. Manual energy set-points for building services**

Objective	To ensure that all building services plant and equipment not under the remote control of the BMS are using individual on-board manual settings where available to meet the demands of the local area they are serving at the lowest possible energy consumption.		
Steps and milestones	Collate listing of all HVAC units not under BMS control. Ascertain from known specifications whether units have on-board manual control settings for setbacks, dead-bands etc. (if unknown then local inspection will be required). Check and adjust current settings where possible to meet local needs with minimum energy consumption. Log findings and any changes made.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering. Contributors: Head of Estates Engineering Services, Operational Maintenance Teams, Sustainable Energy Engineer, Energy Manager, Operational Engineering Teams, local area managers affected.		
Resources	Within E&F Operational Maintenance budget and resources.		
Monitor	Log of changes and calculated benefits.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**BS:6. Out-of-hours lights and equipment switch-off check**

Objective	To ensure that no user controlled electrical equipment (lighting, plug-load and HVAC) is left powered 'on' when not required and/or outside working hours.		
Steps and milestones	Run a mid-week and weekend premises survey to provide indicative assessment of the issue. Run awareness-raising programme over full-set of internal comms channels, including direct request to cleaning teams. Re-survey for take-up and progress. Request in-house security to include checks and reporting of problem areas as a standard part of their overnight rounds. Follow-up in repeating areas via local area management and domestic cleaning management team.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability. Contributors: Energy & Sustainability Manager, Energy Manager, In-house Security, Medirest Supervisors		
Resources	Within in existing staff resource base.		
Monitor	6-monthly site assessments.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**BS:7. Deployment of dedicated energy saving fund**

Objective	To ensure that the annual revolving Salix fund budget (£220k) is deployed to bring forward an ongoing stream of energy-saving projects. These projects are designed to deliver permanent cost savings greater than the investment applied and will be prioritised to secure the maximum Scope 1 and 2 carbon saving impacts.		
Steps and milestones	Annual cycle: review of potential projects to secure at least minimum annual spend required by Salix to sustain funding. Outline compliance tool check. Procurement as required. Finalise compliance. Implementation / installation. Commission. £100k currently allocated to rolling programme of LED lighting upgrade projects.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability, Energy & Sustainability Manager Contributors: Sustainable Energy Engineer, Energy Manager, Operational Electrical and Mechanical Engineering Teams, major and minor works Capital Projects teams, local area managers.		
Resources	£220k annual Salix fund budget.		
Monitor	External compliance checks and auditing provided by Salix. 6 monthly reporting to Net-Zero Steering Group.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Travel and Transport (TT)****Physical Infrastructure Changes****TT:1. Electric vehicle charging**

Objective	Support transition to plug-in hybrid (ultra-low emissions) and all electric lease vehicles for business use. Sufficient on-site charging capacity is an essential part of this process to significantly reduce carbon emissions (and pollution) from CUH fleet vehicles.		
Steps and milestones	Allocate 30-40 charging point parking bays across CUH campus (ensuring access to and capacity of HV network). Determine management, monitoring and cross-charging regime. Procure supply/install contract. Installation and commissioning. Monitoring of use.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability, Head of Support Services Contributors: Energy & Sustainability Manager, Sustainability Manager, Support Services Manager, Head of Trust Security, Operational Electrical Engineering and Maintenance Teams		
Resources	Possible grant funding or packaged supply/install/management contract. Electrical supply works from internal budgets. CUH capital investment could be supported as invest-to-save business case against cost of greyfleet miles.		
Monitor	Integrated informatics to provide full usage data.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>



**TT:2. Ultra-low/zero emissions vehicle fleet**

Objective	Once EV charging infrastructure in place, all CUH lease vehicles (cars, vans and minibuses) to be switched under existing or new contracts for ultra-low emissions (<75g/km) or all-electric vehicles. Externally provided aspects of fleet provision (e.g. pathology courier service, patient transport and taxi service) progressively transition to ULEV/EV provision as contracts are retendered. Extend use of electric cycle-share scheme for short-hop business trips.		
Steps and milestones	Currently business pool-car fleet averages 100g/km and all other lease vehicles significantly in excess of this. Review options to change to ULEV/EV within existing contracts. Commit to ULEV/EV transition through contract retenders. Ensure sufficient on-site EV charging infrastructure in place (anticipate ULEV as plug-in hybrid design). Exchange all existing vehicles for ULEV/EV models (under existing or retendered contracts). Negotiate cycle-share business usage account with current city provider		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability, Head of Support Services Contributors: Energy & Sustainability Manager, Sustainability Manager, relevant local area managers, vehicle users.		
Resources	Within existing lease car budgets – anticipate increase in costs so business will be required.		
Monitor	Monthly mileage reports with carbon saving set against existing vehicles' benchmark.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Organisational Process Change****TT:3. Travel expenses for net-zero**

Objective	To ensure that the CUH business travel expenses policy specifically commits staff to using CUH pool cars over their own personal vehicles (greyfleet) for travelling on Trust business thereby assuring a controlled reduction in the carbon footprint of business travel. ULEV/EV pool car fleet expansion to take up required capacity from transition away from greyfleet.		
Steps and milestones	Review and re-draft existing travel-related sections of CUH Expenses Policy so that personally owned vehicles are only used if all other lower carbon (and typically lower cost) options have been exhausted – with a focus on using the CUH business carpool vehicles (even if not yet upgraded to ULEV/EV models). Draft new guidance for all travel expense approving managers to assist them in ensuring that all their team members are travelling on Trust business by the lowest carbon means possible. This will not only include the preferred option of lower emissions/lower cost pool cars over greyfleet usage but will also cover direction of air travel and public transport decision-making. Take the revised policy (and supplemental guidance) through policy consultation and approval process. Adopt new policy and run high profile and positive comms programme to roll-out and support the changes.		
Delivery Team	Accountable: Chief Finance Officer Responsible: Deputy Director of Finance, Sustainability Manager Contributors: Workforce/HR, Staff Expenses team/payroll, local expenses approving managers.		
Resources	Ongoing staff time – cost savings to Trust of using business pool-car fleet over greyfleet vehicles can be used to support transition if/as required.		
Monitor	Lease car mileages, EASY expenses system monthly reporting on greyfleet claims, records of flight bookings and public transport expense claims.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**TT:4. Lease car policy for ultra-low/zero emissions vehicles**

Objective	CUH teams and individuals only able to procure UELV/EV vehicles under CUH business lease or CUH business purchase arrangements.		
Steps and milestones	Once on-site EV charging infrastructure in place, new policy implemented to ensure that all CUH procured vehicles are either ULEV or EV models.		
Delivery Team	Accountable: Director of Workforce Responsible: Head of Hotel Services Contributors: Sustainability Manager, Workforce/HR, Support Services Manager, Procurement Manager overseeing CUH vehicle purchase.		
Resources	Business case savings arising from reduced costs of ULEV/EV over petrol/diesel vehicles. Staff time to draft, consult on and secure approval for new policy.		
Monitor	6-monthly review of register of CUH leased vehicles.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Clinical Practice (CP)****Physical Infrastructure Changes****CP:1. Negate any nitrous oxide waste in distribution**

Objective	Identify and negate any nitrous oxide distribution and delivery losses to atmosphere.		
Steps and milestones	Review current known and estimated levels of pure nitrous oxide and Entonox consumption (including return of only partially empty cylinders) against purchased volumes (bulk and cylinders) to ascertain extent of any manifold or piped distribution losses.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Capital Projects, Head of Corporate Support and Sustainability. Contributors: Head of Estates Engineering Services, Clinical voluntary anaesthetic lead / Senior Mechanical Engineer, Shift Facilities Managers, clinical anaesthetic leads from Delivery/Birthing Unit, ED, Plastics and paediatric surgery.		
Resources	Multi-disciplinary team research and analysis time		
Monitor	Quarterly reviews of purchased volumes against estimated clinical consumption volumes.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Organisational Process Change****CP:2. Changes in clinical practice to reduce desflurane use**

Objective	To cut desflurane use to less than 10% of total anaesthetic gas consumption (typically sevoflurane)		
Steps and milestones	Ascertain current levels and trends in consumption of desflurane as an anaesthetic gas over sevoflurane (and potentially isoflurane). Review internal clinical rationale for desflurane and whether an alternative or lower volume could be used. Implement changes subject to clinical support and approval.		
Delivery Team	Accountable: Medical Director, Chief Operating Officer. Responsible: Operations Manager – Perioperative Care Services. Contributors: Clinical anaesthetic leads, multi-disciplinary clinical, pharmacy and procurement team.		
Resources	Clinical and pharmacy team time to baseline current consumption levels		
Monitor	Quarterly reviews of anaesthetic gas usage.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**CP:3. Changes in clinical practice to minimise nitrous losses**

Objective	Fully negate potential for nitrous oxide losses from manifold/piped distribution systems by switching fully to supply by individual mobile cylinders.		
Steps and milestones	Review with all clinical teams using piped nitrous oxide if they can function as effectively with mobile individual cylinders – this relates not only to the clinical aspects of access to the cylinder supply but also the logistics and space requirements that come with it. Assess implications for Portering. If there is sufficient clinical support and Portering capacity, trial the use of cylinders only and then replicate learning in other areas as seems fit/appropriate.		
Delivery Team	Accountable: Chief Operating Officer Responsible: Clinical anaesthetics lead assigned to delivery, plus Portering and Logistics Manager Contributors: All anaesthetic leads in areas where nitrous is used in piped format; Estates and Facilities Operational Medical gases team; Energy and Sustainability Manager.		
Resources	There is a potential uplift in costs in moving from bulk manifold piped supplies to individual mobile cylinders.		
Monitor	Quarterly review of usage of nitrous oxide.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Purchased Items (PI)****Physical Infrastructure Changes****PI:1. Power purchase from Babraham photovoltaic solar array**

Objective	Secure private-wire power purchase agreement (PPA) for up to 2.5MW surplus photovoltaic (PV) solar power from the County Council's scheme to install a PV panel array above the vehicle spaces (with EV charging points) at the nearby Babraham Park & Ride site.		
Steps and milestones	MoU in place. Technical viability confirmed. Business case confirmed: regulatory compliance, two-way kWh unit pricing/invoicing mechanism. Finalise draft PPA. Agree construction contract details and RAMS. Sign PPA, install hardware and connectivity (private wire connection already laid), commission. System scheduled to be fully operational by end of 2022/23.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Head of Capital Planning and Development. Contributors: Energy & Sustainability Manager, Energy Manager, Operational Electrical Engineering Teams, major and minor works Capital Projects teams, CUH HV AE, legal advisors, PPA advisors, works contract advisors, County Council and associated sub-contractors.		
Resources	All capital costs covered by County Council. Delivery Team's time and due diligence /contract/ technical external professional advice. PV power to be supplied at agreed margin below mains grid. Operational power to P&R site when PV not generating to be supplied by CUH at standard partner recharge rate.		
Monitor	Weekly project development meetings. Once operational, reporting via quarterly re-charging process.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## Action Set 3

### Priority actions required to secure 50% total carbon footprint reduction by 2032

**Action Set 3** (11 items) covers the same elements as Set 2 but should be seen as those that are priority medium- to longer-term development projects covering all direct and indirect emissions. These are

essential to building towards the 2032 50% target. Some fall within the reduction of less verifiable product-embedded Scope 3 emissions.

## Building Services (BS)

### Physical Infrastructure Changes

#### BS:8. Towards net-zero new build and refurbishment

Objective	Ensure that the proposed new Cambridge Children's Hospital (CCH), proposed new Cambridge Cancer Research Hospital (CCRH) and all other Addenbrooke's 3 new build projects are fully aligned and delivering against all elements of the new NHS Net-zero Carbon Standard (construction, embedded, operational and monitoring). Should major retrofit projects for existing premises come forward then these too should comply with the Standard.		
Steps and milestones	Over the period of this plan the detailed building designs, full business cases, and construction procurement process for both CCH and CCRH are anticipated to fully progress and conclude – At each RIBA stage it is essential that compliance with the Net-zero Standard is assessed and sustained. The formal deployment of Passivhaus and BREEAM Outstanding and Soft Landings standards will actively support this process.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering Contributors: Energy and Sustainability Manager, Major Projects Teams; Project Boards and Committees; Deputy Director of E&F – Engineering; commissioned design consultancy teams; external partners.		
Resources	Individual build project capital budgets		
Monitor	RIBA stage reporting; Project Board progress reports, post-occupancy evaluation, soft-landings framework.		
Scheduling	2022	2023	2024

## Travel and Transport (TT)

### Physical Infrastructure Changes

#### TT:5. Cycle parking

Objective	Ensure cycling is encouraged through the provision of a sufficient number of quality cycle parking spaces on CUH campus for staff, patients, and visitors - optimising location and security against site constraints (current capacity approx. 2,200 spaces). Increase to 2,500 by end of 2024.		
Steps and milestones	Work-up and finalise existing cycle-parking capacity uplift plan (new locations and increasing numbers in existing locations). Assemble business case, secure funding, procure and install.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability Contributors: Sustainability Manager, Energy & Sustainability Manager, site partners (esp. UoC), Head of Trust Security, BUGWAG.		
Resources	CUH capital funding with CBC/partner contributions, including Capital Program.		
Monitor	Monthly usage count, staff travel survey.		
Scheduling	2022	2023	2024

### TT:6. Cambridge South Station

Objective	To provide continuing support and pressure for the construction and opening of the new Cambridge South Station (located on the CBC) in 2025. Once open it will provide a significant boost to low-carbon access to CUH for patients, visitors and staff.		
Steps and milestones	Continuing active support through the planning design and construction phases to ensure that the 2025 opening schedule is met and that the needs of CUH patients, visitors, and staff needs are fully accounted for.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability Contributors: Sustainability Manager, CBC partners		
Resources	Ongoing staff time.		
Monitor	Quarterly progress reports.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

### TT:7. Sustainable travel routes

Objective	To deliver improvements and newly developed sustainable/active access routes onto and across the CBC that encourage and facilitate low carbon travel – i.e. buses, cycling and walking.		
Steps and milestones	Actively support and seek to optimise all Greater Cambridge Partnership (GCP) corridor schemes that stand to improve public transport and active travel to and from CUH for staff, visitors, and patients.		
Delivery Team	Accountable: Director of Capital, Estates & Facilities Management Responsible: Head of Corporate Support and Sustainability; Contributors: Sustainability Manager, CBC partners		
Resources	Ongoing staff time		
Monitor	GCP reporting, CBC Travel and Transport Working Group.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## Organisational Process Change

### TT:8. Promote salary sacrifice ultra-low/zero emission vehicles

Objective	Maximise take-up of ULEV/EV vehicles through staff making use of the CUH Advantage salary sacrifice purchasing scheme.		
Steps and milestones	Agree with Advantage the high profile promotion of the direct benefits (running costs) and co-benefits (pollution, health, tackling climate emergency) of ULEV/EV ownership. Regular promotional communications and access to test vehicles.		
Delivery Team	Accountable: Director of Workforce Responsible: Manager of Advantage Scheme Contributors: Sustainability Manager, Advantage vehicle provider		
Resources	Minimal – comms changes only.		
Monitor	6-monthly review of vehicle type take-up under the scheme.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>



## Clinical Practice (CP)

### Physical Infrastructure Changes

#### CP:4. Anaesthetic gas scavenging and containment

Objective	Take the final mechanical steps in driving down the release of anaesthetic gases (specifically desflurane, and to a much lesser extent sevoflurane, as well as nitrous oxide) into the atmosphere to as close to zero as is practically possible through the use of scavenging and containment equipment.		
Steps and milestones	Initially review all procedures that use these gases to determine the extent that alternatives may be deployed and to identify and counter any losses through practice and physical delivery. If, following these actions, emissions to atmosphere remain significant then experience with scavenging and containment at other hospitals should be assessed with a view to trialling devices for desflurane and nitrous oxide.		
Delivery Team	Accountable: Medical Director Responsible: Operations Manager – Perioperative Care Services Contributors: Clinical voluntary anaesthetic lead, multi-disciplinary clinical, pharmacy and estates team.		
Resources	Initially staff time to assess current position and determine trial course of action. Business case to be developed to procure necessary trial equipment as/if deemed materially viable.		
Monitor	Compare purchased volumes against captured volumes.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

### Organisational Process Change

#### CP:5. Alternatives to metered-dose inhalers (MDIs)

Objective	Reduce the prescription of MDIs by a minimum of 10%, using alternative dry-powder (DPIs) or other low-carbon equivalents.		
Steps and milestones	Baseline 2019/20 supply of MDIs. Review CUH prescription parameters and guidance for MDIs against regional and national guidance. Determine room for manoeuvre to reduce MDI use and steps required to deliver a minimum 10% over the Plan period. Trial/implement accordingly. Determine unit costs, and business case as required, to deliver change.		
Delivery Team	Accountable: Medical Director Responsible: Lead respiratory consultant Contributors: Clinical respiratory lead assigned to project, multi-disciplinary clinical, pharmacy and procurement team; CCG and ICS guidance/support from the sub-region.		
Resources	Delivery Team's time, business case required for any cost uplift.		
Monitor	Quarterly review of MDI prescription numbers.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## Purchased Items (PI)

### Physical Infrastructure Changes

#### PI:2. Reducing paper consumption

Objective	Switch to electronic records and 100% recycled paper where there is no alternative.
Steps and milestones	Assess and quantify all areas where paper is used and review alternative options. Immediate steps: 1. Trial 100% recycled content from a range of suppliers in three high usage/high volume locations. IT support to assess cause of any resultant paper feed/jam issues. Select products that perform to current standards within all printers and where paper finish and print quality is acceptable (if 100% recycled content proves unviable then the next lower percentage content products should be considered). Of these, identify best value in terms of cost and roll-out in a carefully phased manner across all locations (phasing allowing for easier reversal should unforeseen problems arise). Following full roll-out, only this paper type should be available on Trust procurement lists. 2. Review payroll options for transferring payslips from paper to electronic format. Implement actions as viable/practical. 3. Finance and Accounts request that all suppliers transition to paperless electronic invoicing.
Delivery Team	Accountable: Chief Finance Officer Responsible: Director of Procurement and Supply Chain / Head of Payroll Contributors: Procurement Manager covering stationary products, Payroll Manager, local area managers for trial locations, IT support provider covering printer maintenance and repair, HR/ Workforce, Energy & Sustainability Manager.
Resources	Delivery Team's time. Initial enquiries suggest pricing is on a par (or only marginally higher) against virgin/partial recycled content paper.
Monitor	6-monthly check that all paper purchased meets the new recycled content standard, and extent to which payslips have been switched to electronic format.
Scheduling	<b>2022</b> <b>2023</b> <b>2024</b>

#### PI:3. Swapping out of single-use cups

Objective	To permanently implement alternatives to the use of polystyrene, plastic and plastic-lined catering cups and food containers (fulfilling next steps in NHS Plastics Pledge)
Steps and milestones	Review 2019/20 baseline consumption levels for the use of polystyrene, plastic and plastic-lined catering cups and food containers in all areas across the Trust: a.) non-clinical, b.) retail, and c.) clinical. For all areas run comprehensive comms campaign to press for voluntary transition across to re-usable cups wherever possible (i.e. with washing-up/kitchen facilities) – subject to lifting of infection control COVID-19 restrictions. Where this is not possible, and wherever viable, offer transition to fully recyclable cardboard cups (no plastic liner) – these are higher cost items so a careful cost assessment will be required aligned with steps to minimise demand/use. If/as successful remove polystyrene/plastic/plastic-lined cup purchase options from all non-clinical areas (only available as bespoke and fully justified purchase). Continue to liaise with Trust's retail provider on alternative cups, recycling routes and re-introduction of re-usable cups once COVID-19 restrictions lifted. Clinical areas to be individually approached (beginning with highest consumers) to determine use against need and follow-through on alternatives.
Delivery Team	Accountable: Chief Finance Officer Responsible: Director of Procurement & Supply Chain (Trust use), Head of Property Management (Retail use) Contributors: Procurement Project Lead / Property Management Project Lead, Infection control, Sustainability Manager, local area managers, retail partners.
Resources	Delivery Team's time – especially liaising with clinical areas. Increase in unit costs needs to be off-set by greater control of demand.
Monitor	Quarterly consumption figures collated for each: non-clinical, retail, clinical.
Scheduling	<b>2022</b> <b>2023</b> <b>2024</b>

**Organisational Process Change****Pl:4. Develop options for corporate renewable power purchase**

Objective	To replace standard 'green' tariff (REGO-backed) mains grid electricity supplies with bespoke PPA net-zero supplies through which full additionality of renewable supplies to the national grid are assured, together with resilience to fluctuations in fossil fuel prices.		
Steps and milestones	Liaise with Crown Commercial Services (and other third-party providers as appropriate) on options for a 'guaranteed additionality' renewable energy supply basket. Initial potential collation of demand via Shelford Group of hospitals. From here work up most appropriate supply scheme to replace intermediate REGO-backed supplies (whilst constantly monitoring market for reforms to the green tariff market).		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Corporate Support and Sustainability Contributors: Energy & Sustainability Manager, Energy Manager, Finance, Procurement, Shelford Group, third party utility providers.		
Resources	Delivery Team's time, independent legal advice, business case for potentially marginally higher unit price set against long-term stability and avoidance of fossil fuel carbon and market risk.		
Monitor	Quarterly project progress updates.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Pl:5. Net-zero/zero-waste input to catering and cleaning services**

Objective	To ensure that the retendering process for the Trust's new catering and cleaning contract is specified and assessed so that the resultant contracted services are aligned with the NHS Net-zero delivery agenda and associated targets.		
Steps and milestones	Input relevant net-zero parameters into the tender brief and specification. Ensure the tender assessment scoring formula is weighted so that positive net-zero responses are given sufficient weighting in the decision-making process. Monitor delivery to ensure the contract is delivering as specified and committed to.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Hotel Services Contributors: FM Manager, Procurement, Dietitians, Head of Corporate Support and Sustainability, Energy and Sustainability Manager		
Resources	Delivery Team's time		
Monitor	Consultation in drafting process, detailed scoring and reporting of tender, 6 monthly monitoring of awarded contract.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

## Action Set 4

Priority actions to avoid supply chain emissions, and limit emissions at source, through creating new connections within CUH's consumption chain, local community and collaborative partners.

**Action Set 4** (11 items) covers a set of priority actions that are often understated in terms of carbon reduction if they are assessed against conventional greenhouse gas emission scoping (some are occasionally and informally referred to as 'out of scope' or Scope 4). The actions listed here either:

- i.) lead to emissions being reduced through specific supply chain 'avoidance' (AE) or through locally initiated steps to reuse-repair-recycle (RR). Both are essential elements in the transition to a circular economy, or
- ii.) remotely diminish them at the source of demand for consumption - i.e. healthcare prevention, or
- iii.) locally hold the emissions within materials (e.g. wood and recycled concrete aggregate content) so they do not get to enter the atmosphere.

### Reuse-Repair-Recycle (RR)

#### Physical Infrastructure Changes

##### RR:1. Reduce clinical plastics/PPE/curtains waste

Objective	Establish and operationalise reuse or high value post-consumption recycling routes for high volume clinical plastic products previously deemed as single-use and non-recyclable.		
Steps and milestones	Determine volumes by type of clinical plastics (including single-use PPE and curtains) entering the disposal chain. Review opportunities and implications for both reuse and segregation into specific item recycling streams (including collaboration with other organisations producing similar waste). Take viable options forward into trials, understand those that struggle for viability and work on reducing the obstacles.		
Delivery Team	Accountable: Chief Finance Officer, Director of Capital, Estates and Facilities Management. Responsible: Director of Procurement and Supply Chain. Contributors: Energy and Sustainability Manager, Environmental Services Manager, Sustainable Waste Manager, Procurement teams.		
Resources	Delivery Team's time, business case as required for on-site facilities/tech to permit reuse and prep/breakdown of recyclates.		
Monitor	Weight of materials segregated out, drop in weights sent to incineration or offensive and domestic waste streams.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

##### AE:2. Allocate space to support reuse/recycling

Objective	Provision of an adequate on-site dedicated space for the sorting, collation, refining and storage-prior-to-collection of dedicated high value reuse and recycling streams.		
Steps and milestones	Ascertain space needs against viable streams for specific collation/refining to ensure sufficient quality/value in the resulting recyclate and/or re-usable stream outputs. Review site for a suitable location that is safe and accessible for both drop-offs and collections.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Capital Projects Contributors: Environmental Services Manager, Energy & Sustainability Manager, Sustainable Waste Manager		
Resources	Requires free space with good access and staff to operate the facility.		
Monitor	Weight of materials segregated out and sent off-site and/or reused, reduction in weights sent to incineration or offensive and domestic waste streams.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

### RR:3. Re-usable sharps bins

Objective	Introduce a more sustainable means of handling sharps waste by utilising/ employing a contract metal recycling route and significantly reducing the volume of plastic sharps bins incinerated on-site.		
Steps and milestones	Trial with a re-introduction of the single-use metal instruments stream (this was previously halted due to changes in practice within the on-site sterilisation service). Procure a re-usable sharps-bin service contract to deliver and collect bins at an appropriate interval. If successful and viable, review options for extending this into the much wider field of all sharps bins.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management, Medical Director. Responsible: Head of Corporate Support and Sustainability Contributors: Sustainable Waste Manager, Environmental Services Manager, Energy and Sustainability Manager.		
Resources	Business case (including carbon and circularity benefits) required to incorporate savings from diverting sharps waste from on-site incineration.		
Monitor	Monthly weight of sharps material sent off-site.		
Scheduling	2022	2023	2024

## Avoided Emissions (AE)

### Organisational Process Changes

#### AE:1. Exercise Extended Producer Responsibility (EPR)

Objective	To make best use of the Extended Producer Responsibility (EPR) national policy and guidance to provide lower carbon and lower cost solutions in managing the CUH disposal of products at their end of life.		
Steps and milestones	Review current status and weight of EPR national policy (currently under consultation for packaging) – include successful implementation, or otherwise, elsewhere within healthcare. Select delivery elements that can be exercised under existing supply contracts and elements that can be introduced via procurement process for new contracts. Run a trial implementation project where there is greatest opportunity for traction and savings. Draft suitable content for tender specifications and assessments.		
Delivery Team	Accountable: Chief Finance Officer Responsible: Director of Procurement and Supply Chain Contributors: Energy and Sustainability Manager, Procurement Team, Environmental Services Manager, Sustainable Waste Manager		
Resources	Delivery Team's time		
Monitor	Transfer of financial cost of managing products at end of life back onto producers.		
Scheduling	2022	2023	2024

#### AE:2. Supplier specifications to include net-zero/zero-waste by design

Objective	The suppliers of all goods, materials and equipment purchased by the Trust will provide detailed clarity on exactly how they should be handled post-consumption to ensure that options for reuse, repair or high value recycling can be fully exercised.		
Steps and milestones	All specifications for the purchase of goods, materials and equipment include a requirement to provide details on post-consumption handling. Value retention and disposal costs fully evaluated by Trust's waste management team and accounted for in purchasing decisions. Item's users are made fully aware of the value to be retained by ensuring correct steps are taken post-consumption in respect to following the required reuse, repair or recycling actions.		
Delivery Team	Accountable: Chief Finance Officer Responsible: Director of Procurement and Supply Chain Contributors: Procurement Manager, Local team purchasing managers, Environmental Services Manager, Sustainable Waste Manager.		
Resources	Delivery Team's time to set and evaluate item circularity specification.		
Monitor	Reduction in repeat purchase costs (reuse and recycle), reduction in disposal costs (recycling).		
Scheduling	2022	2023	2024



**AE:3. Telemedicine to reduce patient travel**

Objective	To reduce the need for patients to travel to site through the use of telemedicine online technology, or basic telephony, to replace face-to-face with remote consultations when deemed to be clinically effective and viable.		
Steps and milestones	Review data from heavy reliance on remote consultations during height of COVID-19 pandemic. Review existing parameters for remote consultations and their effectiveness outside of pandemic scenario. Adjust parameters as required and consult/trial as deemed necessary. Adopt as formal policy moving forward.		
Delivery Team	Accountable: Chief Operating Officer Responsible: Operations Manager – Outpatients Services Contributors: Outpatients Team Leaders, Sustainability Manager, IT Services.		
Resources	Majority already in place, Delivery Team's time to rationalise.		
Monitor	Monthly record of number of remote consultations, car parking numbers.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**AE:4. Carbon and waste reducing Modern Methods of Construction**

Objective	Reduction in the carbon footprint of major construction projects using modern methods of construction – the offsite manufacture of building modules and panels in controlled conditions for assembly on-site.		
Steps and milestones	Modify Sustainable Design and Construction Policy to prioritise use of modern methods of construction where available and viable.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Capital Planning and Development Contributors: Energy & Sustainability Manager; Major Projects Capital Works Teams.		
Resources	Delivery Team's time		
Monitor	Specification for use of modern methods of construction in major new build projects.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Locked-in and Off-set Emissions (LO)****Physical Infrastructure Changes****LO:1. Incinerator ash recycling for concrete manufacturer**

Objective	To use the residual fly-ash from the on-site clinical waste incinerators as a supplementary material in the production of concrete for new construction projects on the CUH campus.		
Steps and milestones	Assess the quality of CUH's incinerator fly-ash as an admixture in concrete. Determine any pre-addition regulatory or quality-driven treatments required before it can be used. Trial and test the outcomes of making concrete with the fly-ash. If effective, establish volumes and mechanisms required to use it in the construction of Cambridge Children's Hospital and the new Cambridge Cancer Research Hospital.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Head of Capital Planning and Developments. Contributors: Respective new build project manager, Contract Materials assessor, construction teams, project management team, Energy & Sustainability Manager.		
Resources	Assessment and trials from project development budgets.		
Monitor	Volumes of fly-ash recycled		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**LO:2. Carbon storage via building materials: timber construction**

Objective	Wherever possible to use as much sustainably sourced timber as viable and within regulatory standards in construction projects to store carbon (carbon-negative) as a means of balancing the emissions arising from the building process.		
Steps and milestones	Subject to any statutory position (e.g. fire regulations), modify Sustainable Design and Construction Policy to prioritise use of sustainable sourced timber. Exercise policy in all major construction projects.		
Delivery Team	Accountable Director of Capital, Estates and Facilities Management Responsible: Head of Capital Planning and Developments. Contributors: Energy & Sustainability Manager, Major and Minor Capital Works Teams, Fire Team.		
Resources	From project development budgets.		
Monitor	Specification of sustainably sourced timber in major construction projects.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**LO:3. Tree-planting and biodiversity**

Objective	Sustain and improve CUH campus biodiversity through increasing tree cover and further developing greenspace conservation measures (co-benefits: quality of local environment and means of storing carbon).		
Steps and milestones	Commission campus biodiversity baseline survey. Review campus tree survey data against options/ space to increase coverage and species type. Create biodiversity action plan in tandem with site master-plan developments. Implementation. Update Sustainable Design and Construction Policy to incorporate biodiversity conservation and development.		
Delivery Team	Accountable: Director of Capital, Estates and Facilities Management Responsible: Deputy Director of E&F – Engineering; Head of Capital Planning and Development. Contributors: Buildings and Grounds Manager; Energy & Sustainability Manager		
Resources	Baseline survey from Energy & Sustainability Budget. Delivery Team's Time		
Monitor	Review/update of baseline survey.		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

**Organisational Process Changes****LO:4. Off/In-setting by materially supporting ill-health prevention**

Objective	Develop ICS and other local community partnership links to enable Trust to provide material support to local area ill-health prevention programmes. Ill-health prevention is one of the highest level interventions in reducing secondary care carbon emissions. The provision of additional resources by the Trust to these interventions, in kind or otherwise, can be seen as off-setting residual carbon emissions on the road to net-zero.		
Steps and milestones	Review full ICS and local community/third sector ill-health prevention programmes. Determine where CUH can offer direct support by design. Develop phased plan with indicative quantification of carbon savings. Take through approval and adoption. Implement.		
Delivery Team	Accountable: Director of Strategy and Major Projects. Responsible: ICS support team, Energy and Sustainability Manager. Contributors: Clinical and support leads from across the organisation as required.		
Resources	Delivery Team's time to draw up plan with implementation resources to be determined.		
Monitor	Plan development, coverage and subsequent implementation		
Scheduling	<b>2022</b>	<b>2023</b>	<b>2024</b>

# Next Steps

Each of the actions will be developed into a project plan by the allocated, accountable and responsible directors and managers. The projects will be designed to cover and integrate the three core delivery dimensions of physical infrastructure, organisational process and behavioural response.

Re-framing conventional decision-making (to include life cycle assessment, connecting future and current spending, and devolving responsibility) will also introduce new contributors from within the Trust, the Biomedical Campus, local public, business, academic and community sectors, wider NHS systems (e.g., the Cambridge and Peterborough Integrated Care System), and supply and disposal chains (many with global dimensions).

## Execution Plan

<b>April-Sept 2022:</b>	All actions developed into project delivery plans and implementation initiated – supported by the six Action 50 Green Plan Working Groups.
<b>Oct 2022:</b>	Environmental Stewardship Committee (ESC) reviews all 50 project delivery plans and reports status to Management Executive.
<b>Oct 2022-Mar 2023:</b>	First formal delivery round for all actions.
<b>April 2023</b>	First round carbon savings and other returns assessed and calculated through the Working Groups and reported through the ESC to Management Executive.
<b>May 23</b>	Year 1 Board Report – incorporated into Trust's Annual Report.
<b>April 2023-Sep 2024:</b>	Iterative 6 month review and reporting process for all actions: Apr 2023 – Sept 2023; Oct 2023 – Mar 2024 (plus Board and Annual Report); April 2024 – Sept 2024 (including full Action 50 review and preparation of Green Plan Phase 2: 2025-27).

## How to contribute:

There is already a strong informal network of green champions across the Trust. We expect this to grow and strengthen considerably as our Action 50 is developed and delivered.

All staff are encouraged to assist in anyway they can with any of the actions – all contributions are invaluable in meeting the climate emergency challenge.

So please do not hesitate to join colleagues who you know are already working on actions or start up something new in an area that looks like it is not getting enough attention.

Action 50 is a plan that needs the support of the whole CUH family!

Almost all the actions can be supported by small local teams signing up to and completing the increasingly rewarding levels of the CUH **Think Green Impact** (TGI) programme. This fully supported online resource will guide teams through everything they need to do to help us achieve our Green Plan targets and beyond.

We encourage everyone to bring their ambition and innovation to TGI.

# Glossary

**“Green” language can be unclear or ambiguous, the terms used around climate change, carbon and environmental sustainability can create uncertainty. To help with consistency in reading this Green Plan, some of the less familiar and potentially confusing terms are defined as follows:**

**Carbon:** used by the NHS (especially in the context of ‘net-zero carbon’) as a short-hand for all manmade greenhouse gas emissions: 80% of which are carbon dioxide and the other gases are converted to a carbon dioxide equivalent (CO<sub>2</sub>e). The majority of emissions come from burning **fossil fuels** (gas, petrol, diesel-oil and coal), then agriculture and land-use change followed by industrial processes.

**Carbon footprint:** the sum of all the carbon emissions that an organisation or a specific process is responsible for emitting (may include negative emissions where carbon emissions are removed). For the NHS it is split into two: the first part covers those emissions that it is most directly able to control (sometimes loosely referred to as the system’s **Scope 1 and 2 emissions**) and is called the NHS Carbon Footprint (currently approximately 6 million tonnes per year) and the second where the control is more a matter of exercising influence (loosely referred to as **Scope 3 emissions** where the majority are embedded in everything purchased) and is called the NHS Carbon Footprint Plus (currently approximately 25 million tonnes per year).

**Circular economy:** living and working in ways that help fix our climate emergency by supplying and consuming all our goods, materials, and equipment so that they retain as much of their value as possible after use. Making waste and pollution a thing of the past and, once the whole system is powered by renewable energy, then carbon emissions are eradicated as well. A circular economy is therefore **net-zero/zero-waste** by default.

**Climate change:** for the purposes of our Green Plan, this refers to human-made climate change caused by increasing the concentration of greenhouse gases in the atmosphere. An increase in average global temperatures of over **1.5°C (above**

**1850 pre-industrial levels)** will have major impacts on natural systems, health, wellbeing and prosperity; above 2.0°C and there is a high risk of the impacts being catastrophic. The current rate of global emissions will push global warming to 1.5°C in less than ten years from now.

**Green:** shorthand for **environmental sustainability** which in turn applies to anything or any situation in which carbon emissions, pollution and the loss of natural resources have been fully accounted for and corrected so that any negative impacts are negligible, or will be reversed in time for the next generation to experience no risk to health, wellbeing and ecological value.

**Linear economy:** the opposite of a circular economy – this is how the majority of goods, materials and equipment are consumed today: in a take-make-use-throwaway manner. There is some recycling (mostly very low value), repair and reuse but overall waste is very high and the system is predominantly powered by fossil fuels. A linear economy is therefore **high-carbon/high-waste** by default. Our Green Plan seeks to map out a route and deliberately move away from linear consumption and towards the circular.

**Net-zero:** a target for carbon reduction in which there is no net increase in the concentration of carbon emissions in the atmosphere as a consequence of human activity (from what we consume and how we consume it). For the UK the target date has been legally set at 2050. For the NHS it is set at 2040 for emissions it can directly control (with a 47% interim reduction by 2032 from a 2019 baseline) and by 2045 for all of its emissions (with a 73% reduction by 2039 from a 2019 baseline): i.e., the NHS Carbon Footprint Plus is balanced out between positive and negative emissions so that the sum is zero.



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# Climate Emergency



To find out more, visit: [www.cuh.nhs.uk](http://www.cuh.nhs.uk)

