

Net Zero Estates & Facilities

Financial opportunities & Challenges

Presented by:

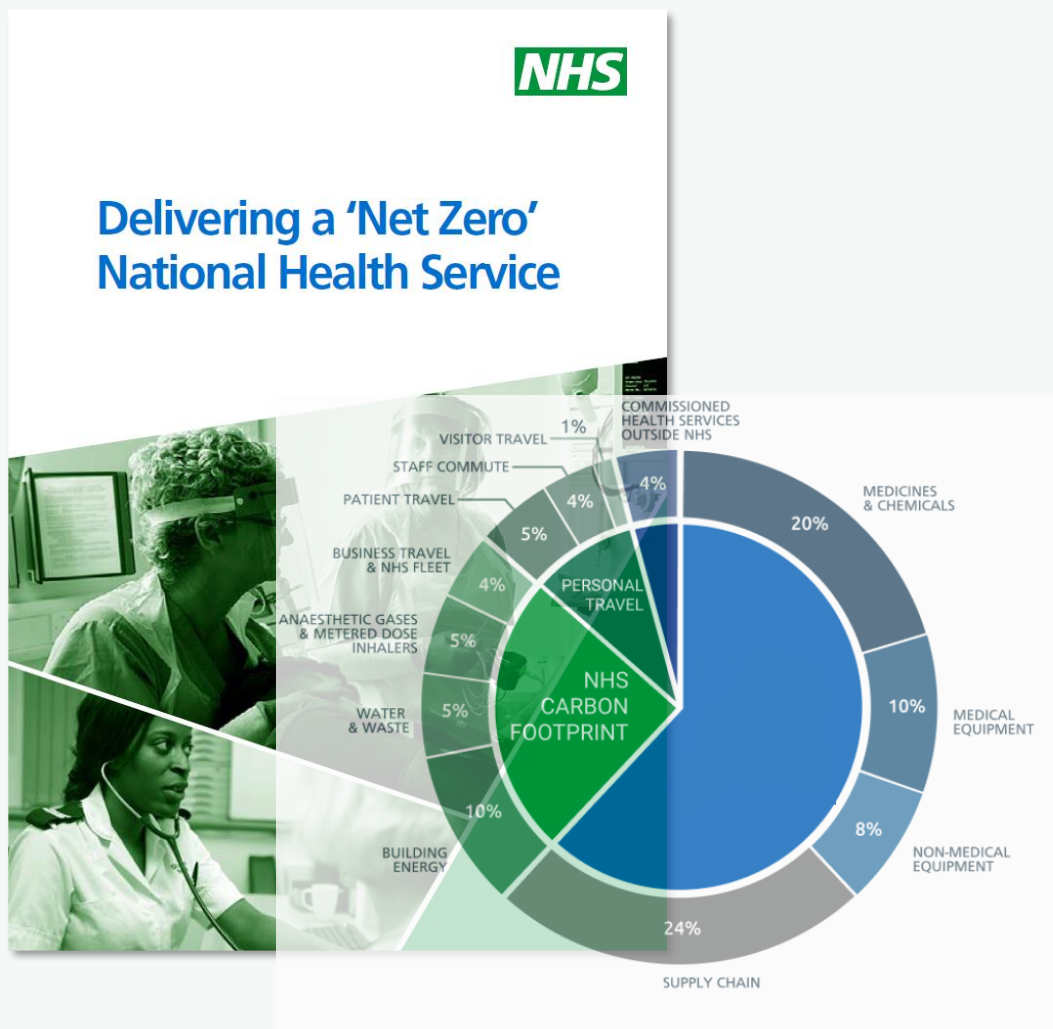
Ian Stenton- Senior Sustainability Manager National NHS Estates
and Facilities Team

Stella Cockerill –Regional Net Zero Programme Manager East of
England

The National Picture

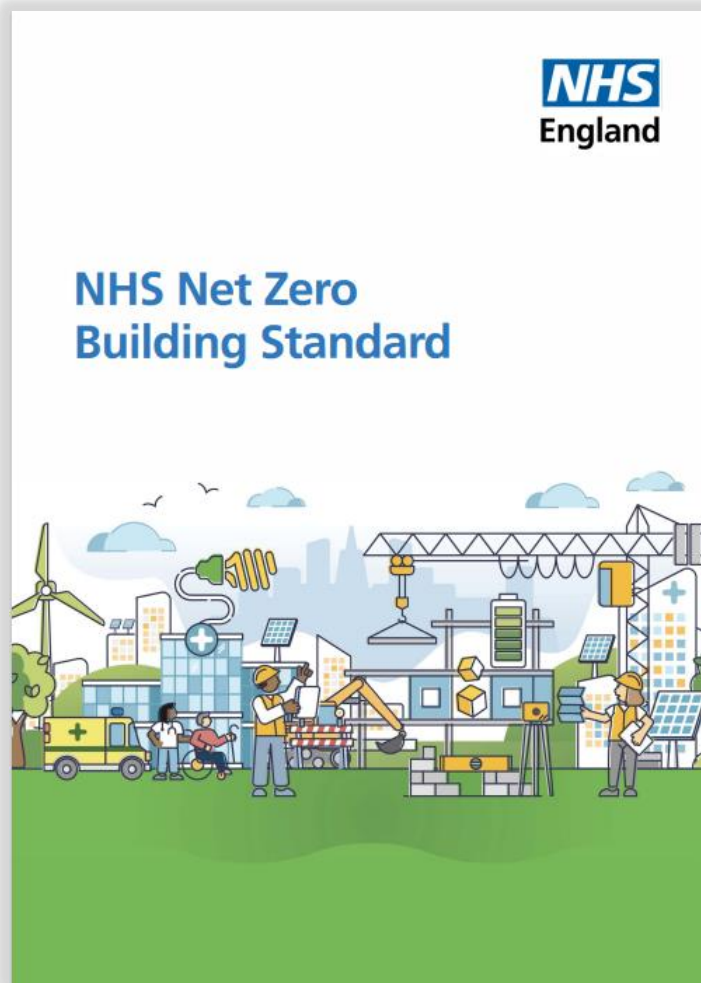
Ian Stenton

Delivering a Net Zero NHS



- Climate change is the **biggest and most pressing challenge of our generation**. The climate emergency is a health emergency
- NHS responsible for **5% emissions in the UK**; Estate emissions a large part of that making up over 1/3 of all public sector energy emissions
- October 2020 **NHS became the worlds first** health service to commit to being Net Zero. It committed to:
 - Net Zero in its directly controlled emissions by 2040 (80% reduction by 2030)
 - Net Zero in its indirect emissions by 2045 (80% reduction by 2039)
- NHS operates in **25,000,000M2 of hospital estate** (1,140 hospitals) plus 7,500 Primary care facilities and 11,000 community pharmacy sites – these need to be **80% NZC by 2032 and 100% by 2040**

Our New Build Estate

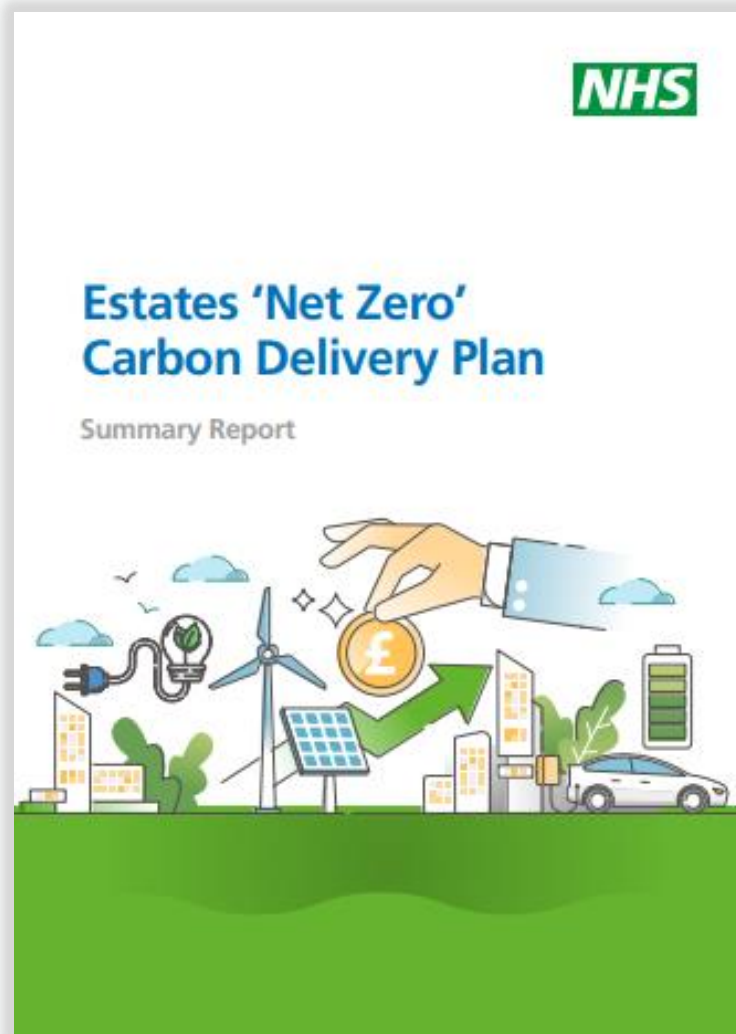


- World-leading Standard for healthcare premises
- Applicable to new builds and major refurb schemes which are subject to HMT controls (>£25M)
- Important step on our road to a Net Zero National Health Service
- Published in February 2023
- Applicable from 1st October 2023
- Part of NHS England business case checklist and the fundamental criteria

[NHS England » NHS Net Zero Building Standard](https://learninghub.nhs.uk/catalogue/nhsnetzerobuildingstandard)

<https://learninghub.nhs.uk/catalogue/nhsnetzerobuildingstandard>

Our Retained Estate



Our Estates to be **Net Zero by 2040**, with an 80% reduction by 2032

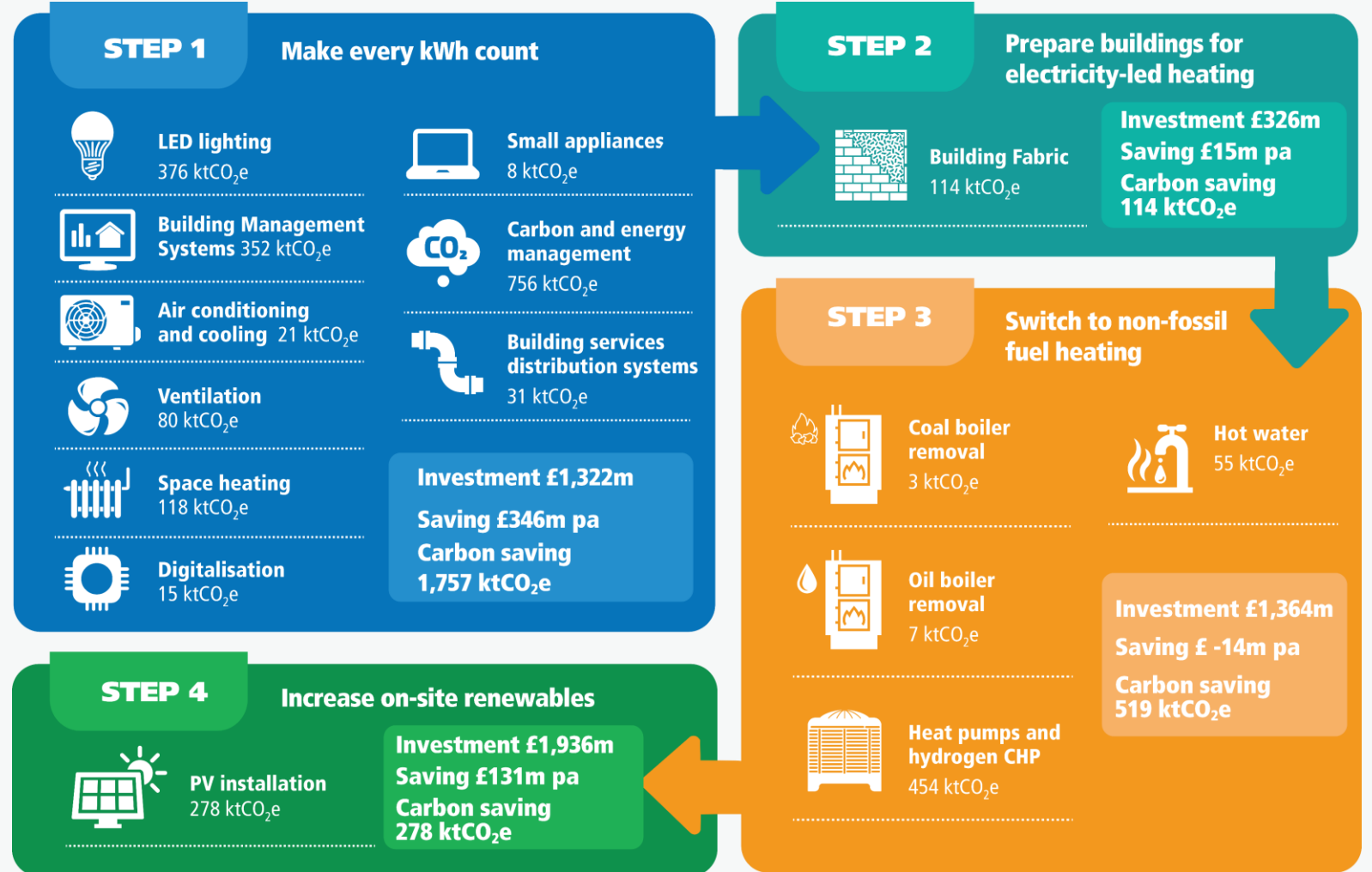
In October 2021, NHSE published the Estates 'Net Zero' Delivery Plan - sets out clear route-map and steps to a Net Zero Estate

Our Core **Aims**:

- ✓ Investing in our buildings
- ✓ Driving forward a circular economy
- ✓ Electrifying our fleet
- ✓ Engaging our supply chain
- ✓ Preparing for severe weather
- ✓ Committing to active travel

Building energy

- Retained Estate
 - Energy Dashboard
 - Technical Annex
- Energy Sprint
- HTM07-02
- Comprehensive Spending Review



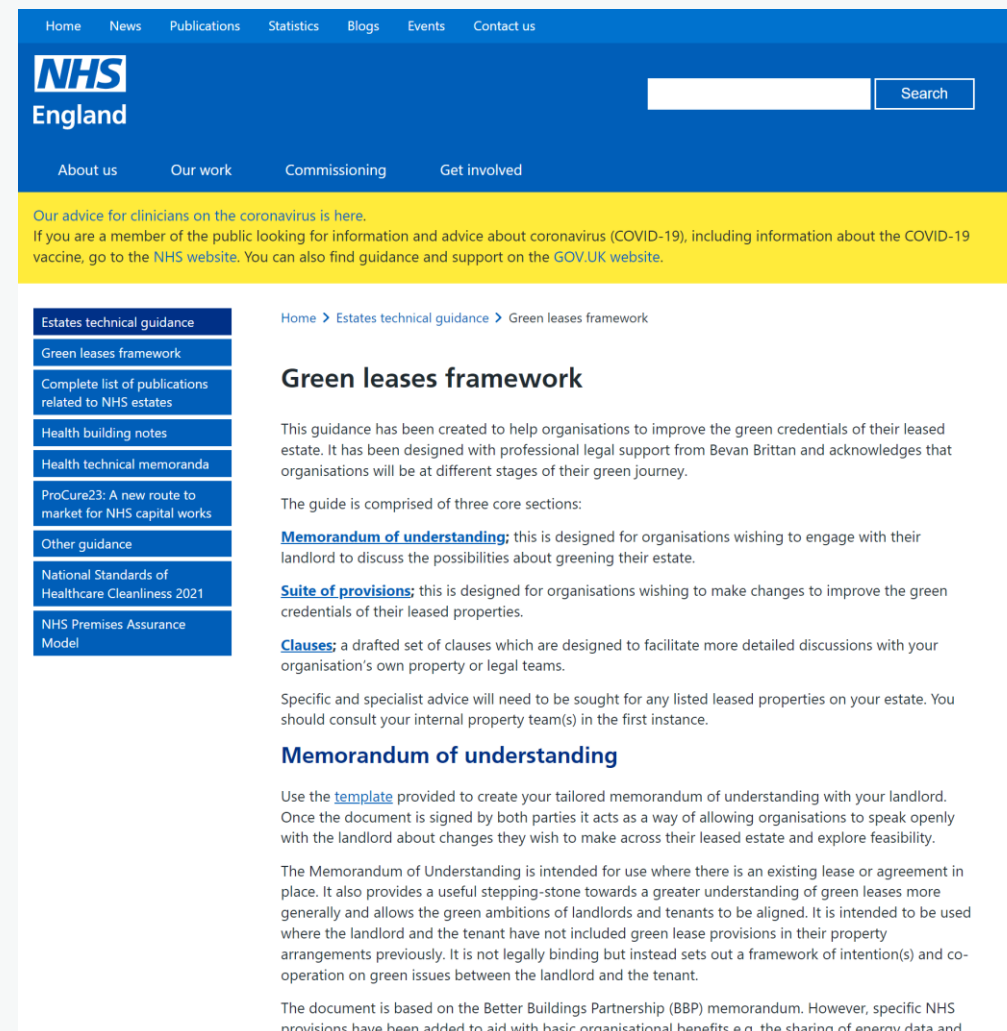
Our leased estate

Guidance for sites with leased estate looking to go green

Core aspects:

- Suite of Provisions: options to increase green credentials of leased properties
- Memorandum of Understanding: to engage with your landlord / tenant to discuss possibilities. For existing leases or agreements
- Clauses: drafted to facilitate detailed discussions with your property or legal teams, as a bolt-on schedule within a new lease or during lease renewal

[NHS England » Green leases framework](#)



The screenshot shows the NHS England website. The top navigation bar includes links for Home, News, Publications, Statistics, Blogs, Events, and Contact us. Below this is the NHS England logo and a search bar. A yellow banner provides advice for clinicians on the coronavirus. The main content area is titled 'Green leases framework' and includes a sidebar with links to various guidance documents. The main text describes the framework's purpose and structure.

Home > Estates technical guidance > Green leases framework

Green leases framework

This guidance has been created to help organisations to improve the green credentials of their leased estate. It has been designed with professional legal support from Bevan Brittan and acknowledges that organisations will be at different stages of their green journey.

The guide is comprised of three core sections:

- Memorandum of understanding:** this is designed for organisations wishing to engage with their landlord to discuss the possibilities about greening their estate.
- Suite of provisions:** this is designed for organisations wishing to make changes to improve the green credentials of their leased properties.
- Clauses:** a drafted set of clauses which are designed to facilitate more detailed discussions with your organisation's own property or legal teams.

Specific and specialist advice will need to be sought for any listed leased properties on your estate. You should consult your internal property team(s) in the first instance.

Memorandum of understanding

Use the [template](#) provided to create your tailored memorandum of understanding with your landlord. Once the document is signed by both parties it acts as a way of allowing organisations to speak openly with the landlord about changes they wish to make across their leased estate and explore feasibility.

The Memorandum of Understanding is intended for use where there is an existing lease or agreement in place. It also provides a useful stepping-stone towards a greater understanding of green leases more generally and allows the green ambitions of landlords and tenants to be aligned. It is intended to be used where the landlord and the tenant have not included green lease provisions in their property arrangements previously. It is not legally binding but instead sets out a framework of intention(s) and co-operation on green issues between the landlord and the tenant.

The document is based on the Better Buildings Partnership (BBP) memorandum. However, specific NHS provisions have been added to aid with basic organisational benefits e.g. the sharing of energy data and

Public Sector Decarbonisation Scheme (PSDS)

PSDS Phases 1 and 2 provided £1.075bn over 2020-22

- **£260m** to NHS to deliver 30 projects, including coal
- **£21m** to deliver 8 projects

PSDS Phase 3a opened 2022

- NHS trusts received **£356.5m**, 60% of overall grant
- Includes nine projects over £10m, 36 schemes overall and 28 trusts

PSDS Phase 3b projects started April 2023, providing £635m

- Sector cap introduced for NHS
- NHS secured **£218.6m** for 20 projects, with three abandoned

PSDS Phase 3c projects expected to be announced April 2024

- Fund of £565m available in total (NHS max approx. £200m)
- Salix received £1.3bn worth of applications

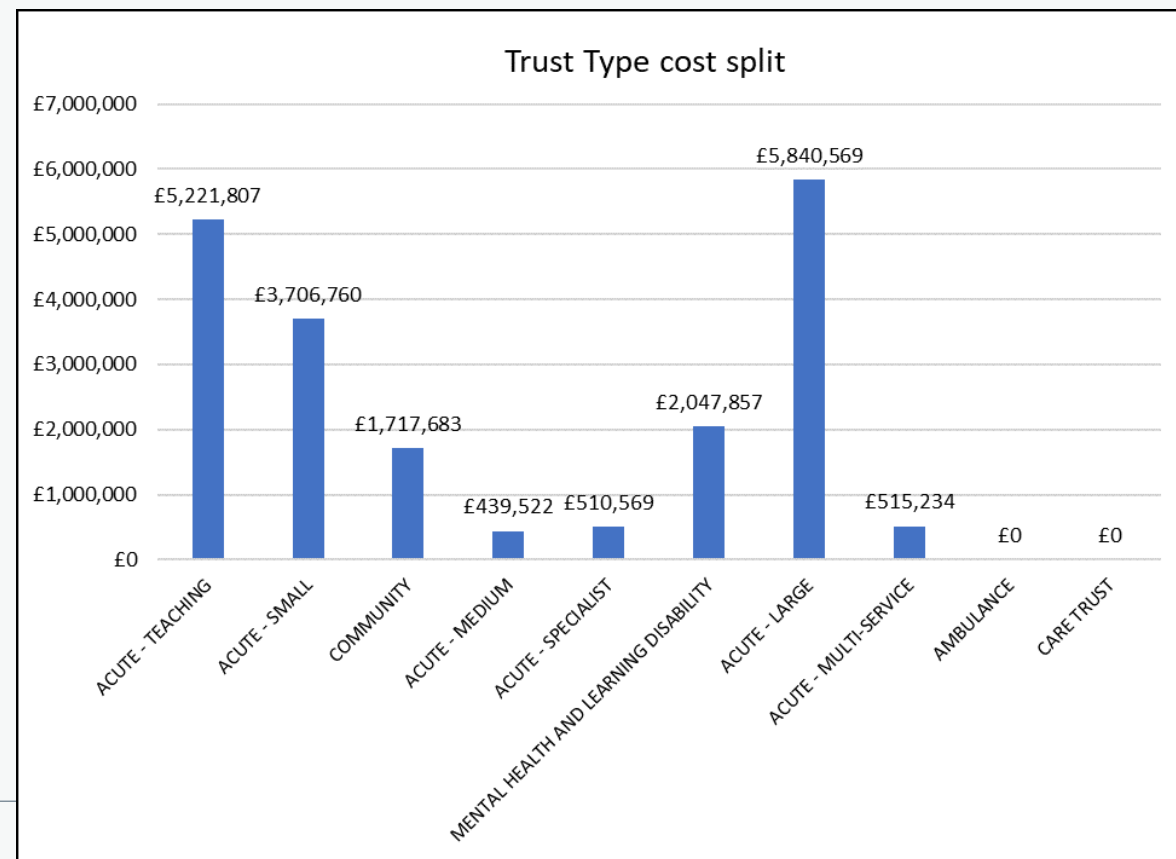
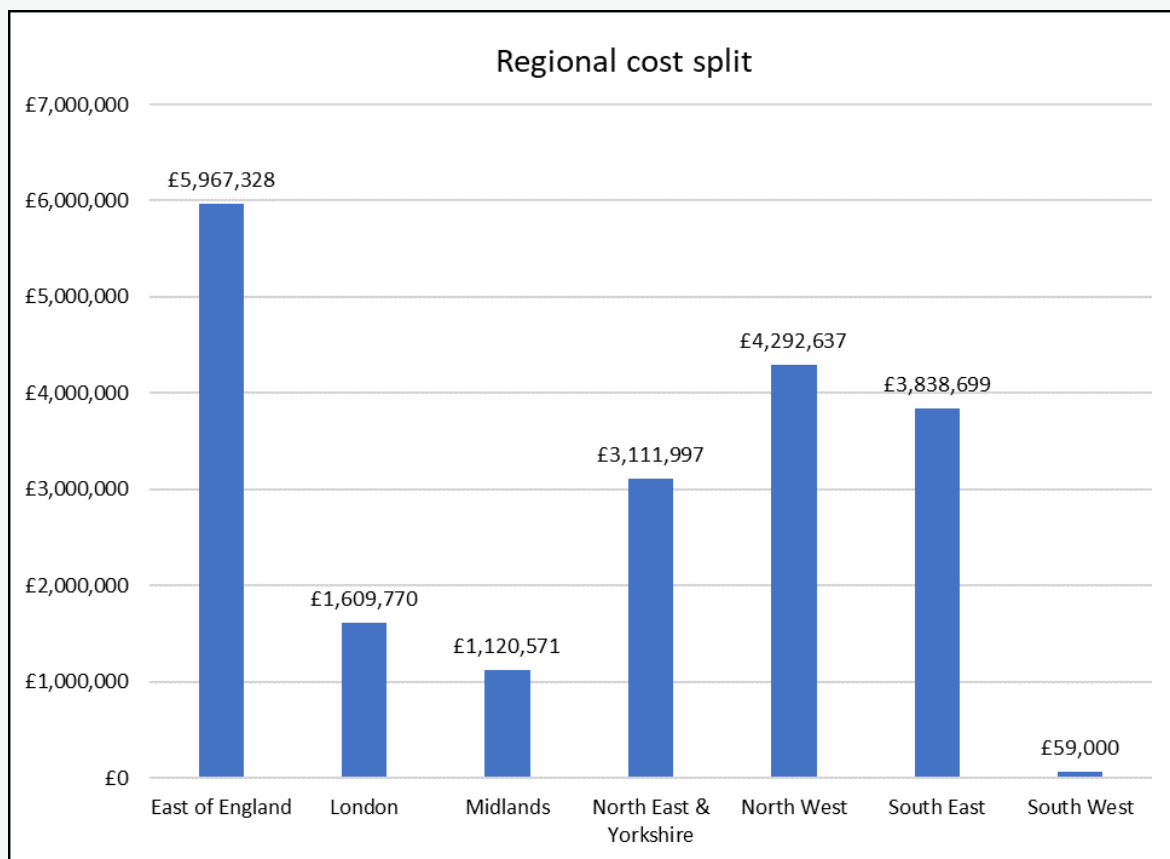


Department for
Energy Security
& Net Zero

Green Heat Network Fund
Low Carbon Skills Fund
Boiler Upgrade Scheme

National Energy Efficiency Fund (NEEF) phase 2

- 48 projects awarded £20m
- 47 LED projects, 1 solar project
- Assessed on delivery confidence, ROI, and carbon
- £84m bids received within three days
- Importance of business cases ready to go



Energy Sprint

1 NHSE – CCS Framework and Offer

The NHSE – CCS framework and offer contains four key services for NHS Trusts

NHS trading Basket

A long-term risk buying strategy for energy procurement through CCS trading and access to renewable energy sources

Spend analysis

Forensic spend analysis in relation to historical energy charges

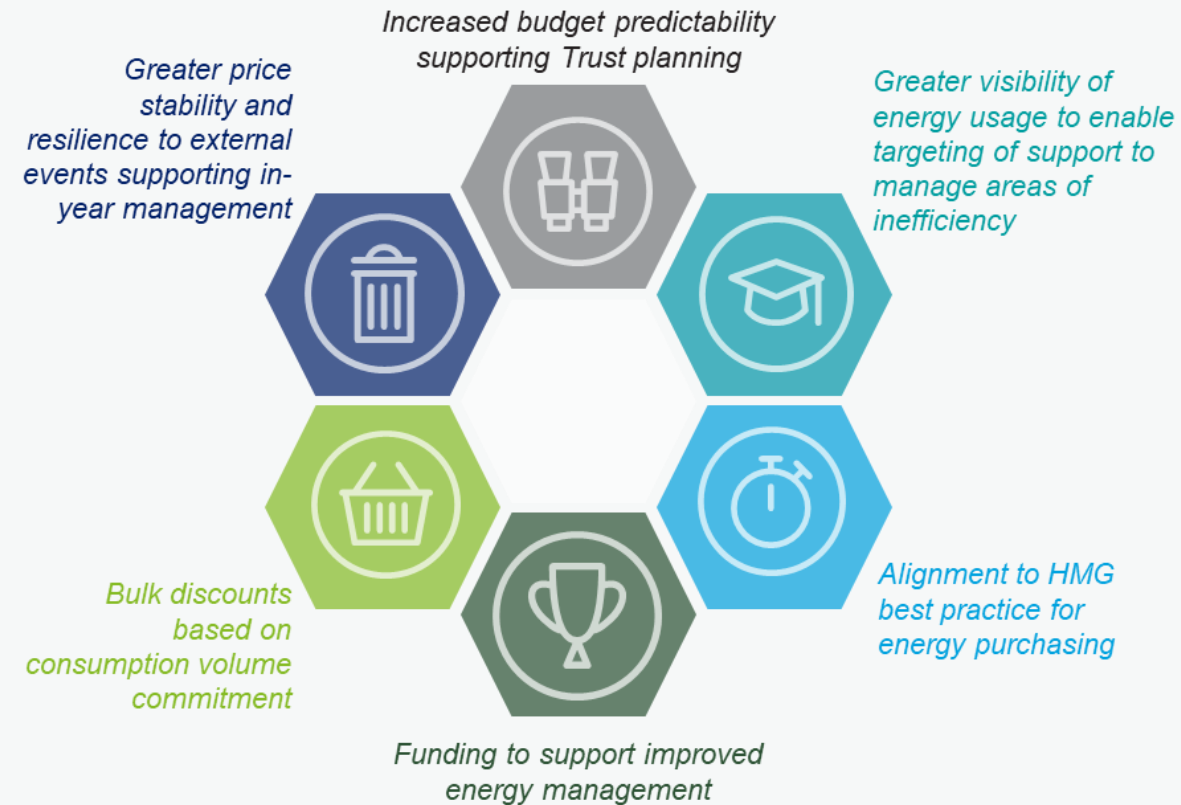
Bureau services

Support for back-office bill validation and processing, as well as regular market position report summarising the NHS Basket trading and pricing position

Energy management support

Provision of subject matter expert support to support energy management, strategy development and sharing best practice

2 Benefits to NHS Trusts



Financial decisions

Strategic case for green investment

- Nine key areas, including improved patient outcomes and reduced backlog maintenance

Considerations for making the economic case for investment in climate action

- Six key areas, including costs (whole-life, energy, cost of inaction) plus non-financial benefits

<https://www.england.nhs.uk/long-read/greening-the-business-case/>



The screenshot shows the NHS England website. At the top is the NHS England logo and a search bar. Below the logo is a navigation menu with links: About us, Our work, Commissioning, Get involved, and Coronavirus. The main content area has a header with the date published (25 May, 2023) and date last updated (24 May, 2023), and a button to download as a PDF. The title of the page is 'Greening the business case'. Below the title is a sub-header 'Publication' and a list of content links: Overview, Introduction, The strategic case for green investment, and Considerations for making the economic case for investment in climate action. The main body of the page contains an 'Overview' section with a paragraph and a 'Key benefits' section with a list of six bullet points.

NHS England

Search

About us Our work Commissioning Get involved Coronavirus

Date published: 25 May, 2023
Date last updated: 24 May, 2023

[Download as a PDF](#)

[A greener NHS](#), [Estates](#)

Greening the business case

< Publication

Content

- [Overview](#)
- [Introduction](#)
- [The strategic case for green investment](#)
- [Considerations for making the economic case for investment in climate action](#)

A guide for estates leads on building net zero and sustainability into business cases

Overview

This guidance sets out how estates and facilities staff can support the business case for investing in carbon reduction measures, and why this is critical for all NHS organisations.

Key benefits

Reading this guidance will help you to:

- Make the case for green investment, including how it can secure rapid paybacks and cost saving in many cases.
- Be strategic about your green investment – and to demonstrate this clearly in the business cases you develop.
- Prioritise and secure investment that boosts your estate's energy and climate resilience.
- Identify, capture and argue for synergistic investment across priorities, for example adopting approaches which both tackle backlog and reduce carbon emissions.
- Show that your capital investment is aligned with government and NHS net zero priorities.
- Understand and apply key Green Book requirements.
- Ultimately, improve health outcomes for your patients (and staff).

GSHP Screening Tool

- NHSE, ESC, BGS
- £250k Innovate UK
- 2021 feasibility study, GNHS-funded
- NHS and public sector
- Complete end of March 2024

Welcome to the GSHP Screening Tool

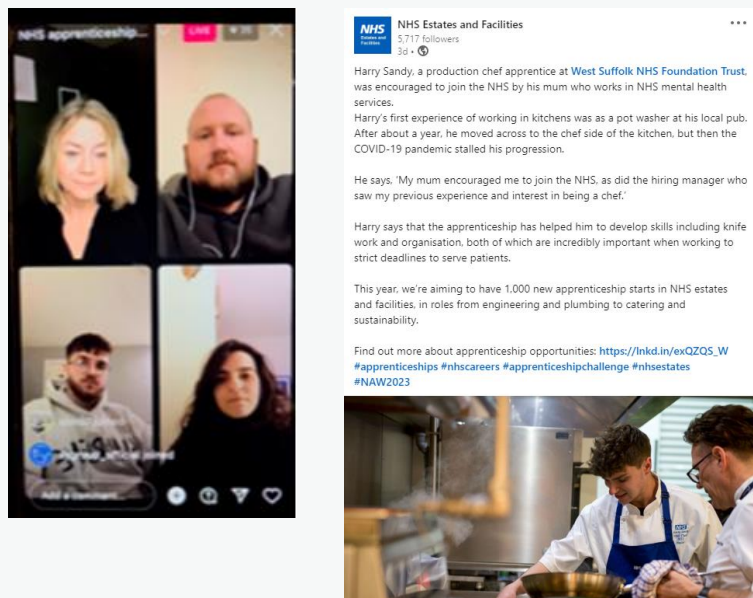
Pre-release

The GSHP Screening Tool is a national-scope screening tool for England which will guide initial feasibility studies for using ground source heat pumps (GSHP) as an option for low carbon heating for individual NHS trust buildings and heat networks.

Before starting using the tool it would be helpful to have some data about the site and the buildings that you wish to evaluate. This includes the building age, use, floor area and periphery. While the tool can estimate both the annual usage and peak demand, this may not be accurate for the particular buildings that you wish to consider. Inputting reliable data for one or both will significantly improve the accuracy of the results. The tool assumes boreholes will be drilled to access ground source heat. The area that is available on the site for drilling holes is needed. This can be an estimate if an exact figure is not known. The land that would be suitable would include car parks or grassed areas of the site.

[Get started](#)

Developing our future workforce



EFM [Apprenticeship Challenge](#)

[Apprenticeship Toolkit](#)

First cohort of net zero apprentices

Rolling programme for interns

School talks to inspire the next generation

Skills matrix with IEMA

[NHS England » NHS estates sustainability careers – recruitment and career pathways guidance](#)



Healthcare
Apprenticeships

Helping you prepare, plan and deliver world class apprenticeships



Scaling our collective knowledge

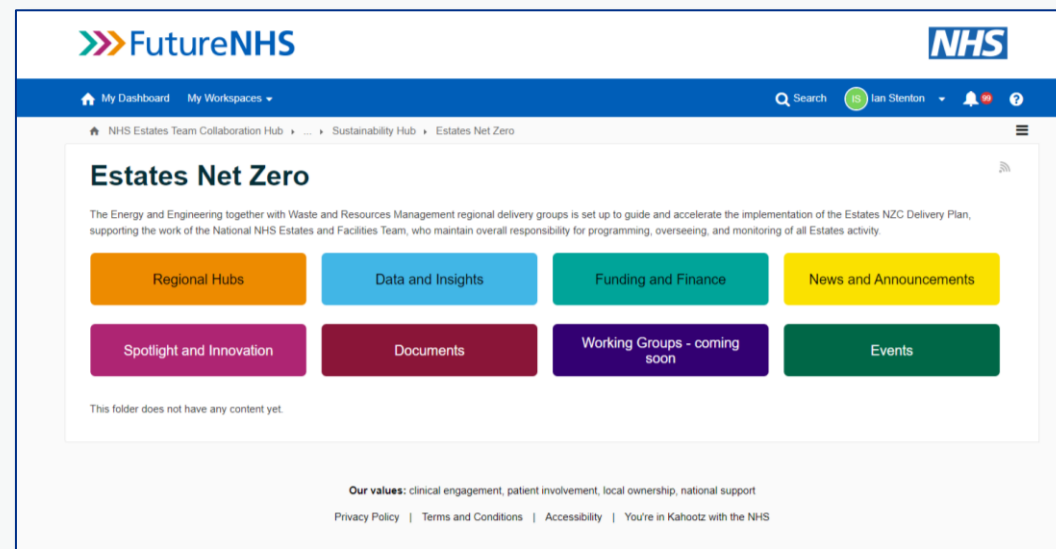
- Established **Regional Estates Net Zero Delivery Groups** to support delivery of the Estates NZ Delivery Plan

Key areas of Focus:

- Energy and Engineering
- Waste and Resources
- Innovation

Aims:

- Provide insights from across the region
- Recognise barriers and enablers to net zero estates
- Advocate for estates net zero programmes
- Share and scale best practice
- Drive forward critical plans e.g. heat decarbonisation plans, waste reduction plans



[Regional Delivery Groups - NHS Estates Team Collaboration Hub - NHS Estates and Facilities \(future.nhs.uk\)](#)

East of England Collaboration

Working with the Greater
South East Net Zero Hub

East of England Renewable Energy Study

Mapping current activity & exploring the opportunities

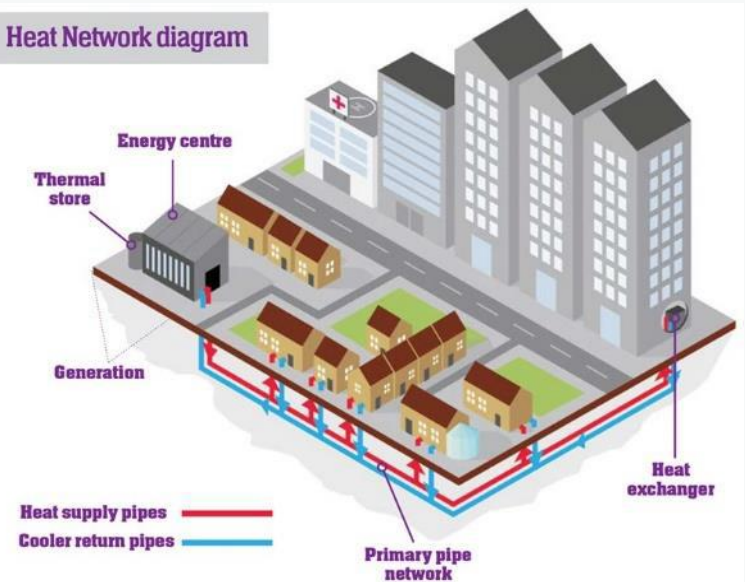


Exploring the potential for solar panels on and off site



Exploring the opportunities for District Heat Networks

Heat Network diagram



Developing a regional approach



Mapping the current position

- Renewable energy
- District Heat Networks

Identifying opportunities

- Opportunities for On Site & Private Wire off site Solar
- Making the right connections for Heat Networks
 - Sourcing funding



Understanding the barriers

- Use of private finance in PFI type of structures & CDEL constraints
- Commercial considerations for District Heat Networks

Developing our collective learning

- Considerations for larger scale developments
- An introduction to Power Purchase Agreements

Cost effective Implementation

- Upskilling the workforce (solar installation)
- Joint procurement e.g. solar panels centralised energy purchasing



Working in partnership

The partners

- Greater South-East energy Hub (info@gsenetzzerohub.org.uk)
- Local Partnerships
- Procurement Colleagues (NHSE Systems EoE Collaborative Procurement hub)
- NSHE Analytics
- CS Laser Frameworks
- Regional system finance
- Charities
- System workforce
- Solar companies
- 44 Local Authorities
- 32 health Organisations



Benefits of the collaborative approach

Share expertise & knowledge

Ensure that all NHS Trusts can benefit from the expertise we have.

Connect to our local authority contacts to support place led activity

Tap into industry & technical expertise

Maximise the resource in NHS and GSE Energy Hub

The hub's purpose is to increase the number, scale and quality of local net zero projects. Our aim is to facilitate & strategically direct access to their expertise.

Developing our collective knowledge and sharing best practice

Unlock larger scale and place base opportunities

Help to identify and share opportunities to obtain finance for local net zero projects.

Provide support to develop bids for external funds

Connect local partners together for mutual benefit



Strategic Aims Renewable Energy

Explore renewable energy from Solar, Wind and Geothermal.

The journey so far:

- Share key findings from the renewable energy study
- Summarise energy usage and current solar usage on the Acute Trusts and opportunities to take forward.
- Show all health organisations the possibilities.
- Create a clear picture of what options you can progress from a contractual perspective.
- Discussion about options for taking actions forward collaboratively

C&P	Rooftops	Car Ports	Off Site
Hinchingbrooke	NHP	None	1.7MW
Addenbrookes	232 kWp	None	Trust looking to develop
Royal Papworth	None	None	None
Peterborough City	1,842 kWp.	None	None

BLMK	Rooftops	Car Ports	Off Site
Milton Keynes	360 kWp	None	None
Bedford	286 kWp	None	5.5MW
Luton and Dunstable	135 kWp	None	None

HWE	Rooftops	Car Ports	Off Site
PAH	NHP	None	49.99 MW
Watford	NHP	None	None
Lister	628 kWp	None	25MW

Onsite & Off-site opportunities

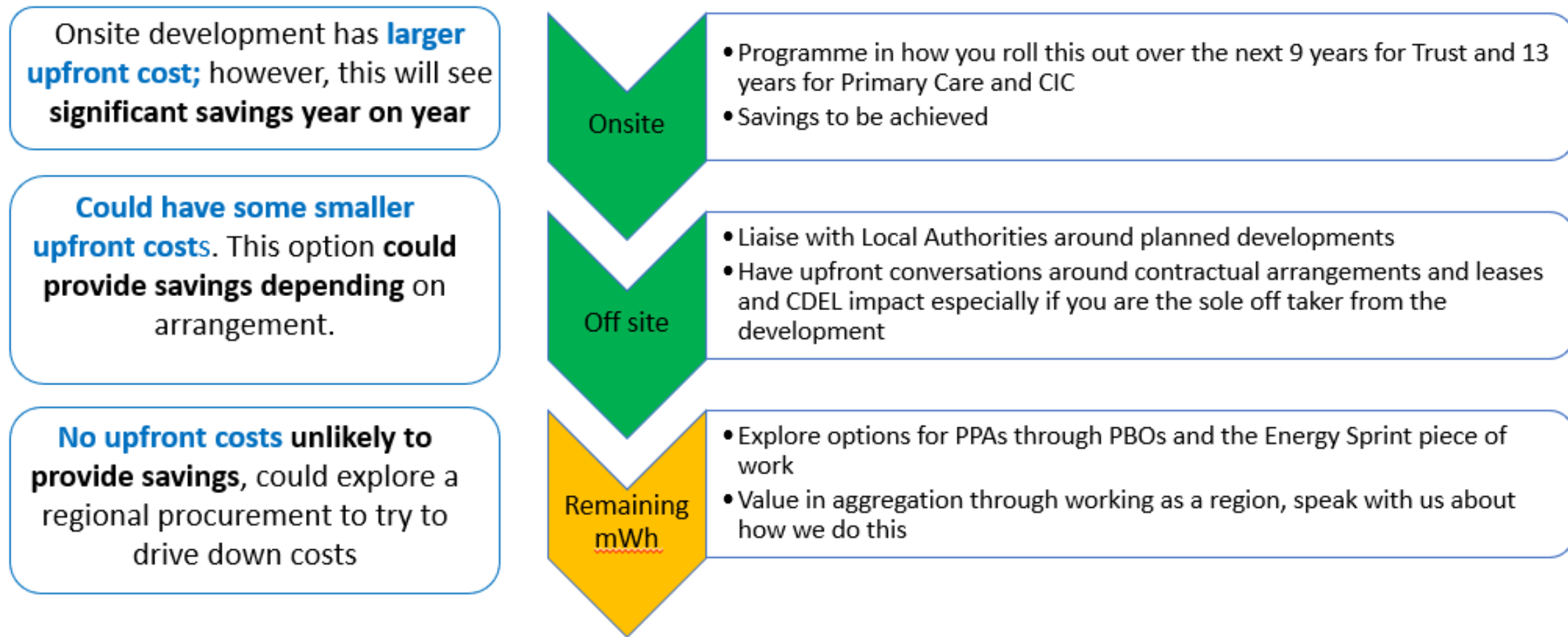


N&W	Rooftops	Car Ports	Off Site
James Paget	NHP	None	None
NNUH	214 kWp	855 kW 1.6MWp.	15MW
Queen Elizabeth	NHP	None	49.99 MW

SNEE	Rooftops	Car Ports	Off Site
Colchester	749 kWp	937 kWp	4.5MW
Ipswich	813 kWp	1216 kWp	None
West Suffolk	361 kWp	None	14.0MW.

MSE	Rooftops	Car Ports	Off Site
Southend	363 kWp	795 kWp.	2.5 MW
Broomfield	652 kWp	1,332 kWp.	None available
Basildon	771 kWp	None	49.99MW

Supporting the decision-making process



Overview of PPA Opportunities

What is a PPA?	A PPA is a long-term contract under which an organisation agrees to purchase electricity directly from a renewable energy generator.
Why use a PPA?	Offers an alternative financing model to renewable energy procurement, overcoming upfront capital barrier by spreading the cost over a long contract period (typically 10-25 years). They can also stabilise energy costs through long term pricing, avoiding market fluctuations and support energy resilience.
Who else uses PPAs?	E.g. businesses, local authorities

There are two main types of PPA	Opportunity in the NHS
<p>Direct (on-site): a direct physical supply of electricity, necessitating physical proximity of plant and consumer. An on-site PPA means that the generation plant is located behind the metering point of the consumer, and is often at the same location</p> <p>Indirect (off site): These involve a contractual arrangement where a buyer chooses to buy a specified amount of electricity, for a specified term, from a specified generator owned asset. The electricity is then supplied through the normal electricity transmission and distribution systems and paid for through a standard electricity supplier contract.</p> <p>There are options to pursue PPA backed energy at local, regional and central level.</p>	<p>Supporting UK National Goals</p> <p>Renewable Energy key to NHS Decarbonisation Goals</p> <p>Energy Resilience</p> <p>Energy Price Risk Management</p>

Crucially, implementation across the NHS faces some barriers

Barriers to Progress

Key barriers affecting uptake of PPA investments in the NHS:

Driver	Description	Mitigation
Treasury Rule	<ul style="list-style-type: none">▶ Treasury limits NHS infrastructure investment options involving contracts with private companies due to sensitivities around PFI schemes.	Negotiate / Influence Treasury to establish new ground rules to unblock access to finance and long term contracting
CDEL	<ul style="list-style-type: none">▶ RDEL (resource department expenditure limits - revenue) and CDEL (capital department expenditure limits) are placed on revenue and capital allocations respectively	Move to relax CDEL limits for energy projects, such as PPAs
IFRS16	<ul style="list-style-type: none">▶ IFRS 16, suggest that the right to control the use of an identified asset for a period of time, in exchange for consideration, meets the definition of a lease, even if the arrangement does not take the legal form of a lease.▶ In which case, IFRS 16 requires a lessee (NHS) to recognise assets and liabilities for all leases with a term of more than 12 months (typical of most PPAs). Trusts do not have headroom in their balance sheets/budgets to do this.	Design IFRS16 liability out of the contract agreement



District Heat Networks Strategic Aims

To develop a collective understanding of the various ways we can source heat from our estate and ensure we are in a place to fully maximise the opportunities for heat networks.

The journey so far, we have:

- Explored the different ways for obtaining heat from our estate.
- Gained an understanding of Government strategies and plans.
- Mapped out those areas in the East of England where Local Authorities are planning District Heat Networks.
- Also looked at locations which might lend to a District Heat Network.
- We are working with the Greater Southeast Net Zero Hub to understand how they can support those who are looking at district heat Networks



Why focus on District Heat Networks?

- Decarbonisation of heat is critical to the NHS achieving its net zero emissions targets. Net zero implies a move away from natural gas towards zero carbon technologies and fuels. According to the Energy Systems Catapult³ there are three main options to decarbonise heat:
 - Heat Networks
 - Heat Pumps
 - Hydrogen used via the gas network
- Across the NHS estate, the net-zero heat solution is likely to involve a mix of these technologies. Heat networks are a proven and cost-effective method of reducing the carbon intensity of heating but are currently underexploited.
- Currently only 54 (5.12%) of the health and care buildings within the Hub area have heat supplied from a heat network. Heat networks provide a unique [opportunity to exploit larger scale – and often lower cost – renewable and recovered heat sources](#), that cannot otherwise be used. Whilst the solution is limited by the geographical location of current and future heat sources, planning and assessing the feasibility of heat networks was identified in the Needs Assessment as an important area for further exploration within the Hub area.



Why focus on District Heat Networks?

1. Heat Networks are a **key pillar in the delivery of the Government's low carbon strategy**. The Government Strategies highlight the need to move away from burning fossil fuels for power and heating and continue to grow and decarbonise the UK Heat Network market, introducing sector regulation and new heat network zones by 2025 through the UK Energy Bill¹⁰
2. The **UK Energy Bill is supported by new funding initiatives** to support the development of heat networks, including the **Green Heat Network Fund**, as part of the **wider Heat Network Transformation Programme** providing £338 million over 2022/23 and 2024/25.
3. Within the UK, there is already an established District Heating market in the UK, with approximately 480,000 heat network customers, including 446,517 homes, being serviced by 14,000 heat networks. **This technology meets around 2% of current total heat demand for the UK**. At present, almost all use a fossil fuel-based primary fuel source.
4. **Heat network zoning** is a key Government policy solution to help reach the scale of expansion of heat networks required to meet net zero.
5. **It is projected** that through the introduction of these policy and funding initiatives, that **heat networks will serve 17% of the UK** heat demand in homes by 2050, a significant increase compared to less than 2% currently. This would represent 8 million homes being connected to heat networks compared to c450,000 currently.
6. **An NHS Net Zero Building Standard has been developed as part of the Government's Health Infrastructure Plan**. This will apply to all investments in new buildings and upgrades to existing facilities that are subject to HM Treasury business case approval process and/or are at pre-strategic outline business case approval stage from 1 October 2023 onwards.

Key message

Delivery of a Net Zero Estates Targets **cannot be achieved unless we work together with finance colleagues** to unlock the investment needed.

There are **significant opportunities and savings** to be made by working in partnership with other NHS colleagues our region, Local Authorities and the Greater South East Net Zero Hub



Thank You



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