



Sustainable Solutions, Assured


2024-25 End-of-Year Carbon Report

v0.3

Environmental and sustainability solutions provided to
Leeds Teaching Hospitals NHS Trust



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1.0 INTRODUCTION

1.1 Background Context

Leeds Teaching Hospitals NHS Trust (LTHT) is one of the largest and busiest acute hospital trusts in the country, serving as a regional and national centre for specialist treatment, a renowned biomedical research facility, and the local hospital for the community of Leeds. LTHT are committed to being a leading force in environmental matters, with a goal of becoming one of the greenest NHS Trusts in the UK. Due to the significant threat that climate change poses to public health, LTHT understand that reducing carbon emissions is essential for improving health and fully endorse the Greener NHS target of achieving net zero by 2040. As a result of this, LTHT have undertaken significant work over the past few years to reduce their carbon emissions and improve their overall sustainability performance.

WRM have been providing sustainability management and support services to LTHT since 2016. Throughout this time, one of the most significant pieces of work WRM have undertaken has been to develop, update, and report on the Trust's carbon footprint. A total 32,837tCO₂e reduction has been achieved by the Trust since its carbon baseline year of 2013, equalling approximately 36%. This carbon reduction figure differs from the reduction of 37% reported at the end of the 2023-24 reporting year. This is because 2024-25 marks the first year in which emissions from nitrous oxide and Entonox have been formally recorded by the Trust, and accounting for these emissions is a requirement of NHS England. To ensure consistency in reporting, an average based on the data obtained on nitrous and Entonox use in 2024-25 has been used to extrapolate emissions back to the 2013-14 baseline year. As a result, the revised baseline emissions are higher than previously reported but provide a more comprehensive and accurate reflection of the Trust's true carbon impact. The quantity and quality of data to inform the Trust's carbon footprint will improve over time, and in future years, the Trust will work to capture additional aspects such as those Scope 3 emissions included within the scope of the NHS Carbon Footprint Plus.

To help facilitate progress on carbon reduction, WRM have provided sustainability support for the implementation of various projects, such as providing Carbon Literacy training for staff, evaluating tender responses, and undertaking carbon assessments on clinical and capital projects. The collaboration between WRM and LTHT through 2024-25 has led to a further reduction of 46tCO₂e (0.07761%) in the Trust's carbon footprint, with the full or partial implementation of over 200 Green Plan actions.

1.2 Aims and Objectives

This report has been produced to provide assurance to LTHT on the Trust's carbon reduction progress and the methodology which has been employed to quantify its carbon footprint. The objectives of the report are as follows:

1. To provide details on the methodology used to formulate the carbon footprint, cite the sources of information used, and justify the approach employed.
2. To report on the Trust's carbon reduction progress across the 2024-25 financial year and since the 2013 baseline year.

This report provides LTHT with the information they may require in responding to enquiries should any stakeholder wish to understand the carbon metrics reported. This report also provides an understanding of LTHT's climate change impact, allowing the Trust to identify its emissions sources, track progress, and demonstrate their commitment to achieving net-zero.

2.0 METHODOLOGY

2.1 Emissions Inventory

Since its introduction, the NHS has been working to deliver on the targets established by the 2008 Climate Change Act. In October 2020, NHS England published the *Delivering A Net Zero National Health Service* report in October 2020. This report details the sector-wide approach on delivering carbon reduction and establishes the scope of the NHS Carbon Footprint and the NHS Carbon Footprint Plus. This carbon footprinting methodology is aligned to The Greenhouse Gas Protocol (GHGP) scopes, which cover a wide set of emissions and support international comparison and transparency. These scopes are described below:

- Scope 1: direct emissions from owned or directly controlled sources, on site;
- Scope 2: indirect emissions from the generation of purchased electricity;
- Scope 3: all other indirect emissions that occur in producing and transporting goods and services, including the full supply chain.

There are some emissions that fall outside these scopes. Therefore, as agreed with the NHS Net Zero Expert Panel, the NHS is also working towards net zero for the NHS Carbon Footprint Plus, which includes all three of the scopes above, as well as the emissions from patient and visitor travel to and from NHS services. The scopes of the NHS Carbon Footprint and the NHS Carbon Footprint Plus are defined in Figure 1 below.

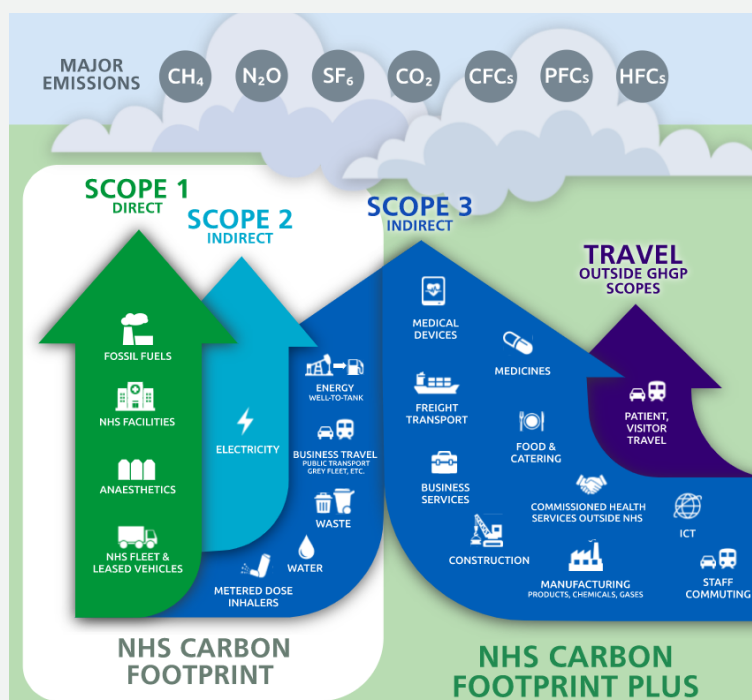


Figure 1 - Scopes of NHS Carbon Footprint & NHS Carbon Footprint Plus

LTHT is currently recording the following activities which contribute to the Trust's NHS Carbon Footprint, representing direct and indirect CO₂e emissions from the Trust's operations. At present, the Trust do not include emissions sources within the Trust's NHS Carbon Footprint Plus, but the Trust is committed to improving its data collection processes with the ambition of incorporating these sources into future carbon footprint reporting.

To support the calculations, energy and resource consumption data is provided by LTHT for inclusion within the Trust's carbon footprint covering the following emissions points:

- Gas
- Oil
- Fleet mileage
- Anaesthetic gases (inc. Nitrous Oxide and Entonox)
- Electricity (inc. Heat and Steam)
- Water
- Waste (inc. Clinical and Non-Clinical)
- Inhalers

2.2 Emissions Assessment

Once received, the data provided by LTHT is converted into a unified unit of measure for carbon impact. Tonnes of carbon dioxide equivalent (tCO₂e) is the standardised unit for quantifying greenhouse gas (GHG) emissions associated with activities, regardless of whether they derive from carbon dioxide, or indeed any other GHG. The emissions figures are therefore given in tCO₂e, allowing for the inclusion of the following 6 greenhouse gases as covered in the Kyoto Protocol, where relevant:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)

This allows us to compare the impact of different GHG's on a common scale, and provides a standardised metric for setting emission reduction targets.

LTHT's carbon emissions have been calculated by in most cases by multiplying the Trust's resource and energy consumption data with the UK's national conversion factors provided by the *Department for Energy Security and Net Zero (DESNZ)*. Where conversion factors relevant to the aspect being calculated are not available from DESNZ, other carbon factors have been applied, for example from NHS England's medical conversion factors as provided in the *Activity-Based Emissions Factors for Greenhouse Gas Modelling in the NHS*. These factors are suitable for use by UK-based organisations of all sizes and international organisations reporting on their UK operations. This approach ensures that the emissions reported by the Trust reflect the average emissions intensity of the energy networks on which its energy consumption occurs (in this case, the DESNZ carbon conversion factors for natural gas and electricity from the National Grid).

The conversion factors used are updated on an annual basis. The use of robust and recognised conversion factors, in line with the applicable reporting year, ensures that the emissions profile of each of LTHT's aspects are reported with a high degree of accuracy and in line with industry best practice. It also ensures that the calculation and quantification method used can be reproduced for future years. It is important to note that there are some variations in the carbon factors used, as energy and resource consumption data is often captured on a site-by-site basis, and each site is powered by different sources of energy. For example, some areas of the Trust produce electricity from gas CHPs, which is a more efficient way of powering the organisation. In these cases, the relevant efficiencies and corresponding deductions have been applied to the carbon footprint calculations to ensure accurate reporting. Information regarding the data and carbon factors used for calculating the emissions profile of each of LTHT's aspects, including justifications for their use, can be found in the table below.

2.3 Table of Data and Carbon Factors Utilised

Scope	Aspect / Category	Consumption Data	Carbon Factor	Tab	Activity	Type(s)	Unit
1	Natural Gas	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	Fuels	Gaseous fuels	Fuel; Natural gas	kWh (Gross CV)
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for natural gas consumption. 							
1	Oil	Actual recorded consumption data used for all years prior to 2018-19; estimates consumption data based on the average of existing data calculated for remaining years up to 2024-25; estimated consumption data calculated based on best available data for 2024-25.	Carbon factor used for all years reported	Fuels	Liquid fuels	Gas oil	kWh (Gross CV)

Scope	Aspect / Category	Consumption Data	Carbon Factor	Tab	Activity	Type(s)	Unit
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all years prior to 2019 and is therefore of high accuracy. Figures between 2019 and 2025 have been estimated on a pro-rata basis across the year, based on best available data. The carbon factor selected for the calculation is the industry standard for oil used in heating systems. 							
1	Fleet Mileage	Actual recorded consumption data used where available; estimated consumption data applied for missing years, based on the average of existing data.	Single carbon factor used for all years reported	Passenger vehicles	Cars (by size)	Average car	miles
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT where available, and estimates were applied for missing years based on an average of existing data. Compared to a benchmark of other Trusts providing similar services, it is assumed these figures have a good degree of accuracy. The carbon factor selected for the calculation is the industry standard for car diesel and petrol consumption in the UK. 							
1	Anaesthetic Gases: Desflurane	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	Sulbaek Anderson et al. 2021 (GWP), Sherman et al. 2012 (Scope 3)	Desflurane	N/A	240ml bottles
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for desflurane use. 							
1	Anaesthetic Gases: Sevoflurane	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	Sulbaek Anderson et al. 2021 (GWP), Sherman et al. 2012 (Scope 3)	Sevoflurane	N/A	240ml bottles
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for sevoflurane use. 							
1	Anaesthetic Gases: Isoflurane	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	Sulbaek Anderson et al. 2021 (GWP), Sherman et al. 2012 (Scope 3)	Isoflurane	N/A	240ml bottles
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for isoflurane use. 							
1	Anaesthetic Gases: Nitrous Oxide (Pure)	Estimated consumption data calculated based on an average of actual data provided for Feb - Sept 2024 and extrapolated back to the baseline and forward to the end of 2024-25.	Single carbon factor used for all years reported	Sulbaek Anderson et al. 2021 (GWP), Sherman et al. 2012 (Scope 3)	Nitrous Oxide Pure	N/A	litres
Justification <ul style="list-style-type: none"> The consumption data used was estimated based on an average of actual data recorded data by LTHT for February-September 2024 and extrapolated back to the baseline and forward to the end of 2024-25. Compared to a benchmark of other Trusts providing similar services, it is assumed these figures have a good degree of accuracy. The carbon factor selected for the calculation is the industry standard for pure nitrous oxide use. 							
1	Anaesthetic Gases:	Estimated consumption data calculated based on an average of actual data	Single carbon factor used	Sulbaek Anderson et	Entonox	N/A	litres

Scope	Aspect / Category	Consumption Data	Carbon Factor	Tab	Activity	Type(s)	Unit
	Nitrous Oxide (Entonox)	provided for Feb - Sept 2024 and extrapolated back to the baseline and forward to the end of 2024-25.	for all years reported	al. 2021 (GWP), Sherman et al. 2012 (Scope 3)			
Justification <ul style="list-style-type: none"> The consumption data used was estimated based on an average of actual data recorded data by LTHT for February-September 2024 and extrapolated back to the baseline and forward to the end of 2024-25. Compared to a benchmark of other Trusts providing similar services, it is assumed these figures have a good degree of accuracy. The carbon factor selected for the calculation is the industry standard for pure nitrous oxide use. 							
2	Electricity	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	UK electricity	Electricity generated	Country; Electricity: UK	kWh
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for electricity consumption in the UK (based on the National Grid). Variation applied where sites are powered by CHPs. Data on electricity consumption also includes electricity used for fleet EVs. 							
2	Heat & Steam	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	Uk heat and steam	Heat and steam generated	Heat and Steam, UK	kWh
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for heat and steam consumption in the UK. 							
3	Water Supply and Treatment	Actual recorded consumption data used for all months and years reported.	Single carbon factor used for all years reported	Water supply; Water treatment	Water supply; Water treatment	Sum of Water supply, Water treatment	cubic metres
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the sum of the industry standard for water supply and consumption, and the industry standard for water treatment. 							
3	Clinical Waste: Incineration	Actual recorded data used for all months and years reported.	Single carbon factor used for all years reported	Waste Disposal	Incineration (clinical waste) volume	Combustion	tonnes
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for the combustion of commercial waste. 							
3	Clinical Waste: Alternative	Actual recorded data used for all months and years reported.	Single carbon factor used for all years reported	Waste Disposal	Alternative (clinical waste) volume	Alternative treatment	tonnes
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for alternative treatment of commercial waste. 							
3	Clinical Waste: Offensive	Actual recorded data used for all months and years reported.	Single carbon factor used for all years reported	Waste Disposal	Offensive (clinical waste) volume	Combustion	tonnes
Justification							

Scope	Aspect / Category	Consumption Data	Carbon Factor	Tab	Activity	Type(s)	Unit
<ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for treatment of the combustion of offensive commercial waste. 							
3	Non-Clinical Waste: Domestic (Recycled)	Actual recorded data used for all months and years reported.	Single carbon factor used for all years reported	Waste Disposal	Waste recycling volume	Closed-loop recycling	tonnes
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for closed-loop recycling. 							
3	Non-Clinical Waste: Domestic (Incineration)	Actual recorded data used for all months and years reported.	Single carbon factor used for all years reported	Waste Disposal	Waste domestic volume	Combustion	tonnes
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all months and years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for combustion. 							
3	Non-Clinical Waste: Confidential	Actual recorded data used for all months and years reported.	Single carbon factor used for all years reported	Waste Disposal	Confidential waste volume	Closed loop recycling	tonnes
Justification <ul style="list-style-type: none"> The consumption data used was actual recorded data by LTHT for all years of the carbon footprint and is therefore of high accuracy. The carbon factor selected for the calculation is the industry standard for closed loop recycling of paper. 							
3	Business Travel (Estimate)	Estimated consumption data based on expenses.	N/A	N/A	N/A	N/A	N/A
Justification <ul style="list-style-type: none"> An estimate was used based on the Trust's previous submissions to NHSE for the annual Greener NHS fleet data returns, for which information is obtained on expenses paid for each mode of travel. 							
3	DPI Inhalers	Consumption data based on colleague estimates.	Single carbon factor used for all years reported	PrescQIPP published conversion factor	DPI/SMI Inhalers	N/A	per inhaler
Justification <ul style="list-style-type: none"> The consumption data used was based on estimates made by a LTHT colleague. Work needs to be done to validate these figures and increase accuracy, however compared to a benchmark of other Trusts providing similar services, it is assumed these figures have a good degree of accuracy. The carbon factor selected for the calculation is the industry standard for inhaler use. 							
3	MDI Inhalers	Consumption data based on colleague estimates.	Single carbon factor used for all years reported	PrescQIPP published conversion factor	MDI Inhalers	N/A	per inhaler
Justification <ul style="list-style-type: none"> The consumption data used was based on estimates made by a LTHT colleague. Work needs to be done to validate these figures and increase accuracy, however compared to a benchmark of other Trusts providing similar services, it is assumed these figures have a good degree of accuracy. The carbon factor selected for the calculation is the industry standard for inhaler use. 							

3.0 2024-25 CARBON PERFORMANCE

3.1 Overall Progress Against The Baseline

In the financial year 2024-25, the LTHT total recorded emissions have been calculated as 59,056 tCO₂e. This represents a 36% reduction from the 2013-14 baseline year, equivalent to a decrease of 32,837 tCO₂e. Compared with the previous year (2023-24), emissions decreased by 46 tCO₂e, as can be seen in Figure 2.

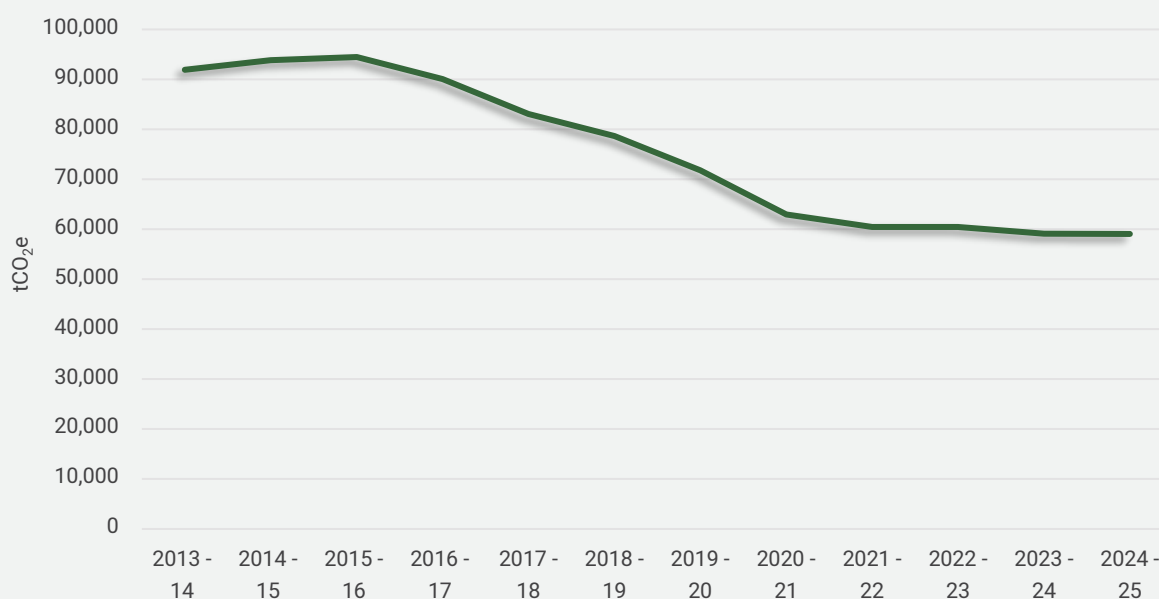


Figure 2: LTHT Total CO₂e Emissions

Since LTHT's previous carbon performance report, the Trust's baseline has been revised to include data (both actual and estimated) on several aspects which had not previously been recorded. This includes nitrous oxide (Pure and Entonox) and dry powder inhalers (DPIs) estimated by clinical colleagues, meaning the baseline emissions recorded in this report will differ from those in previous years. Work is being undertaken to continuously improve the accuracy of the data recorded and provided, however where actual data cannot be accessed, estimates have been calculated and cross referenced with existing data.

In 2024-25, the Trust's Scope 1 emissions (gas, oil, fleet, anaesthetic gases) accounted for 78% of the total recorded NHS Carbon Footprint emissions, Scope 2 (electricity) accounted for 7%, and Scope 3 (water, waste, business travel, inhalers) accounted for 15% (see Figure 3).

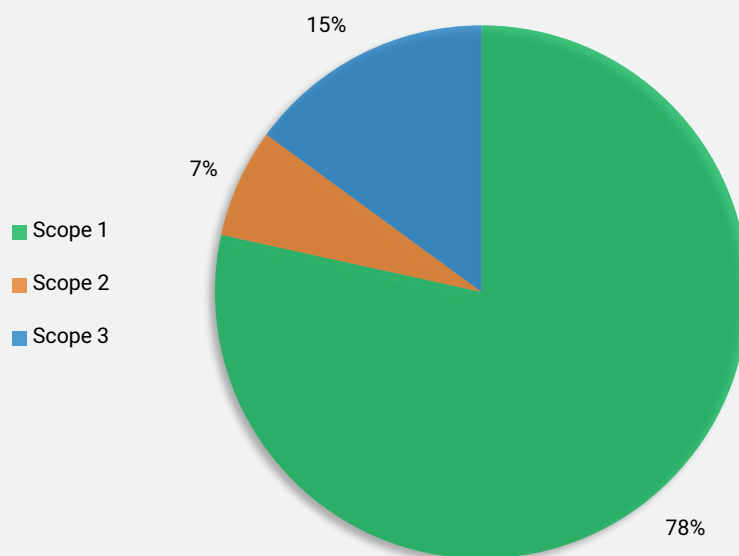


Figure 3: LTHT 2024-2025 Total Emissions by Scope

It is evident from Figure 4 that, whilst the Trust were on track to meet its NHS net-zero targets until 2021, progress on the Trust's carbon reduction has since plateaued, meaning the organisation is no longer aligned with this trajectory. However, the Trust's overall emissions pathway does remain consistent with the UK 2050 net-zero target. It is recognised that decarbonisation progress is not always linear. The ability of the Trust to deliver emissions reductions is heavily influenced by the availability of external funding, which varies annually and is dependent on the availability of resource and expertise. The Trust's Estates Decarbonisation Strategy (EDS) developed in 2022, estimated that approximately £52 million was necessary to ensure the 2040 net-zero goals are achieved. This strategy is now due a refresh in the coming year (2025-26), at which point the true cost of net-zero goals will be assessed using advanced digital software and modelling tools. The progress achieved to date has largely been enabled through the Public Sector Decarbonisation Scheme (PSDS), which has supported significant infrastructure upgrades and emissions reductions. However, the plateau in the trust's emissions performance since 2021 reflects the need for more action, both in terms of changes to the estate, and action taken by clinical staff where feasible and practicable. Provided the Trust secures future funding to implement its EDS, in addition to other projects such as Hospital of the Future (HoTF) and the decarbonisation of the Generating Station Complex (GSC), it will still be possible to achieve net-zero by 2040.

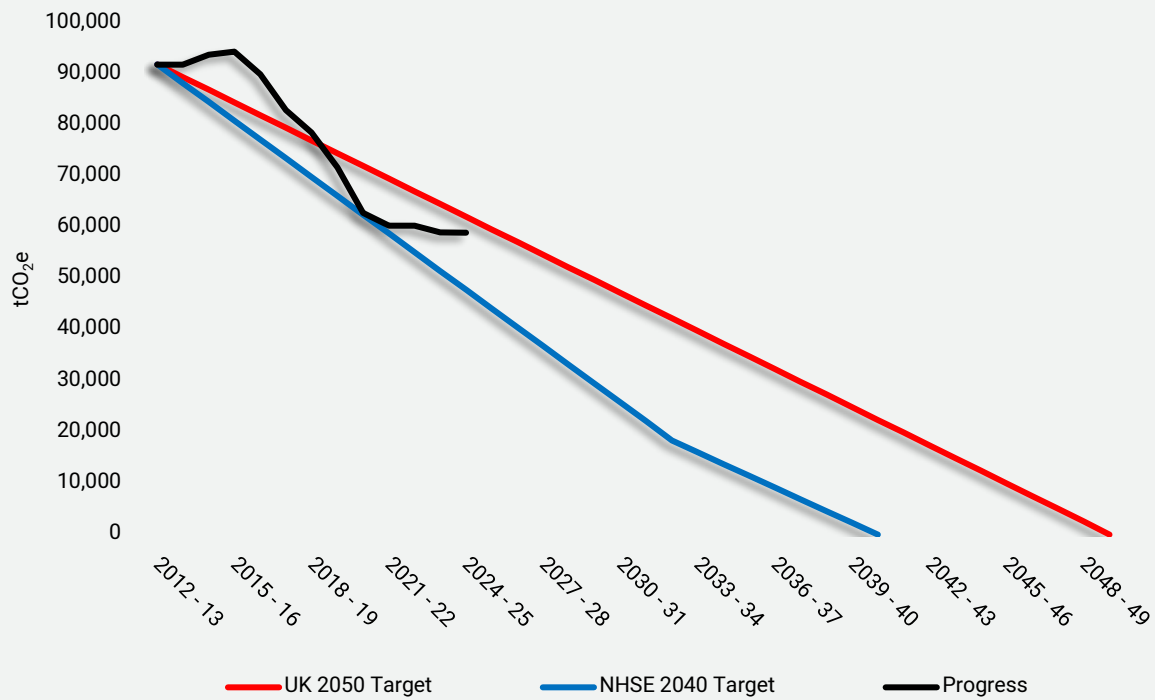


Figure 4: Carbon Reduction Progress & Targets

3.2 Key Sources of Emissions

In the 2024-25 reporting year, the Trust's carbon footprint was primarily driven by five key emissions sources:

1. Gas consumption;
2. Anaesthetic gases;
3. Electricity use;
4. Clinical waste; and
5. Business travel.

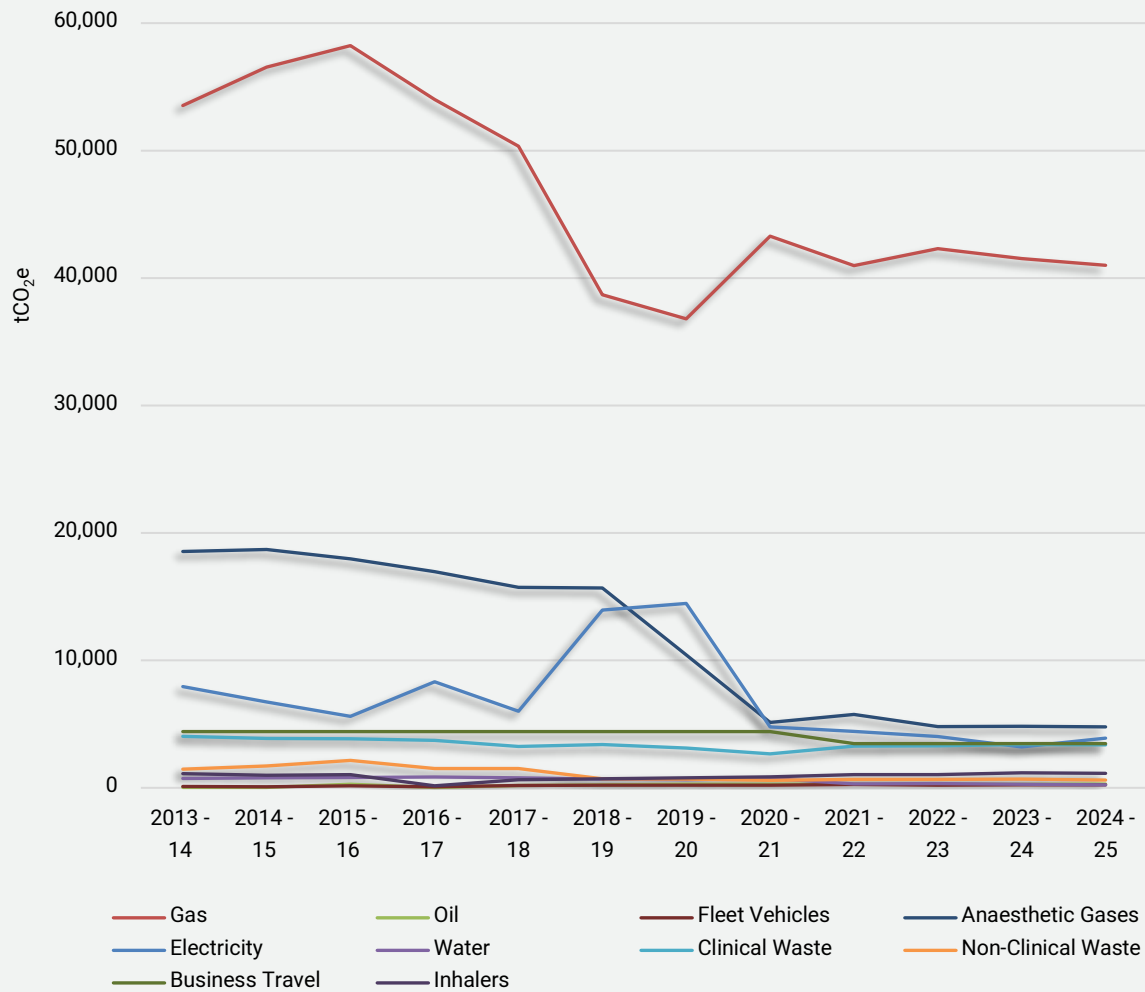


Figure 5: LTHT Emissions Annually

Together these categories represent approximately 96% of the total recorded CO₂e emissions produced by the Trust and are therefore discussed in more detail within this section. The breakdown of all emissions sources as a share of total recorded CO₂e is shown in Figure 6. The following section will examine each of these key emissions sources in more detail, including changes over time and the factors which have contributed to this.

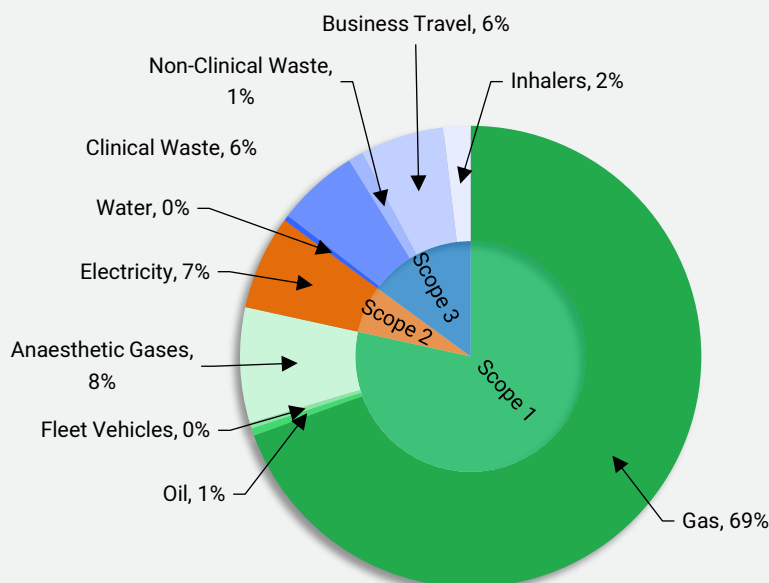


Figure 6: LTHT 2024-25 Total Emissions by Aspect

3.2.1 Gas

In 2024-25, emissions from natural gas use were the largest contributor to the Trust's total recorded carbon footprint, accounting for 69% of total recorded emissions, equivalent to 41,003 tCO₂e. This has remained consistent since the Trust's 2013-14 baseline year, as shown in Figure 5. The Trust has achieved a reduction of 12,538 tCO₂e in gas-related emissions since the baseline year, and a further 528 tCO₂e reduction compared to 2023-24. During this time period we have received substantial Public Sector Decarbonisation Scheme (PSDS) funding for the decarbonisation of the Trust's estate. This investment has enabled the implementation of a range of energy-saving measures, including double-glazing, roof replacements and air source heat pumps. These upgrades have enhanced the Trust's energy efficiency and contributed to a reduction in gas consumption across the estate.

Notably, a significant contributor to the Trust's high natural gas emissions is the on-site combined heat and power (CHP) units. While the CHP units increase gas consumption, they have provided a financial benefit to the Trust in comparison to direct purchase of electrical power from the grid. To reduce gas consumption, alternative on site generation technologies could be deployed, or connection to private wire or a power purchase agreement, however the financial impact would require further exploration and may not be viable at this time.

A comparison of quarterly emissions for 2013-14, 2023-24, and 2024-25 is presented in Figure 7, illustrating seasonal fluctuations. Notably, emissions tend to fall in Q2 (summer months) due to reduced heating demand across the estate. Q1 showed the most significant reduction in emissions when compared to the baseline year, reflecting greater operational awareness and efforts to minimise unnecessary heating use during the early part of the year. This highlights a growing culture of energy responsibility across the Trust and the positive impact of energy efficiency initiatives.

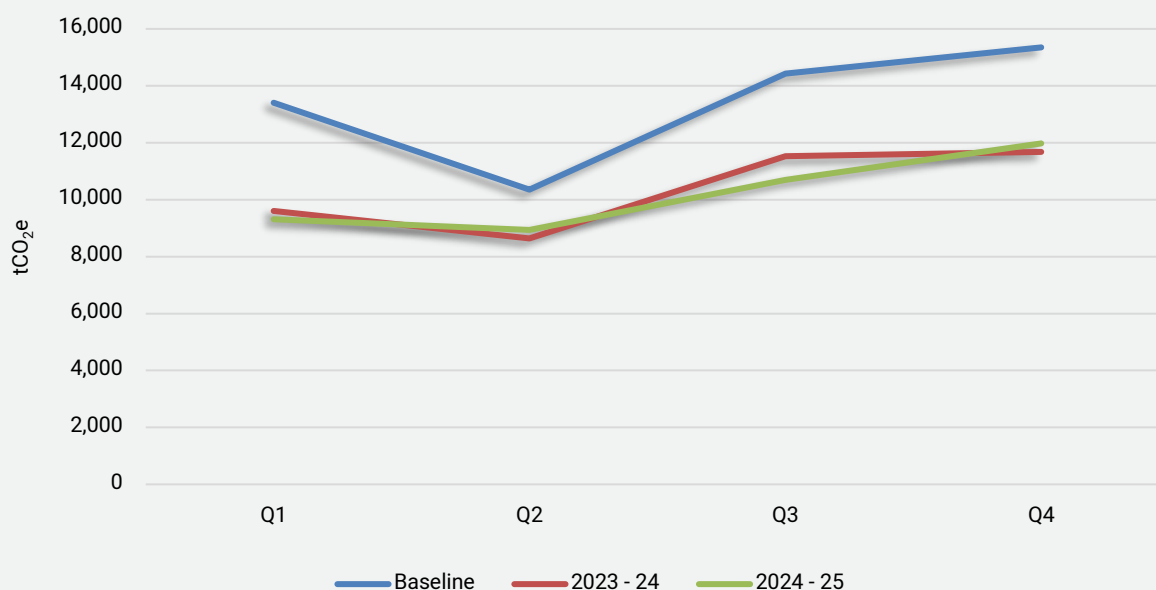


Figure 7: LTHT Quarterly Total Emissions from Gas

3.2.2 Anaesthetic Gases

In 2024-25, emissions from anaesthetic gases accounted for 8% of the Trust's total recorded carbon footprint, equivalent to 4,784 tCO₂e. Historically, LTHT has used a range of anaesthetic gases including desflurane, sevoflurane, isoflurane, nitrous oxide (pure), and Entonox. Despite being the second largest source of emissions this year, anaesthetic gases have seen the greatest overall reduction since the baseline year, with a 74% decrease in emissions. This significant reduction is due to the cessation of desflurane use across the Trust. In the Trust's 2013-14 baseline year, desflurane produced 6,761 tCO₂e, compared to only 755 tCO₂e from sevoflurane and 338 tCO₂e from isoflurane. This highlights how much of a positive impact the phasing out of desflurane has had on LTHT-wide emissions reductions. It is important to note that 2024-25 marks the first year in which emissions from nitrous oxide and Entonox have been formally recorded. To ensure consistency in reporting, an average based on this year's data has been used to extrapolate emissions back to the 2013-14 baseline year. As a result, the revised baseline emissions are higher than previously reported but provide a more

comprehensive and accurate reflection of the Trust's carbon impact. The trust will continue to monitor the use of anaesthetic gases closely and are exploring additional opportunities to minimise emissions from this source.

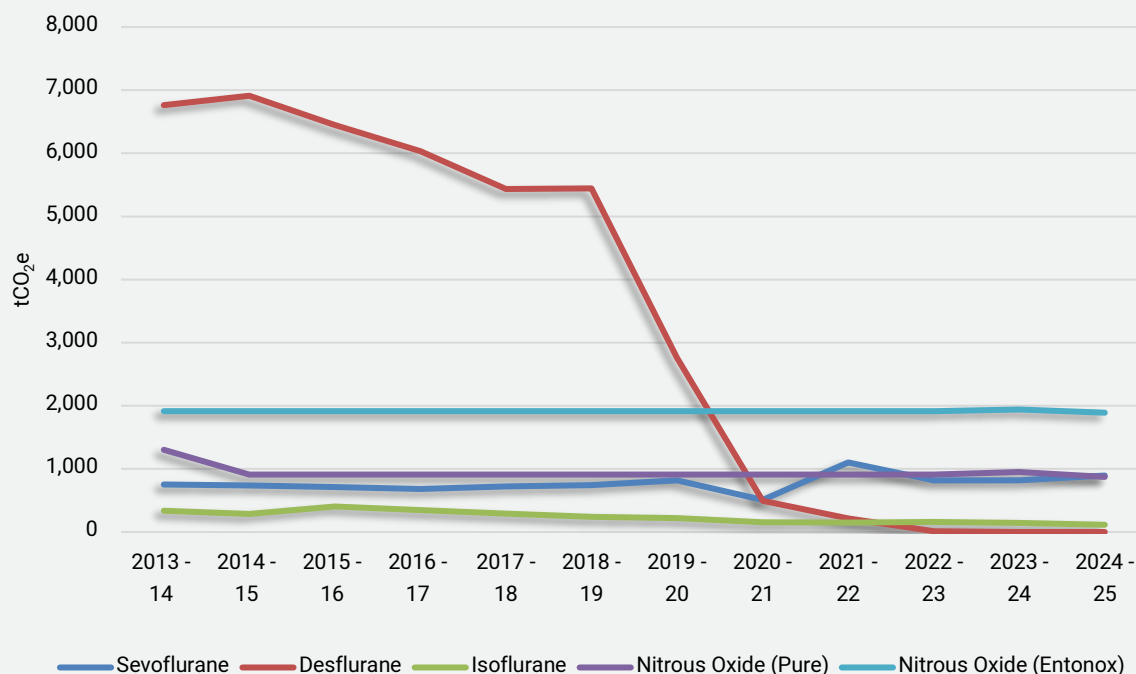


Figure 8: LTHT Total Annual Emissions from Anaesthetic Gases

3.2.3 Electricity

In 2024-25, electricity consumption (including that used for charging the Trust's electric fleet) accounted for 2,907 tCO₂e, representing 7% of the Trust's total recorded emissions. While electricity remains the third largest source of emissions for the Trust, it has reduced significantly since the 2013-14 baseline year. The Trust sources its electricity from the UK National Grid, which limits control over the specific generation mix (e.g., renewable vs fossil fuel-based). Accordingly, the emissions associated with electricity use are calculated using the UK grid average emission factor for the reporting year. Notable progress has been made in reducing electricity-related emissions, particularly since the 2019-20 reporting year, when the Trust achieved a substantial drop. This is in part due to the decarbonisation of UK grid electricity during this period, meaning further progress is dependent on the continuation in decarbonisation of the National Grid. Additionally, the installation of the CHPs has switched consumption away from electricity onto gas so this fall in electricity emissions was offset by an increase from gas emissions.

Although the reduction in emissions from electricity continued from this point to 2023-24, it has seen a rise from 2023-24 to present. This has been driven by the newly developed Pathology building which is fully electrified and powered by the CHP unit which is more carbon intensive than the use of grid electricity. Regardless of if this, we have still seen progress in emissions reductions from electricity consumption over the 11 years since the baseline. A key contributor to this progress has been the expansion of on-site renewables such as solar PV panels, made possible through funding from the Public Sector Decarbonisation Scheme (PSDS). This has been used to generate electricity for the estate and reduces reliance on the grid. A further action contributing to reduced emissions is the installation of LED lighting, which has improved energy efficiency and reduced demand for electricity.

Where possible, on-site generation such as additional solar PV panels will be developed. However, the city centre location of the Trust's two main sites limits our opportunities to expand this, along with a lack of funding to support it. It is also expected that the use of electricity will increase in coming years as we work to phase out use of the onsite CHP's and focus on importing green electricity. This is expected to reduce overall emissions but will likely increase the percentage from electricity.

A comparison of quarterly emissions for 2013-14, 2023-24, and 2024-25 is presented in Figure 9. In the baseline year (2013-14) and 2023-24, emissions saw a decline from Q2 to Q4, with emissions from this source peaking in Q2 for 2023-24. However, in 2024-25 emissions during Q2 were lowest for that year. Typically, increased temperatures in the UK during Q2 would result in an increase in demand for electricity used for cooling and ventilation, as seen during the 2023-24 reporting year. However, the lower emissions during this period of 2024-25 reflect the milder summer temperatures experienced during this year, where temperatures were the lowest experienced in nine years. Additionally, improved colleague awareness of switch-off policies and similar energy-saving measures may have contributed to this reduction in emissions during Q2.

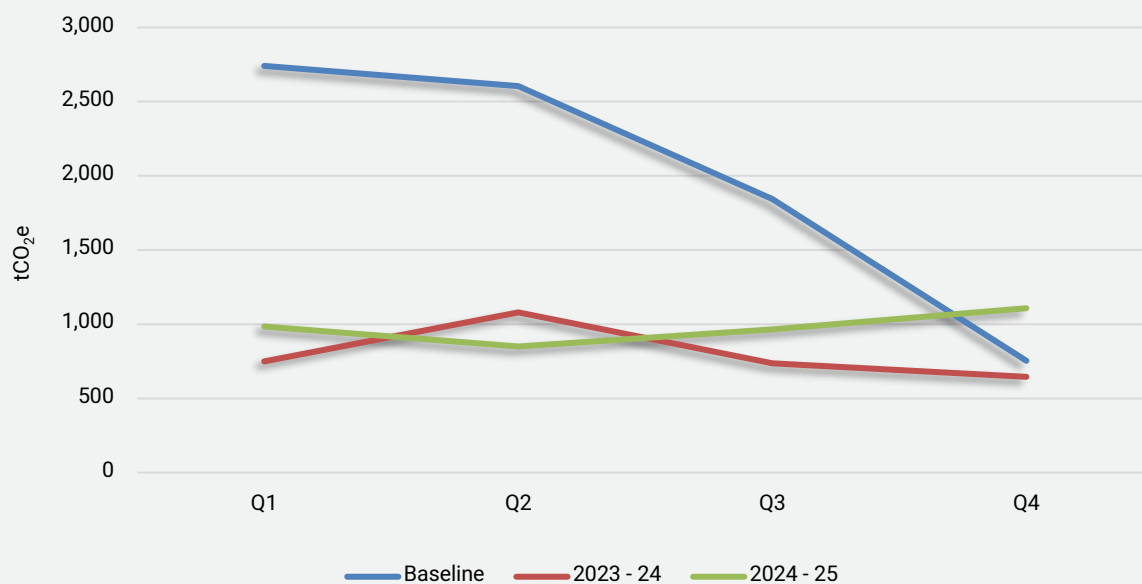


Figure 9: LTHT Quarterly Total Emissions from Electricity

3.2.4 Clinical Waste

Clinical waste includes all waste produced through operations which cannot be disposed of through the same routes as non-clinical waste, due to the harm it could cause to human health and the environment. At LTHT this is disposed of through incineration, alternative treatment, or offensive waste streams. In 2024-25, clinical waste accounted for 3,380 tCO₂e (6%) of LTHT total recorded emissions. This is a 659 tCO₂e reduction from the baseline year in which emissions from this source were 4,039 tCO₂e. Although clinical waste represents a smaller proportion of overall emissions compared to energy use, anaesthetic gases, or electricity use, it is still highly carbon-intensive due to both the unavoidably large quantity of this waste produced, and the energy required for high-temperature incineration and specialist handling. These processes are essential for regulatory compliance and infection prevention but contribute significantly to the environmental impact of the Trust's waste management. Where possible, the trust has sought to improve waste segregation to minimise the volume of non-infectious materials entering clinical waste streams, diverting more appropriate materials to less carbon-intensive general or recyclable waste routes. The Trust continues to work closely with clinical teams to educate and reduce avoidable clinical waste at the Trust.

3.2.5 Business Travel

Business travel also contributes to 6% of the total recorded emissions in 2024-25, with 3,470 tCO₂e from this source. This includes travel by staff for work-related purposes, such as car, taxi, and public transport journeys. Emissions for this category were calculated using an estimate based on the Trust's previous submissions to NHS England for the annual Greener

NHS fleet and travel data returns. These returns are informed by expense claim data, which details the mode of travel and associated distances or costs. Data was available for 2021-22, 2023-24, and 2024-25. For all other years, including the 2013-14 baseline, emissions were estimated using an average of the 2021-22 and 2023-24 figures. As a result, the baseline figure is not fully accurate and likely underestimates actual emissions for that year, particularly as significant efforts to reduce business travel emissions were made between the baseline and 2021-22 – the point from which the estimates begin. Therefore, direct comparisons with the baseline should be treated with caution. However, based on the estimates provided, emissions from business travel in 2024-25 are approximately 942 tCO₂e lower than those in the baseline year.

4.0 2025-26 CARBON FORECAST

Looking ahead to 2025-26, the Trust expects to see a measurable reduction in emissions as a result of several key decarbonisation initiatives already underway or planned for the coming year. Various actions committed to in the Green Plan 2025-28 and the Greener Care Plan to be published are set to commence in the 2025-26 financial year, the success of which will shape the trajectory of the Trust's achieved emissions from this point. A major development will be the transition away from the piped nitrous oxide systems to local, non-piped solutions across the estate. The manifolds within Jubilee Wing at LGI and the St. James' University Hospital site have now been disconnected, with preparations being made to disconnect Clarendon Wing at LGI. This change is anticipated to significantly reduce Scope 1 emissions related to anaesthetic gas use from the first 6 months of 2025.

Similarly, the trust will continue to expand its electric vehicle (EV) fleet, replacing petrol and diesel vehicles to reduce emissions associated with the fleet. As part of our estates decarbonisation efforts, the Trust have submitted Public Sector Decarbonisation Scheme (PSDS) 4 funding applications for a 2-year project running from 2025-27. Planned projects are targeted at building improvements and low-carbon heat upgrades. Plans are in place to connect more of the SJUH estate to the low-carbon heat network, contributing to the decarbonisation of the estate. In 2023, LTHT established a heat supply agreement with Leeds City Council to enable the connection of the SJUH low-carbon heat network to the Leeds PIPES district heat network. This provides the hospital with a low-carbon heat source, the effects of which are now being included within the Trust's carbon footprint. In addition, the Trust recently launched an inhaler recycling scheme to help mitigate emissions associated with MDI and DPI inhaler use. Beyond Trust initiatives, the continued decarbonisation of the UK's national electricity grid will further reduce the carbon intensity of electricity consumption, contributing to a reduction in Scope 2 emissions.

Further decarbonisation projects from which the Trust expects to successfully reduce emissions in the long-term and return the Trust's progress to within the net-zero trajectory include the implementation of the Hospitals of the Future (HoTF) project (see Figure 10). This government allocated funding, once provided, will help reduce emissions and alleviate current financial constraints impacting decarbonisation efforts. The Building the Leeds Way (BtLW) project team have been exploring opportunities for the Trust-wide utilisation of HoTF funding in building a new low-carbon hospital at LGI. This project is expected to massively reduce emissions at LGI and LTHT as a whole, however sufficient funding is necessary to enable its success and the project has recently been postponed, with construction starting from 2032.

In addition to the HoTF project, the Trust will continue to work alongside the University of Leeds to identify further opportunities to decarbonise the Generating Station Complex (GSC) (see Figure 10). Success of this will assist in the Trust's ability to achieve net-zero by 2040, keeping us on track to reach an 80% reduction by 2032 and therefore support the University of Leeds in reaching their ambition of net-zero by 2030. Overall, while progress remains dependent on funding outcomes and implementation timelines, the Trust is optimistic that 2025-26 will reflect the positive impact of these initiatives on the Trust's journey toward net-zero.

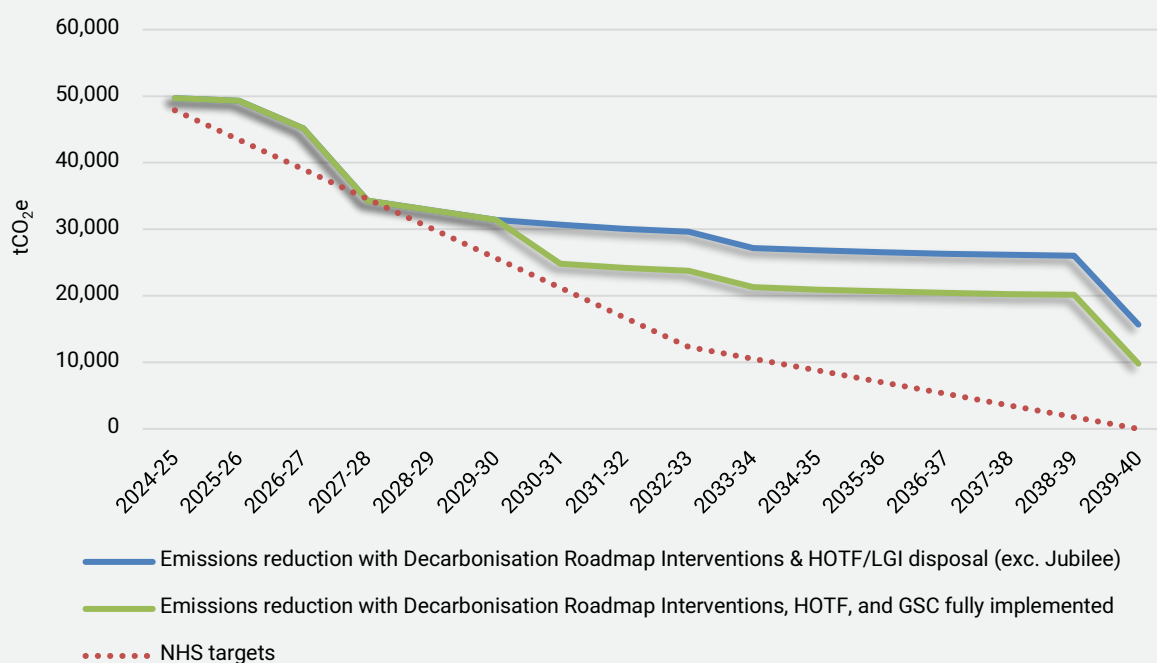


Figure 10: LTHT Estate Decarbonisation Targets

5.0 CONCLUSION

In the 2024-25 financial year, Leeds Teaching Hospitals Trust recorded a total of 59,056 tCO₂e emissions, representative of approximately a 35.73% reduction compared to the baseline year of 2013-14. However, since the 2023–24 reporting year, our total emissions have decreased by only 46tCO₂e – representing less than a 1% reduction compared to the previous year. This indicates a plateau in our recent emissions reduction efforts, highlighting the need for renewed and enhanced action in 2025-26 to remain on track with our net-zero targets. Nonetheless, progress has been made from the baseline year to date, supported by a combination of sustainability guidance provided by WRM, the implementation of decarbonisation projects through external funding, and the completion – either fully or partially – of carbon reduction measures outlined in the previous Green Plan. These initiatives continue to contribute positively toward our long-term net-zero targets.

One key area in which progress has been made is in the reduction of emissions from anaesthetic gases which the trust has successfully reduced by 74% compared to the baseline. The Trust expect this figure to further reduce over the next year as the Trust works to reduce its reliance on piped nitrous oxide systems. Another area of significant improvement since the baseline year has been in reducing emissions from gas consumption which has fallen by 23% since the baseline due to successful implementation of decarbonisation projects resulting from PSDS funding. To ensure further progress is made and the Trust returns to its trajectory for reaching net-zero by 2040, the Trust require substantial funding and sustained investment and support.

The Trust remain committed to its 2040 net-zero target and will continue to embed sustainability across all areas of the organisation, seeking funding opportunities where possible. The Trust is confident that the existing and planned decarbonisation projects, once implemented, will be successful in ensuring the targets are met, and the 2025-26 carbon footprint more accurately represents the progress the Trust is continuously seeking to make. However, the delivery of these targets are contingent upon the drawdown of significant funding to implement the estates decarbonisation strategy. The future clinical strategy, and allocation of funding for decarbonisation projects, remains the biggest risk to the ability of LTHT to meet future net zero targets.

6.0 REFERENCES

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