University of Reading
Net Zero Carbon Plan
2025 - 2040

Date: 15 May 2025

Contents

1 Executive Summary

University of Reading is committed to becoming Net Zero Carbon by 2030, both across its entire built estate and also key elements of its scope 3 emissions, particularly relating to business and student academic travel.

When the University's first Net Zero Plan was published in 2021, its scope was in line with best practice for the sector, whilst also committing to investigate an expanded emissions scope. Carbon reporting guidance for the higher education sector has evolved since then, and we are pleased to set out in this updated Plan commitments to further reduce a much wider scope emissions over which we have influence, along with clear timescales for doing so.

The updated headline targets are for the University to:

- **Reduce its existing carbon emissions scope to net zero by 2030** *(against a 2008/09 baseline)*
- **Reduce all scope 1 & 2 emissions to net zero by 2035** *(against a 2008/09 baseline)*
- **Reduce all scope 3 emissions by at least 40% and 70% by 2035 and 2040 respectively** *(against a 2023/24 baseline)*

It is important that such targets stand up to scrutiny, and with this in mind, the University has sought to align with the principles of the Science Based Targets initiative (SBTI)[1] wherever possible. In doing so, some minor adjustments have been made to our current and future scopes, which are detailed in this updated Plan.

Our carbon emissions have continued to fall, standing at 63.0% below the 2008/09 baseline by July 2024, but there is much to do and the time for delivery is now. Meanwhile, the funding landscape has changed, and whilst we have been successful in securing significant grant funding over the last few years, such opportunities are not available to the University moving forwards. A new approach to funding is therefore set out in this updated Plan.

Delivery itself remains structured around 3 key principles set out in our original Plan:

A. **All heating systems to be replaced**
B. **Better electrical energy** - reducing waste, improving efficiency, ensuring low carbon supplies
C. **Capping and capturing residual emissions**, including through carbon insetting/offsetting

This Plan is one part of a much wider, recently updated University Estates Strategy and must integrate and be a core part of that Strategy to have the best chance of success. The landscape has changed, but our commitment to sustainability leadership remains strong. Delivering on this Plan will enable the University to demonstrate it not only leads in researching and teaching environmental sustainability, but that it leads by example in delivering a low carbon University for the future.

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[1] Standard for setting emissions reduction targets in line with best-practice - https://sciencebasedtargets.org/. We have sought to align with the updated version 2.0 standard, to ensure alignment with the latest principles.

2 Introduction

Since the University of Reading published its first Net Zero Carbon Plan in 2021, significant progress has been made, both in cutting carbon emissions specifically, as well as in more broadly cementing the University's reputation as a sustainability leader. This includes being named as the Times and Sunday Times Sustainable University of the Year for 2025[2] as well as 3 consecutive top 4 placings in the People & Planet University League[3], including first place in 2023/24. The Times and Sunday Times commented that the University had *"…made an impressive headway towards its ambition of being one of the greenest universities in the world".*

Carbon reductions for the most recent financial year to July 2024 stand at **63.0%[4] below its 2008/09 baseline**; ahead of the latest interim target of 57.5% for that date. This builds on the University's long track record of delivering on its carbon reduction targets, including once again being the best research-intensive University for carbon emissions reductions[5].

Cumulative financial savings now stand at **£51.4 million** for the University, while the **cumulative carbon reductions of 265,363 tCO_2** are equivalent to taking all of the road traffic off the Borough of Reading for just under 2 years[6].

This updated Net Zero Plan forms a part of the wider University Estates Strategy and reflects our maturing understanding of the practical solutions to delivery, as well as our thinking and approach to our wider carbon emissions beyond the scope of our original Plan. It provides new detail on our specific proposed pathway to net zero for our original scope of emissions, as well as detailing and setting reduction targets across a much wider complete scope of emissions for the first time. These measurements have been made in line with the new Standard Carbon Emissions Framework (SCEF) for the higher education sector, published by the EAUC[7] following sector consultation, including through the Platinum Jubilee Challenge in which the University participated. Our new targets strive to align with the Science Based Targets initiative (SBTI)[8] principles, to provide confidence in their appropriateness in line with best practice thinking and demonstrate continued sustainability leadership in the higher education sector.

The funding landscape for decarbonisation has also changed, restricting available options, but also giving a clearer focus for how funding needs to be approached (discussed further in section 10).

The **University's climate change research is world-leading**, with the University having the most lead authors in Working Group I for the 6th Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC)[9] published in 2021. It has therefore long understood the urgent need for sustained and substantial action to mitigate the causes, as well as adapt to the consequences of global climate change.

This updated Net Zero Plan sets a clear pathway to delivering net zero against the University's key carbon emission sources by 2030 and further commitments to continue to reduce wider emissions over the following 10 years; well-ahead of the UK Government's commitment to be net zero by 2050[10].

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[2] *Reading named Sunday Times Sustainable University of the Year 2025 - University of Reading*
[3] *Reading University People and Planet ranking 2024 2025 - University of Reading*
[4] *This differs to the 59.7% reported in our Annual Environmental Sustainability report, due to adjustments to our emissions scope, details in section 3.1*
[5] *Analysis of 2022/23 Estates Management | HESA data, using AUDE institution classifications*
[6] *To July 2024. Analysis of UK local authority and regional greenhouse gas emissions statistics, 2005 to 2022 - GOV.UK*
[7] *Standardised Carbon Emissions Framework (SCEF) | EAUC*
[8] *Standard for setting emissions reduction targets in line with best-practice - https://sciencebasedtargets.org/*
[9] *https://www.reading.ac.uk/news-and-events/releases/PR762869.aspx*
[10] *Net Zero Strategy: Build Back Greener - GOV.UK*

Work is currently underway separately to create a complementary Climate Adaptation Plan, setting out how the University is currently responding to a changing climate and what future actions across the organisation it will take to plan for further changes.

3 Defining Net Zero

The term 'net zero carbon' can be defined as 'cutting greenhouse gas emissions to as little as possible and then balancing the remainder by enhancing carbon sinks which remove carbon dioxide from the atmosphere'.

In summer 2019, a zero carbon workshop was held with representatives from the University Executive Board, which highlighted that any emissions reduction target should be:

- authentic in their ambition; going beyond simply 'scope 1 and 2' emissions (see 'Scope' below) to align with the latest thinking on setting legitimate zero carbon, science-based targets
- sector-leading in both the level, and the scope of its ambition
- aligned with wider sustainability leadership across the University's operations, to ensure that this is seen as part of a package of strong environmental stewardship

These remain relevant guiding principles. In particular, our 2021 Plan stated that "the University will seek to further understand and reduce its scope 3 'indirect' emissions in line with best practice thinking", which is now fully addressed in our new Plan. Our commitment not just to align with SCEF reporting guidelines, but then to set new reduction targets against this expanded scope of emissions, places us at the forefront of higher education sector leadership. Department for Education have now adopted SCEF as the reporting guidance for the higher education sector[11].

Aligning with SCEF means extending the scope of our emissions reporting and the logical consequence of that is the need to set new and more nuanced targets for different areas of our emissions, delivering significant further reductions in our environmental impacts.

Appendix 1 details the University's full carbon emission inventory.

3.1 Headline 2030 Net Zero Target

The scope of emissions included in our commitment to reach Net Zero by 2030 will be slightly revised in line with SCEF (and the GHG Protocol[12]) guidance on carbon reporting.

Three key changes have been made:

- Scope 1 – emissions from electrical (diesel) generators and temporary (gas or oil) boilers are now recorded and included within scope
- Scope 3 – student group travel emissions are now recorded and included within scope
- Scope 3 – UPP-run halls of residence have historically been treated as scope 1 and 2 emissions, but are more accurately scope 3 'downstream leased asset' emissions, along with other tenanted buildings. All downstream leased assets are now treated the same, with clear reduction targets set for 2035 and 2040.

Progress will continue to be reported against the University's re-baselined 2008/09 emissions, however in order to align with the principles of the SBTi, externally published comparisons will also be made against a 2015/16 baseline across all scope 1 and 2 emissions and against a 2023/24 baseline for all scope 3 emissions.

The headline target on this existing scope of emissions (against both a 2008/09 and 2015/16 baseline) will continue to be to:

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[11] https://www.gov.uk/guidance/sustainability-leadership-and-climate-action-plans-in-education

[12] *The International Greenhouse Gas Protocol for standardised carbon reporting* - Homepage | GHG Protocol

"Reduce its existing carbon emissions scope to net zero by 2030"

For clarity, the end of the University's financial year, 31 July, is the specific target date.

SBTi now advocate for separate targets to be defined for scope 1 and 2 emissions. This headline target therefore includes:

- At least a 90% reduction in scope 1 emissions by 2030 (before offsetting)
- At least a 90% reduction in scope 2 emissions by 2030 using location-based emissions reporting, and zero emission electricity from a market-based perspective[13] (before offsetting)

Figure 1 illustrates the scopes and targets for emission reductions for 2030, 2035 and 2040.

3.2 Net Zero Targets for 2035 and 2040

Further consideration has been given to all emissions that were previously considered outside of the scope of our Net Zero target, with measurements made and new reduction targets set.

Appendix 1 details the University's full carbon emission inventory, alongside individual targets that are proposed for each line of that inventory.

3.2.1 Scope 1 & 2

A new scope 1 & 2 target, including land and livestock (or FLAG[14]) emissions for the first time, will be to:

"Reduce all scope 1 & 2 emissions to net zero by 2035"

This wider target includes at least a 90% reduction against both a 2008/09 and a 2015/16 baseline, which is in line with SBTi guidelines, made up from at least an 85% reduction in scope 1 emissions and targeted 99% reduction in scope 2 emissions against both baselines.

SBTi advocates that all organisations whose FLAG emissions account for more than 20% of their total emissions must set specific targets in relation to their reduction. The University falls well below this threshold, but is nevertheless setting targets aligned with SBTi's general principles.

FLAG emissions are specifically targeted for at least a 72% reduction in scope 1 emissions by 2035. Plans to relocate the farm and radically overhaul its operational model mean an earlier deadline is not appropriate.

3.2.2 Scope 3

A specific new overarching scope 3 target is introduced to:

"Reduce all scope 3 emissions by at least 40% and 70% by 2035 and 2040 respectively against a 2023/24 baseline"

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[13] Location-based reporting uses average grid electricity carbon factors, whereas market-based reporting takes into account the source of electricity purchased through supply contracts. Both should be stated for transparency.

[14] SBTi use the acronym FLAG - Forest, Land and Agriculture emissions - https://sciencebasedtargets.org/sectors/forest-land-and-agriculture

This covers a vastly expanded inventory of all of our scope 3 emissions (see Appendix 1), except that the scope 3 emissions of the University's (scope 3) investments have currently been excluded from scope, due to a current lack of reliable data[15].

A 2023/24 baseline is used for this full set of scope 3 emissions, which is the first time all these emissions have been quantified, aligning with the SBTi principle to have a single baseline year for all scope 3 emissions. However, progress against the original 2030 net zero target and scope will also continue to report internally and externally against a 2008/09 baseline for consistency.

The overarching target covers our full scope 3 emissions, therefore aligning with SBTI's principles, which require targets for any strand of scope 3 emissions which:

- Constitute more than 5% of total scope 3
- Involve exposure to emissions-intensive activities - *which, for the University, means agricultural products, industry (construction products), transport (services and leased assets) and energy*

It also aligns with the principle that reductions should be targeted "…at a rate consistent with reaching net zero emissions by 2050". Appendix 1 details the individual targets proposed for each line of the University's scope 3 emissions. These do not yet quite align with SBTi guidelines, as not all of these are yet fully aligned with reaching net zero by 2050, particularly in relation to travel emissions from business travel and start/end of term student travel. SBTi's Aviation Sector Guidance[16] suggests the aviation sector will be required to reduce average carbon intensity per passenger by ~65% from 2019-2050, but our more conservative assumption is only for a 20% by 2040. It would therefore be sensible to review these assumptions further over time and perhaps target more ambitious travel emission reductions.

Figure 1 illustrates the scopes and targets for emission reductions for 2030, 2035 and 2040.

3.3 Offsetting

The role for carbon insetting and/or offsetting is yet to be fully determined, but will be developed further in the coming years. In simple terms, this should aim to ensure that local, national and/or international carbon sinks are enhanced to remove the equivalent carbon dioxide emissions from the atmosphere. Insetting would seek to address this on our own land whereas offsetting would be external to the University's estate (SBTi recommend this approach is limited to counteracting FLAG emissions only). However, there is a lot of scepticism about the effectiveness of offsetting schemes and therefore the approach to this must be carefully considered, consulted on and agreed.

3.4 Milestone Targets

In order to maintain a sense of momentum and ensure progress towards our 2030 goal, interim milestone targets were set in the original Net Zero Plan. The July 2024 target of a 57.5% reduction target against our original baseline 'in scope' emissions has been met, with the next interim target being a 70% reduction against baseline by July 2027, which is retained for this new Plan.

Further interim targets should be set for latter years as 2030 approaches.

3.5 Scope

Figure 1 illustrates the scopes and targets for emission reductions for 2030, 2035 and 2040.

Figure 1 - University of Reading carbon emission scopes and targets

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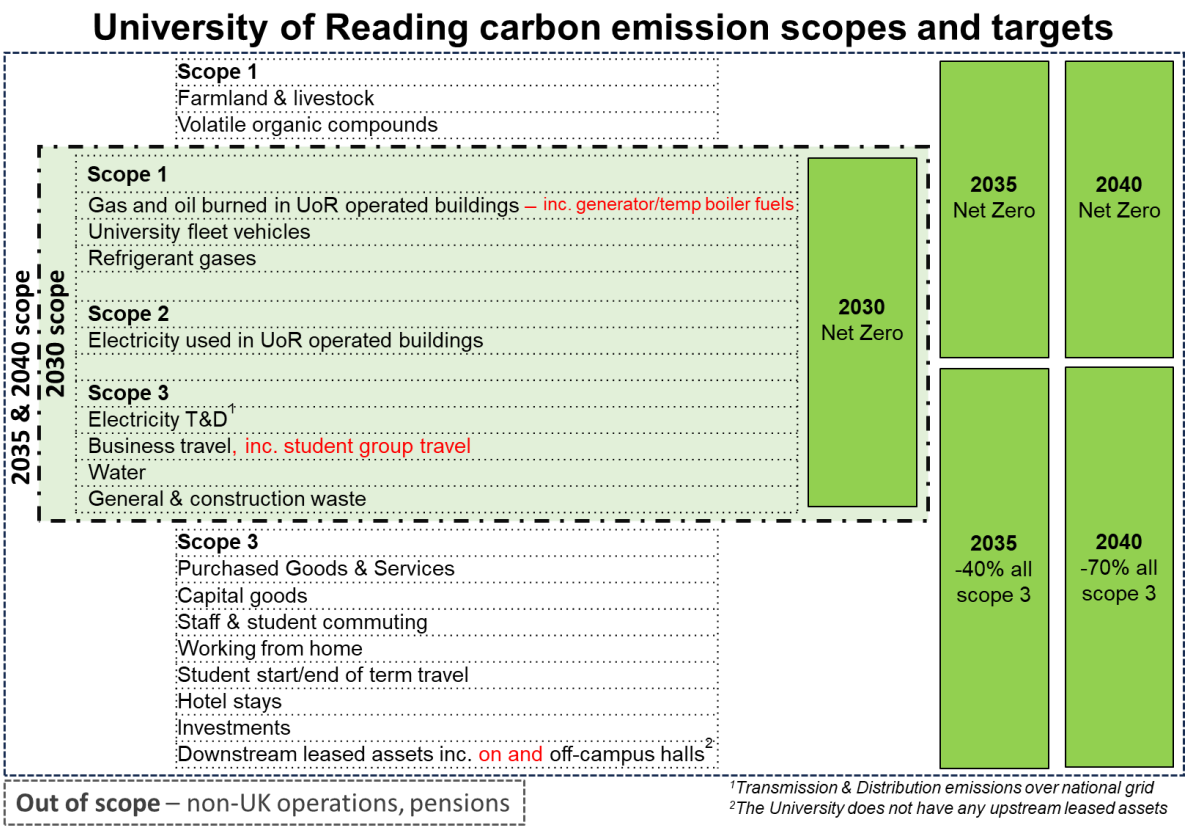
[15] These are the scope 3 emissions of the University's investments; i.e. the supply chain of our investment supply chain, for which reliable data is hard to obtain, and is limited in what influence the University realistically has here

[16] SBTi Aviation Guidance Aug 2021



Items in **red** highlight the changes to the existing 2030 scope detailed in section 3.1.

This expanded scope now fully addresses the action identified in the 2021 Net Zero Plan to address out of scope emission *"…areas for further investigation and potential future action".*

Progress will continue to be reported against the headline 2030 target initially, but increasingly also reported against the 2035 and 2040 targets as well.

4 2030 Zero Carbon Pathway

The simple A, B, C headline approach identified in the original Net Zero Plan to deliver the University's net zero carbon ambitions continues to be relevant:

A. All heating systems to be replaced with low/zero carbon alternatives;
B. **Better electrical energy** - reducing waste, improving efficiency and ensuring electrical supplies are as low carbon as possible, and;
C. **Capping and capturing residual emissions**, including through policy and technology alternatives and carbon insetting/offsetting.

As stated in the 2021 Net Zero Plan, an 'efficiency-first' approach to full carbon reduction is felt to be too idealistic to deliver deep carbon emission cuts over a short timescale and the primary focus is therefore on decarbonising existing energy supplies. Where possible however, energy efficiency opportunities should continue to be considered at the same time, not least because they are most likely to save money; helping to support wider carbon reduction initiatives.

Each of these high-level areas are discussed in more detail in sections 5, 6 and 7.

4.1 Business as usual

Utilities consumption is assumed to grow at 1% per annum without intervention, while business as usual travel emissions are assumed to have peaked in 2018/19 (pre-COVID). These assumptions are used to compare actual emissions against baselines to understand cumulative savings.

4.2 Reduced Emissions Scenario

Figure 2 shows the proposed pathway to achieve net zero carbon emissions by 2030, taking emissions to 83% below baseline before any offsetting.

NB: The adjustments to the 2030 emissions scope, set out in section 3.1, mean that the University's adjusted progress against the 2008/09 baseline is now 63%, rather than the 59.7% reported in our Annual Environmental Sustainability report.

4.3 Legitimacy and strength of ambition

The original 2021 Net Zero Carbon Plan set out the following tests to ensure the University's plans are rigorous and legitimate:

- **Emissions boundary**: as a minimum, 100% of scope 1 and 2 emissions should be covered by the target. Best practice is to also include at least 66% of scope 3 emissions, and leaders will include 100% of scope 3 emissions. A commitment to further investigate the additional scope 3 emissions sources should be included.
- **Ambition and timescales:** as a minimum, scope 1 and 2 reduction targets should be in line with a science-based trajectory. This means the University's milestone and final targets should be consistent with using a well-below 2°C global warming scenario. Inclusion of scope 3 emissions will show leadership in the sector.
- **Reduction strategy**: The assumptions and calculations used in the net zero pathway and the associated projected annual reductions should be robust and realistic, assuming that sufficient funding is made available.
- **Removals strategy**: To achieve a net zero position by 2030, emissions removals (offsets or insets) will be required. It is best practice to take the time to develop a detailed removals strategy so that the selected projects align with the values of the University and maximise overall impact to society and the environment. The approach, quality and cost of removals will therefore be key factors in the University's removals strategy. The University should prioritise the reduction of emissions on an absolute basis and slowly build up a portfolio of high-quality removals projects.

This updated Plan continues to strengthen our alignment with these original principles, including by seeking to align as far as possible with both the current and draft update future SBTi guidance on carbon emission target setting.

The University could consider employing a third party to verify the strength of their ambitions, and the validity of subsequently reported progress.

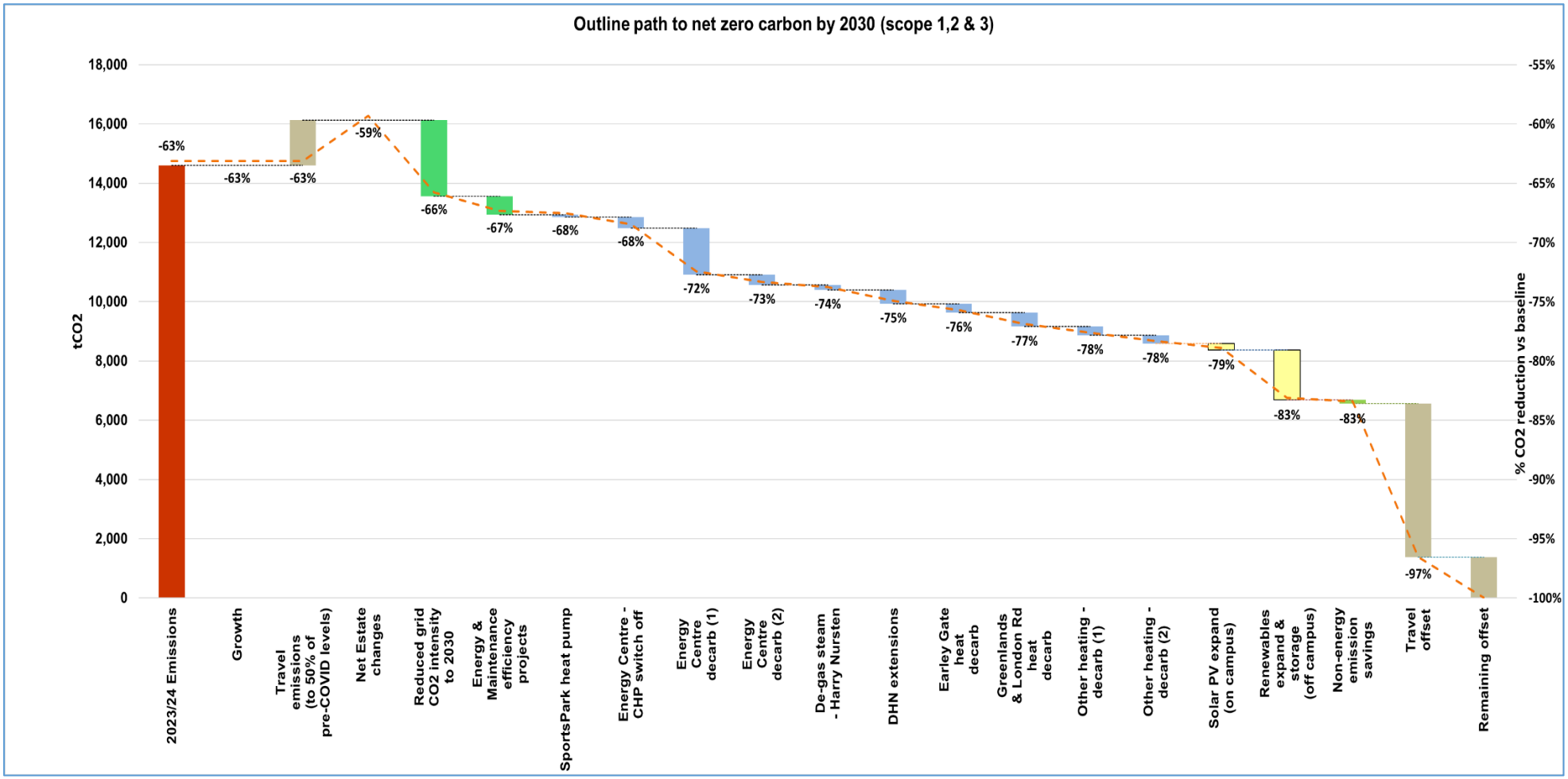


Figure 2 - steps to achieving net zero carbon by 2030

5 A – All heat decarbonised

The 2021 Net Zero Plan identified the need for a mass switch over from gas (and oil at Greenlands) boilers to electric heat pumps. A complementary Heat Decarbonisation Plan was produced in late 2021, from which the key analysis is updated and presented here. Figure 3 shows the scaled breakdown of carbon emissions from fossil fuel heating systems across the estate.

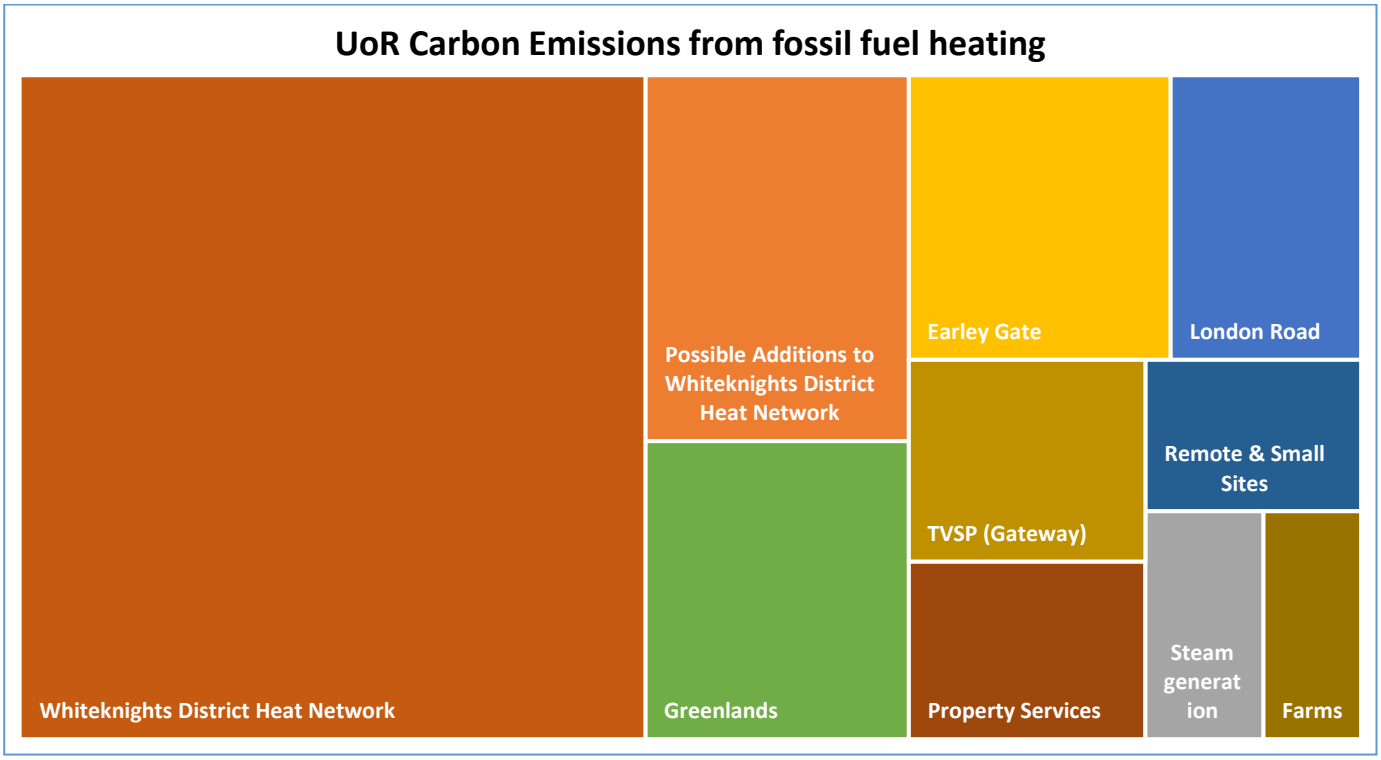


Figure 3 – scaled breakdown of carbon emissions of fossil fuel heating across estate

The only other established low carbon heating alternatives to heat pumps are biomass or direct electric heating. The University have long been opposed to considering biomass from a maintenance and operational perspective, and the environmental credentials of such schemes can also be questionable. Direct electric heating may be relevant in some specific circumstances, however such systems are costly to run and will not be a main focus.

Meanwhile, the Climate Change Committee's recent Seventh Carbon Budget[17] states that *"…we see no role for hydrogen in buildings heating and only a very niche, if any, role in surface transport"*.

5.1 Whiteknights

Whiteknights accounts for 69% of the total heating-related carbon emissions, across the current and potential district heating network, steam generation and Earley Gate buildings. This underlines the need to focus on decarbonising the existing Whiteknights' district heating, as well as seeking opportunities to extend it. In 2023, the University secured a £2.2 million grant from the GHNF to part-fund the installation of an open loop heat pump into the Energy Centre, delivering flow temperatures similar to the current set up of 80˚C - 85˚C. This project seeks to make use of the below-ground aquifer, by extracting water from it, running that through a heat exchanger to extract heat that is then multiplied up by a large heat pump to provide usable low carbon heat for the district heating network. The cooled water will be used in a new district cooling network to nearby science

[17] *The Seventh Carbon Budget - Climate Change Committee – Accessed 9 May 2025*

buildings, providing a free source of cooling (through more heat exchangers) before returning the water to the aquifer.

Two pairs of extraction and injection boreholes have been drilled, demonstrating the required volumes of water are available to provide heat to the proposed 1 MW_{th} heat pump and approximately 50% of the annual heating demand of the Energy Centre. The Environment Agency abstraction licence has been obtained and the associated discharge licence application is in progress.

Currently however, the project is on hold, due to escalating costs. However Triple Point, the administrators of GHNF, have agreed to give the University an extension until December 2025 to submit a revised proposal of how we now intend to use the grant, potentially for a different scope of work and with a different match funding approach. Funding is discussed further in section 10, but it is now proposed to seek to develop a larger scheme, including potential opportunities to:

- Deliver the planned Energy Centre open-loop heat pump
- Extend this to cover full decarbonisation of the Energy Centre
- Expand the District Heating Network to more building on the west of Whiteknights campus, as well as potentially including Earley Gate on the east of Whiteknights.
- Consideration of opportunities to include on-campus UPP halls of residence and other potential commercial tenants
- Consider the potential for further ground source heat, including from the below ground aquifer as well as potentially from sewers on campus[18], together with an appropriate role for air source heat pumps.

Figure 4 shows a heat map of the potential heat loads that could be added into a campus-wide district heating scheme, totalling 31.2 GWh including major commercial tenants.

In 2024, the University commissioned an electrical capacity study for its Whiteknights campus. The University currently holds a 10 MVa supply capacity agreement, however physically, a 15 MVa supply exists. The report concluded that the 15 MVa supply capacity would potentially be enough to provide the University's future electrical needs for fully decarbonised University buildings (though not for its tenants too). The study took a conservative view to many assumptions and it is likely that there will be further spare capacity for additional tenant building decarbonisation, though this will require more detailed review as initiatives progress. An application has therefore been submitted to SSE Networks for the full 15 MVa supply. SSEN have currently indicated it may be 2030 before this can be made available, but it appears likely that the Government's Clean Energy Plan will help bring this date forward.

5.1.1 Combined Heat and Power (CHP)

As the 2021 Net Zero Plan foresaw, the CHP engine in the Energy Centre is increasingly unattractive from a carbon reduction perspective, now accounting for more carbon emissions than relying on gas boilers and taking the equivalent electricity from the national grid that the engine currently produces. This is principally because the national electricity grid is a lot less carbon intensive than when the engine was first installed in 2015. With the engine about to require a major rebuild, it is good timing to implement plans for removal of the engine and this is intended to take place in 2025/26 once some of the current gas boilers have been updated (which are also reaching the end of their original life).

This is anticipated to reduce the University's carbon footprint by 374 tCO_2 in the first full year alone, meaning it is actually one of the most cost-effective next steps the University can take to decarbonise.

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[18] *As Borders College have successfully done - https://www.theukwaterpartnership.org/wp-content/uploads/2022/08/1614002560-multilinefile-253-borders-college-case-study-4-1.pdf*

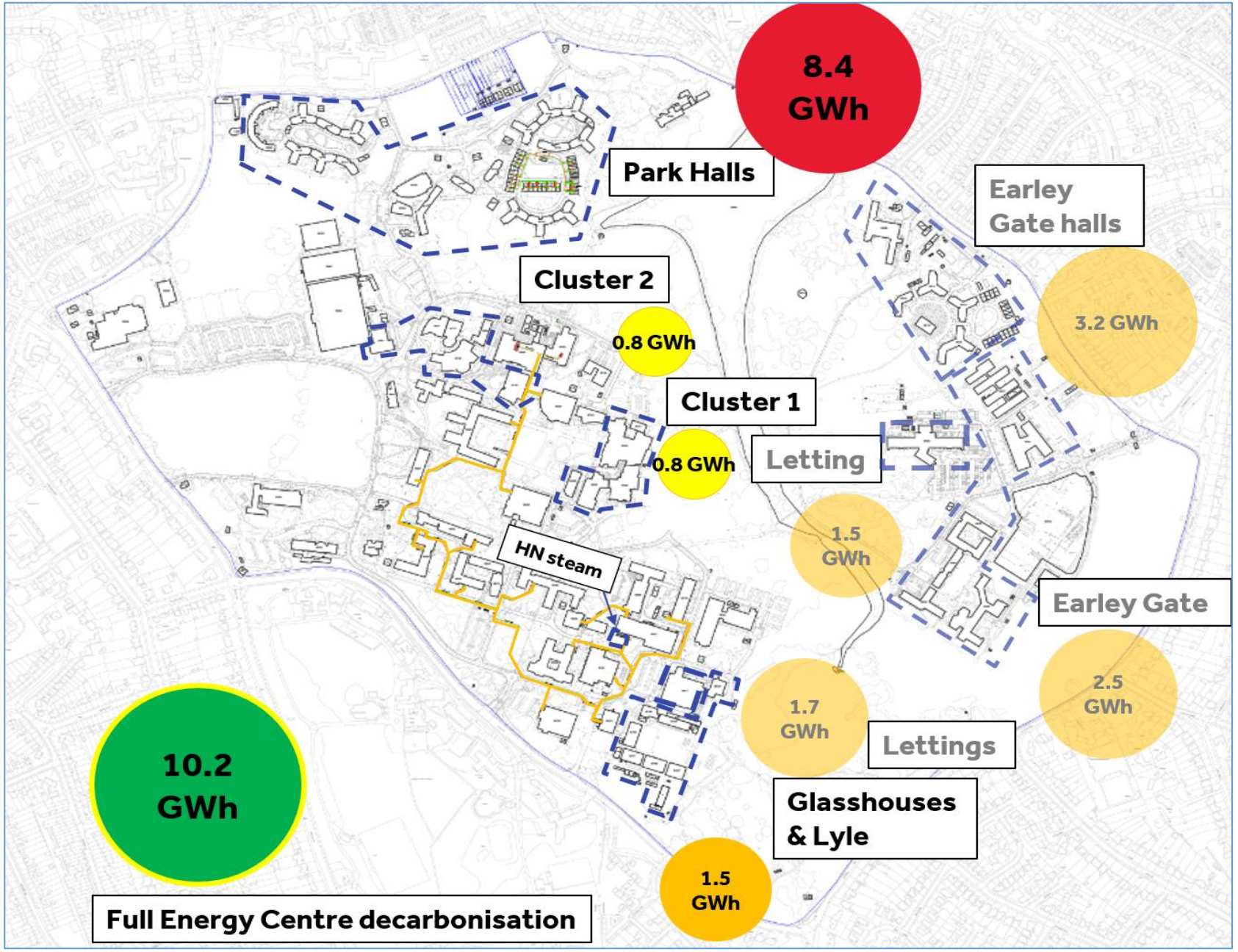

Figure 4 - Whiteknights heat map

5.1.2 Steam

There are only 2 significant requirements for process steam on the estate; in the Health & Life Science building and the Harry Nursten (Food & Pharmacy) building. Health & Life Science's steam requirements have recently been significantly redesigned, localising much of the provision using electric rather than gas-fired systems and the remaining centralised gas steam boilers have also now been switched to electric. This just leaves Harry Nursten's steam to electrify, which will deliver significant maintenance cost savings as well as reducing carbon emissions once it can be implemented. Designs for this work are currently being finalised, with revenue funding earmarked for 2025/26 and 2026/27 to deliver this.

5.2 London Road & Greenlands

London Road (including MERL) and Greenlands account for a further 6% of total heating-related carbon emissions. Both have been the subject of previous heat decarbonisation studies, at a reasonably high level for London Road, and a more in depth study at Greenlands. Both are thought viable to consider a small-scale district heating scheme.

London Road was substantially refurbished in 2011, with new standalone boilers installed in each building. Some of these are now reaching the end of their life. A previous study suggested a small district heating network could prove viable, particularly given the undercroft that runs beneath the campus cloisters potentially lending itself well to housing a heating network. The MERL site, next door to the London Road campus, would add a significant further load to such a network. Recent indications from Reading Borough Council suggest that the campus could fall into a future Heat Network Zone and there may therefore offer an opportunity to become a part of that wider network.

Greenlands Henley Business School is a more remote, standalone site. A previous study identified the potential to extract water from the River Thames for use in an open loop heat pump system to replace its current oil-fired boiler heating. A reasonable level of design work was carried out a few years ago, which was shelved awaiting available funding. As technology has moved on, it would be sensible to review whether this, or a potentially more straightforward air source heat pump solution would be best. A small district heating network could connect the teaching and accommodation buildings' heating together. Given the age of the Main House, its Grade 2* listed status and the age of its secondary heating, a heat pump would likely need to be able to deliver flow temperatures of 70˚C - 80˚C. An upgrade to the electrical capacity for the site will be required to facilitate this.

5.3 'Other' heating loads

There are then a number of smaller buildings/sites that are likely to require individual heat decarbonisation solutions. The largest of these is the Gateway building at Thames Valley Science Park, which would suit a large-scale heat pump retrofit solution. A large number of small properties are currently managed by the Property team, quite a few of which are earmarked for sale over the next 12 months. Those that remain, and the remaining small buildings across the estate, will require more individual approaches to heat decarbonisation, most likely through either air source heat pumps or direct electric boilers. More innovative solutions, such as Tepeo's ZEB boiler[19], may offer good potential for small-scale installations.

5.4 Energy efficiency

Where time and funding allow, the opportunity to improve the thermal fabric of buildings should be taken, as well as improved zoning, controls and monitoring of heating systems. This needs a pragmatic approach however to ensure that striving for minimal heat losses doesn't compromise progression of heat decarbonisation in the short timescales required to deliver the 2030 Net Zero target. Recent experience has shown that while some building fabric improvements can be very cost effective, control improvements can be a lot more costly and hard to make a business case for.

[19] *Meet the ZEB – A heat battery boiler | tepeo*

6 B – Better electrical energy

The 2021 Net Zero Plan focussed on increasing onsite renewable energy generation alongside consideration of Power Purchase Agreements (PPA) for renewable energy. This new plan continues to see an important role for onsite renewables, but puts a greater focus on offsite renewables rather than potential PPA agreements.

6.1 Onsite Generation and Storage

The 2021 Net Zero Plan forecast a potential to expand onsite generation to supply 6% - 8% of the University's total electricity from solar panels. Since that time, onsite generation has trebled, particularly through the support of a large grant from Salix Finance and in 2024/25, almost 5% of the University's electricity is expected to come from its own solar panels.

Further opportunities have been identified to expand onsite generation to 10% to 12% of the existing electricity demand, through a combination of rooftop and carpark canopies, as illustrated in Figure 5. A further opportunity has also been identified at Greenlands north of the A4155, which is not included in the above figure.

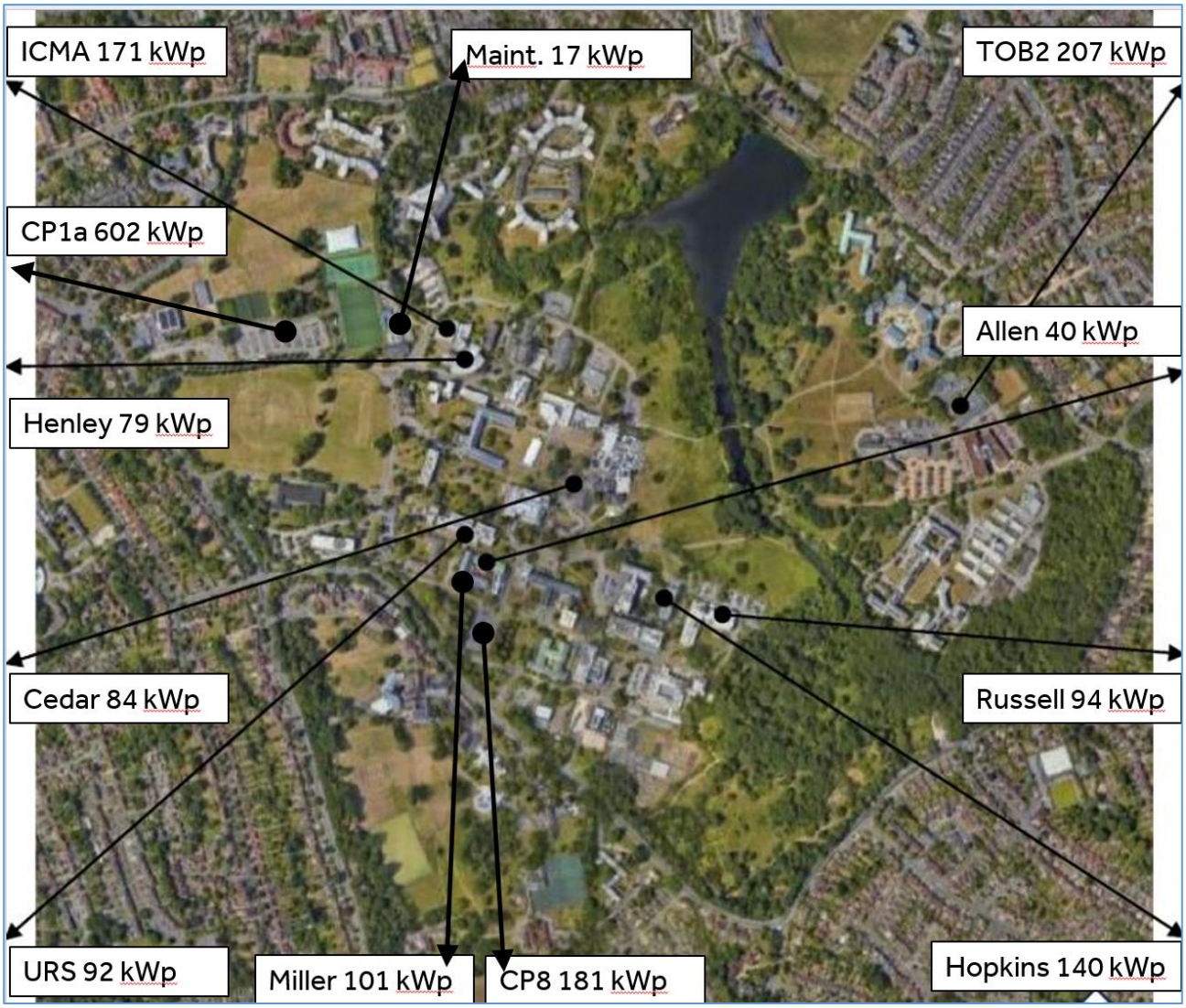

Figure 5 - potential solar PV expansion on Whiteknights

A recent study indicates there may be a reasonable financial case for installing some electrical battery storage on Whiteknights. However, it is likely that, as heat pump installations expand, excess

solar generation could be used to run the heat pumps and store energy in associated thermal stores, which will likely be a cheaper storage option than electric batteries.

6.2 Offsite generation and storage

The potential for a large scale offsite renewable energy development has been identified, working with Environmental Insight Partners, a wholly-owned spinoff of the University. This commenced with a review of a number of sites, and has identified a preferred site with the potential for:

- 18.5 MWp solar photovoltaics
- 3.0 MWp wind turbine
- 2.3 MW battery storage

It may be possible for a 'private wire' solution to be built, feeding generated electricity directly back to the Whiteknights campus. Alternatively, a 'virtual PPA' arrangement may be possible, with the generation fed into the national grid and the University then becoming the contracted 'offtaker' of that generation. There are benefits and drawbacks of each solution, which will be the subject of further stages of investigation.

In combination, such a development is anticipated to be able to provide 48.1% of the future decarbonised electricity demand for Whiteknights. Figure 6 illustrates typical summer and winter supply profiles for Whiteknights under such a generation scenario.

A further small site (3 MW) has been identified within the boundary of the Thames Valley Science Park, though this may feed future tenants rather than the University directly.

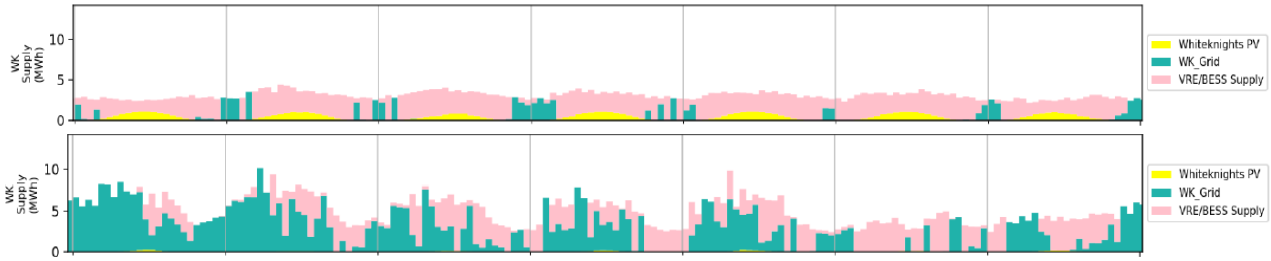

Figure 6 – simulated summer (top) and winter (bottom) electrical supply profiles

6.3 Electricity Supplies

The University has purchased Renewable Energy Guarantee of Origin (REGO) certified electricity for its entire estate for many years. Arguably, this is no longer driving change in the electricity market, as suppliers often 'package up' their mandatory renewable supply obligations to sell to willing customers. Nevertheless, the University has a long-standing commitment to buying REGOs and will continue to do so. We have recently taken part in a trial of 'time of use' renewable energy certification; seeking to understand matched renewable energy supplies on an hourly basis rather than only annually. Whilst interesting, the scheme doesn't currently offer a solution to delivering genuinely matched hourly supplies, but we will monitor the progress of this initiative to see if future solutions develop.

The 2021 Net Zero Plan proposed investigating the potential for Power Purchase Agreements (PPA), which could see the University committing to buy electricity directly from a renewable energy generator. Pursuing the potential for our own generation is seen as preferable to PPA alternatives, as it potentially offers better financial savings and puts us in control of our own destiny, though this could include a 'virtual PPA' arrangement where we connect our renewables to the grid and 'buy' the energy back on a guaranteed basis. PPAs remain a viable alternative should our own scheme not prove feasible.

6.4 Energy Efficiency

Energy efficiency opportunities are again widespread and should continue to be sought wherever possible. This can potentially help to reduce ongoing energy costs and free up capacity to be able to feed electric heat pumps across the estate. Headline areas for electrical efficiency improvements (and their associated controls) include:

- Lighting – particularly including replacement of obsolete fluorescent lighting with LEDs (a survey undertaken in summer 2023 revealed there remained 10,430 fluorescent luminaires on Whiteknights alone)
- Ventilation – including motor upgrades, variable speed drives and CO_2 control sensors
- Air Conditioning – including occupancy sensors for improved control
- Small power – monitoring and control of plug in equipment through 'smart plugs'

6.5 Grid electricity

The UK electricity grid has decarbonised significantly in the last 15 years and is projected to continue to do so. Current projections are for electricity to be 93 $kgCO_2$/kWh by 2030 and 19 $kgCO_2$/kWh by 2036, compared to 213 $kgCO_2$/kWh in 2021[20]. These projections should be treated with some caution, given the underlying assumptions about the timescales for delivery of new nuclear power stations (which are typically delivered years behind schedule). Nevertheless, the Government's Clean Power Action Plan[21] commits to reducing the carbon intensity of the UK's electricity generation *"…to well below 50gCO_2e/kWh in 2030"*. This Net Zero Plan assumes the more conservative figure of 93 $kgCO_2$/kWh by 2030, so further progress in decarbonising the grid beyond this level could further reduce the University's residual emissions.

There is still likely to be some need to offset grid remaining electricity-related emissions by 2030 to deliver on an authentic net zero carbon target. The need for offsetting these emissions should reduce further over time though as grid decarbonisation continues.

7 C - Capping and capturing residual emissions

Building energy, addressed in sections 5 and 6, accounted for 72.4% of the University's 2023/24 carbon emissions within its 2030 net zero target scope. The remaining emissions principally relate to various forms of travel (25.8%), with a further residual 1.8% from other sources (see Appendix 1 for a full breakdown).

7.1 Business Travel

In 2018/19, the year prior to the COVID-19 pandemic, the University's business travel emissions accounted for 33% of its carbon footprint (89% of which was from flying), compared with 20% in its 2008/09 baseline year.

Post-pandemic, having learned the practicalities and limitations of alternatives to travel, the University decided to take a radical new approach to its business travel and related emissions. The University has a global reach, and some international travel is essential to be able to maintain this position. Nevertheless, in 2023, it established a Travel Working Group, culminating in August 2023 in the implementation of a new Travel Policy and introduction of Travel Carbon Budgets for each School and Directorate. The targets aim to deliver a 30% cut in business travel carbon emissions compared to pre-COVID levels by 2026 and to progress to a 50% cut in these emissions by 2030. The scheme is still in its relative infancy, but targets have proved successful, with the 30% target already

[20] *Source: "Green Book Supplementary Guidance – Data Tables 1 to 19: supporting the toolkit and the guidance". Available at: https://assets.publishing.service.gov.uk/media/6567994fcc1ec5000d8eef17/data-tables-1-19.xlsx*

[21] *Source: Clean Power 2030 Action Plan: A new era of clean electricity – main report - GOV.UK*

being met in 2023/24 and extended to a 35% target for 2024/25. In November 2024, the initiative scooped the Energy Managers Association Decarbonisation Project of the Year.

As well as reduction in overall travel, savings have come from a change of policy which has seen:

- Digital meeting/event 'attendance' actively encouraged as the preferred option
- For in-person travel, staff are expected to choose the lowest carbon option where possible
- Air travel not being permitted in mainland UK, or to any destination reachable within eight hours by train from London St Pancras (other than in exceptional circumstances)
- All air travel taken in economy class (with clearly defined exceptions)
- Public transport used rather than taxis, though taxis can be booked for safety reasons

The initiative is believed to be a sector first, and many institutions (and funding bodies) have approached the University to learn from our experience to consider implementing similar schemes in the future.

7.2 Student group travel

Student group travel (field trips) had not previously been included within the 2030 net zero target, but have now been added, since they align closely with business travel emissions. A 'digital-first' approach is not felt to be appropriate for these emissions, but emission reductions will be targeted in the long-term (see section 9.6) and remaining emissions for 2030 will need to be offset to achieve net zero.

7.3 Fleet vehicles

In the past, some of the University's fleet vehicle emissions had been incorrectly reported under business travel, which are scope 3 rather than scope 1 emissions. This has now been corrected and in 2023/24, fleet emissions accounted for 1.6% of the University's overall in scope emissions for its 2030 net zero target.

There have been significant steps in the last 2 years to change fleet vehicles to fully electric where practical, or plug-in hybrid where that is not yet viable. Fleet emissions are therefore expected to fall significantly by 2030.

7.4 Offsetting and Insetting

For the University to reach net zero carbon by 2030, some level of carbon capture will be essential. This can be achieved through the use of offsetting (purchasing international carbon credits) or insetting (investment in emission reduction projects that are sited within the organisation's supply chain or sphere of influence and generate carbon credits). Projects that remove emissions should be credible, worthwhile and wherever possible relevant to the University.

7.4.1 Insetting

Carbon insetting looks to improve land management practices, including but not limited to tree planting, within the University's own estate to capture significant levels of carbon emissions each year. SBTi advocate that insetting should only be considered in relation to FLAG emissions and not in relation to building energy emissions and if that guidance is followed, insetting will not specifically contribute to the 2030 net zero target, but can play an important role in 2035 and 2040 targets.

7.4.2 Offsetting

Recent decarbonisation efforts have focussed on reducing emissions, which will remain the priority in the coming years. Nevertheless, offsetting will be important to achieving a genuine net zero position and the University should allow time to build a portfolio of credible projects that are linked to the University's research interests, are visible to stakeholders and maximise environmental and social impacts.

7.5 Other in-scope emissions for 2030

7.5.1 Water

The emissions associated with the supply and disposal of water accounted for approximately 1.0% of the University's 2023/24 emissions. Further water saving initiatives are therefore likely to only have a small impact on carbon emissions. Nevertheless, from an environmental impact perspective, reducing water usage remains a priority, and the University's 'Water management plan 2022 – 2026' sets the following targets:

	Non-residential	Residential*
Absolute consumption	45% reduction vs 2011/12 baseline	25% reduction vs 2011/12 baseline
Relative consumption^	45% reduction vs 2011/12 baseline	25% reduction vs 2011/12 baseline

^*Per staff & student FTE* **Halls of residence operated by UPP*

7.6 Waste

The emissions associated with general and construction waste and recycling only account for a fraction of a percent of the University's 203/24 emissions. The carbon emissions benefit of further improvements in waste management are therefore likely to be very small. As with water though, improving our waste management practices remains a priority to reduce our wider environmental impacts and our separate Waste & Resource Use Strategy sets out a series of SMART targets within its associated Action Plan.

8 Behaviour Change

8.1 Staff

In 2023, Our Future First was launched to establish a network of sustainability champions across every School and Directorate at the University. This network is now well-established, with 71 champions to date, and sees a regular range of workshops, discussion groups and 121s with champions to help embed sustainability locally.

The scheme has been designed to align with the EnCo (Energy Conscious Organisation) scheme created by the Energy Institute and ESTA, intended to deliver long-term, measurable reductions in energy consumption and in 2024, Reading became the first University to achieve formal 'Aspiring EnCo' status. This includes a formal pledge from the University, signed by the Vice Chancellor, to achieve fully registered EnCo status by the end of 2025.

Whilst behaviour change can be very cost-effective, it is also important to recognise that it has its limitations; perhaps offering 5% - 10% savings in energy-related emissions at best.

8.2 Students

The principal opportunity to engage with students from a carbon reduction perspective is typically within halls of residence and for Reading, these are run by a third party, UPP. We therefore work closely with UPP to ensure sustainability messaging is aligned.

In 2024, we were approached by UPP with the opportunity to bid for some funding to establish an Energy Advice Service for students, building on an initiative they launched with London South Bank University (LSBU). We have successfully secured this funding and are now working with Reading Students Union and LSBU to prepare for the launch of this new service in 2025/26. The scheme will be run by the Union with a primary focus to provide students in private rented accommodation with energy advice, and whilst this is beyond the scope of our own carbon emissions, it can provide valuable support to students in reducing their own environmental impacts and saving money.

9 2035 and 2040 target delivery

Appendix 1 details the University's full carbon emission inventory, alongside individual targets that are proposed for each line of that inventory.

9.1 Scope 1 - FLAG (land and livestock)

Land and livestock emissions are scope 1 and would ideally be included within targets for 2030. However, given the farm operations are likely to change significantly in the next few years, it is proposed that a more appropriate timescale is to set reduction targets for 2035. The current FLAG emissions have been quantified as follows:

Table 1 - Summary emissions from farmland & livestock

Operation	**tCO_2e/annum**
Farmland emissions	6,666.5
Farmland sequestration	-2,816.2
Livestock	3,177.0
TOTAL	**7,027.3**

The SBTi requires that all organisations whose FLAG emissions account for more than 20% of their total scope 1, 2 & 3 emissions must set specific targets in relation to their reduction. The University's scope 1 FLAG emissions are 8.8% of these emissions, and whilst the farm's scope 3 emissions have not been split out separately from the overall University emissions and added to this figure, it is very unlikely that the 20% threshold will be reached.

Nevertheless, given the University's aspiration is to align with SBTi where possible, a **reduction of 72% in FLAG emissions is targeted for 2035**, recognising that the significant change in farming operations in the coming years is likely to present a unique opportunity for some new ways of working. This is likely to include a potential combination of reductions in farmland/livestock emissions alongside the increased sequestration of emissions through revised land management practices.

These targets will need to be further informed by the developing strategic direction of the farms in the coming years, including the Agri Food initiative.

9.2 Scope 3 emissions

As detailed in section 3.2.2, a new target is introduced to reduce all scope 3 emissions against a 2023/24 baseline by:

- 40% by 2035 and
- 70% by 2040

Specific individual targets are set for each element of scope 3 to make up these targets (see Appendix 1) and some of the key areas of focus are outlined here.

Figure 7 shows a scaled breakdown of the baseline 2023/24 scope 3 emissions.

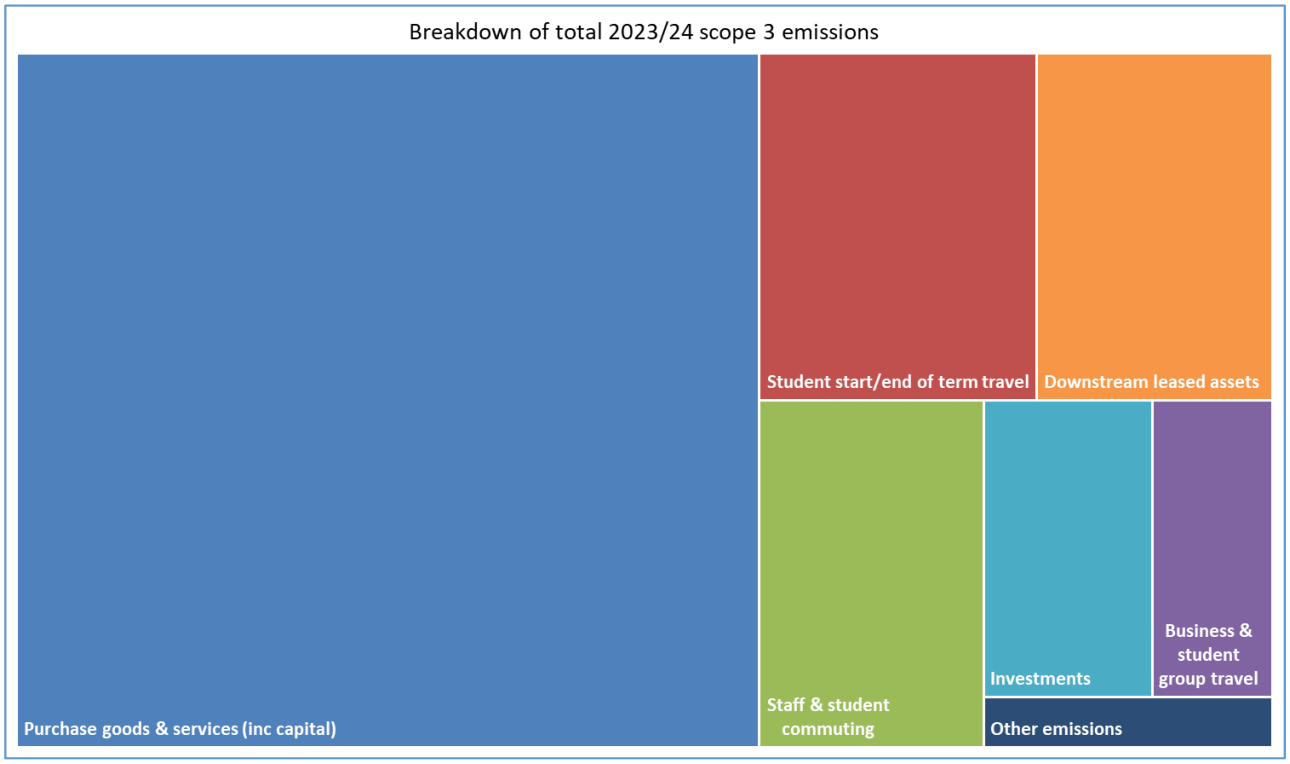

Figure 7 - scaled breakdown of 2023/24 scope 3 emissions

9.3 Purchased goods and services (including capital goods)

56% of the University's 2023/24 scope 3 emissions relate to these emissions (which are based on the HESCET tool and therefore include 'upstream transport & distribution' emissions).

These therefore needs to be a primary focus for intervention and reduction, and targets of 50% and 80% reduction are set for 2035 and 2040 respectively.

The University has recently signed up to the Net Zero Carbon Supplier Tool, developed by Nottingham Trent University alongside NETPositive Futures. This will enable university suppliers to provide their own carbon footprint data for the individual institutions using the tool to then calculate their proportion of emissions. This is anticipated to result in much more meaningful data over time compared to the more generic data currently received through SUPC, and also enable the opportunity to focus on key supplies and suppliers to target specific areas for reduction.

SBTi expects that emissions-intensive (Tier 1) suppliers should be net-zero aligned - which, for the University, means agricultural products, industry (construction products), transport (services and leased assets) and energy. This would therefore be a sensible and appropriate aim as part of wider targeted reductions across our supply chain.

9.4 Student start/end of term travel

Start and end of term travel accounts for 11.1% of 2023/24 scope 3 emissions. There is a limit to what influence the University can have on these emissions, particularly where they are from international destinations where flying is the only viable alternative. Nevertheless, a 20% reduction is targeted for 2040, which is anticipated to be delivered through a combination of promoting lower carbon transport options and improved transport efficiency/electrification. This is likely very conservative, as explained further in section 3.2.2 and should be review further over time.

9.5 Staff and student commuter travel

Staff and student commuting accounts for 8.9% of 2023/24 scope 3 emissions. The University's 2024 – 2029 Travel Plan continues to target and promote the uptake of sustainable travel solutions, with appropriate targets being set. Recent initiatives have included working with Reading Buses to introduce a new limited-stop service from Reading station to Whiteknights, and a free park & ride service for staff and students from south of the M4, serving Whiteknights and London Road campuses.

9.6 Business travel and student group travel

The 50% business travel emission reduction target for 2030, detailed in section 7.1, will result in these emissions being equivalent to 5.1% of the 2023/24 scope 3 emissions. This is already ambitious, and the key focus for the future will need to be on at least maintaining this reduction level. A modest additional reduction is targeted for 2040, moving to a 60% reduction against the 2008/09 baseline used for the 2030 net zero target, which is anticipated to be delivered through a combination of promoting digital-first engagement, lower carbon transport options and improved transport efficiency/electrification.

A 20% reduction in student group travel emissions will be sought for 2040, including through lower carbon destination and transport options and improved transport efficiency/electrification.

9.7 Investments

The University's investments account for 5.7% of its 2023/24 scope 3 emissions. The University's investment managers already have a strong approach to ethical investment, and it will be important ensure any future investment decisions strike a balance in reducing emissions whilst supporting the financial needs of the University. Targets of 25% and 50% reduction in emissions are targeted for 2035 and 2040 respectively.

SBTi states that *"A reporting company's scope 3 emissions from investments are the scope 1 and scope 2 emissions of investees"*, i.e. the University should report the scope 1 and 2 (but not scope 3) emissions of its investments as its own scope 3 emissions, which is line with the University's approach.

9.8 Downstream leased assets

Downstream leased assets (building or land tenants on University property) make up approximately 9.4% of 2023/24 scope 3 emissions, of which just over half is the UPP-run halls of residence. We will continue to work with tenants in general and UPP in particular to encourage decarbonisation, with targets between 50% and 80% by 2035 depending on the University's level of influence, and 100% by 2040.

9.9 Other emissions

Remaining scope 3 emissions account for 1.7% of the 2023/24 emissions. Individual targets are again detailed in Appendix 1.

10 Funding and resource

The University's recently revised Capital Expenditure Plan has no capital allocated for delivering the Net Zero Carbon Plan until 2028/29, and then at a level (a potential £20m application to its investment fund) which will be insufficient for the circa £60m - £80m investment anticipated to be required to deliver on the 2030 net zero target.

The University has had good success in recent years in securing decarbonisation grant funding, with £6.6 million grants from Salix Finance and the Green Heat Network Fund (GHNF) secured since March 2021. Access to future grant funding is likely to be much more limited however, due to a combination of no longer being eligible for Salix Finance grants (due to withdrawal from the Public

Contract Regulations) and a lack of match capital funding also meaning the likes of GHNF will not be possible to apply for.

As originally suggested in the 2021 Net Zero Plan, it is therefore going to be necessary to consider energy performance contracts (or similar) to attract large-scale investments in the University's estate and preparatory work is now underway to explore such arrangements in earnest. In particular, this will focus on the large heat decarbonisation opportunity at Whiteknights, set out in section 5.1 and also the offsite renewable opportunity detailed in section 6.2.

Such arrangements are complex and will require careful consideration to ensure they can deliver benefits for all parties and are suitable for the long term.

On a smaller scale, an expansion of onsite renewables should be possible through localised power purchase agreements (PPAs), such as through Reading Community Energy Society, who have installed 5 solar PV systems on the estate already and sell the generation energy back to the University.

A relatively small revenue budget of approximately £700,000 per annum exists to fund small-scale energy efficiency initiatives, with projects typically paying back in 5-8 years.

Delivering a 2030 zero carbon target will have capacity implications for the delivery teams involved, both directly and for those support functions which are key to its success. Resource implications will therefore need to be considered.

Delivering further scope 3 reduction targets on an expanded scope of emissions in the future mostly involves influencing, or making decisions on, partnerships and supply chains. Cost implications are therefore likely to be much lower, but an ability to influence or make decisions on appropriate partnerships will become increasingly important.

11 Business Case

11.1 Financial Benefits

As discussed above, the capital costs for delivering a net zero carbon target will be substantial and is primarily going to need to come from third party investment. Such investment will no doubt come at some cost in terms of long-term contractual arrangements to purchase decarbonised energy. Such costs will need much further consideration as schemes develop, but a combination of incorporating energy efficiency and our own renewable energy generation where possible can help make schemes more cost effective. The University has a lot to offer to such arrangements, such as the existence of its Energy Centre, district heating network and potential land for large scale renewable energy generation.

It is very difficult to quantify the potential added value that boosting the University's sustainability credentials can bring in attracting new student intake and research income – which may be viewed both as a financial and a non-financial benefit, but leading by example is key to its continued sustainability leadership.

11.2 Non-financial Benefits

Setting out a clear, ambitious and authentic net zero carbon plan for the University can become a unique selling point, setting it apart as a leader in delivering sustainability in its operations alongside its leading environmental teaching and research. This presents opportunities for good publicity and links back to the potential to increase student intake and research grants.

With a stated ambition to *"…lead on global environmental sustainability"*, delivering robust and sustained carbon reductions over the long term can set the University apart.

Both Reading and Wokingham Borough Councils have set their own net zero carbon targets for 2030 and aligning with these targets for our principal emissions therefore also positions the University as a key partner locally.

12 Interfaces

12.1 Estates Strategy

12.1.1 New buildings

Currently, the University's only major construction project is the refurbishment of the URS building. Future developments and refurbishments will need to be built to be zero carbon. A 2018 report[22] from assessments in the UK found that achieving net zero carbon emissions for a new non-residential building is likely to result in a capital cost uplift in the order of 5%-7%. In many buildings this additional cost could be under 1%. A 2015 report[23] from assessments in Canada put the figure at between 5%-19%, but this is likely to be influenced by a colder climate and the earlier date of the report when low-carbon technology would have been more expensive. The Canadian report found that a return on investment of approximately 30% was achievable.

It should be recognised that in Reading Borough Council, buildings will need to achieve BREEAM Excellent certification, and while delivering a zero carbon building should go a long way towards that certification, BREEAM has additional sustainability requirements which will also still need to be met.

12.1.2 Refurbishment/Repurposing

Where major refurbishments are undertaken, they will also need to consider their contribution towards delivering a net zero carbon target. For whole building refurbishments, this will be essential, whilst for partial refurbishments, or repurposing existing spaces, this will need to be considered on a case-by-case basis. It will be important to ensure that any works completed complement the University's net zero carbon ambitions where practical, and at the very least, do not undermine the ability to make the building zero carbon in future years.

12.1.3 Space utilisation

In reviewing the way that the University manages space in its buildings, there is a significant opportunity for energy and therefore revenue savings. This could be wide ranging, from looking at the way space is allocated, to the use of individual versus shared offices, as well as the utilisation of teaching and meeting room space. Improving space utilisation rates could be one of the most cost-effective ways to reduce energy costs and therefore carbon emissions, if this can reduce heating and lighting demand in unoccupied spaces and potentially reduce the total floor area owned by the University.

This is recognised in the University's Estates Strategy, and offers another way to reducing energy demand, which in turn can reduce the costs of decarbonisation.

12.1.4 Maintenance - heating and hot water boiler replacements

Planned Maintenance priorities will need to consider that gas boilers are likely to be substantially phased out in the coming years. Where possible, it should be planned to avoid further expenditure on replacement boilers or replacement gas mains. Of course, this will not always be practical, and there are likely to be instances where an immediate fix is required which necessitates expenditure.

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[22] https://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/LP20162036/cost_of_carbon_reduction_in_new_buildings_report_publication_version.pdf

[23] https://newbuildings.org/wp-content/uploads/2015/11/ZNECostComparisonBuildingsDC1.pdf

There could also be significant implications for the training needs of staff, to ensure suitably skilled staff are employed who understand and are able to operate and maintain alternative, electrified heating systems.

13 Governance

The Net Zero Carbon Plan has been signed off by the University Executive Board on 7 July 2025 and will be managed on a day-to-day basis by Estates through the Sustainability team, overseen, monitored and directed by the Environmental Sustainability Committee. Its progress will be underpinned by the University's ISO50001:2018 certified energy management system.

14 Appendix 1 - full carbon emissions inventory

Scope 1 & 2 emissions

Scope	Source	First measured year	First measured tCO2	2015/16 baseline (scope 1 & 2)	2023/24	Reduction target(s)
1	Natural gas - UoR	2008/09	9,249	6,784	5,737	90% vs 2015/16 and offset rest to net zero
1	Burning Oil	2008/09	1,544	524	442	90% vs 2015/16 and offset rest to net zero
1	Refrigerants	2008/09	207	272	68	75% vs 2015/16 and offset rest to net zero
1	Vehicle fleet	2008/09	138	109	240	90% vs 2015/16 and offset rest to net zero
1	Generator/temp boiler fuels	2023/24	83	0	83	75% vs 2015/16 and offset rest to net zero
1	Volatile Organic Compounds	2023/24	42	42	42	25% vs 2015/16 and offset rest to net zero
1	Land & livestock (gross)	2023/24	9,844	9,844	9,844	72% vs 2015/16 and offset rest to net zero
1	Land sequestration	2023/24	-3,080	-3,080	-3,080	Reductions recorded against land/livestock
2	Elec (generation) – UoR	2008/09	16,367	10,720	3,971	90% vs 2015/16 and offset rest to net zero
			34,394	**25,215**	**17,347**	

Scope 3 emissions

		First measured year	First measured tCO2		2023/24	Target
3	Elec (transmission) - UoR	2008/09	1,273		344	90% vs 2023/24 and offset rest to net zero
3	Water	2008/09	711		139	50% vs 2023/24 and offset rest to net zero
3	General waste	2008/09	220		10	No target as already tiny emissions
3	Construction waste	2008/09	6		38	No target as large variances year-on-year
3	Business travel inc RF	2008/09	9,081		2,832	50% reduction vs 2008/09 by 2030 and 60% by 2040
3	Student group travel	2023/24	739		701	20% vs 2023/24 by 2040
3	Onsite halls - UPP - Elec (generation)	2008/09	1,397		513	80% vs 2023/24 by 2035 and 100% by 2040
3	Onsite halls - UPP - Elec (transmission)	2008/09	109		44	80% vs 2023/24 by 2035 and 100% by 2040
3	Onsite halls - UPP - gas	2008/09	3,688		2,123	80% vs 2023/24 by 2035 and 100% by 2040
3	Onsite halls - UPP - water	2008/09	76		55	50% vs 2023/24 by 2035 and 100% by 2040
3	Offsite halls - UPP - elec	2008/09	2,167		426	80% vs 2023/24 by 2035 and 100% by 2040
3	Offsite halls - UPP - gas	2008/09	3,374		1,053	80% vs 2023/24 by 2035 and 100% by 2040
3	Offsite halls - UPP - water	2008/09	40		21	50% vs 2023/24 by 2035 and 100% by 2040
3	Buildings leased to tenants - UoR supplies - elec	2015/16	1,279		932	75% vs 2023/24 by 2035 and 100% by 2040
3	Buildings leased to tenants - UoR supplies - gas	2015/16	1		217	50% vs 2023/24 by 2035 and 100% by 2040
3	Buildings leased to tenants - UoR supplies - water	2015/16	3		3	50% vs 2023/24 by 2035 and 100% by 2040
3	Buildings leased to tenants - non-UoR supplies - elec	2023/24	122		122	75% vs 2023/24 by 2035 and 100% by 2040
3	Buildings leased to tenants - non-UoR supplies - gas	2023/24	992		992	50% vs 2023/24 by 2040
3	Buildings leased to tenants - non-UoR supplies - water	2023/24	11		11	50% vs 2023/24 by 2035 and 100% by 2040
3	Land leased to tenants for own buildings - elec	2023/24	1,165		1,165	75% vs 2023/24 by 2035 and 100% by 2040
3	Land leased to tenants for own buildings - gas	2023/24	410		410	50% vs 2023/24 by 2040
3	Land leased to tenants for own buildings - water	2023/24	26		26	50% vs 2023/24 by 2035 and 100% by 2040
3	Employee commuting	2011/12	2,138		2,479	At least 50% reduction by 2035 vs 2023/24
3	Student commuting	2011/12	2,202		5,234	At least 50% reduction by 2035 vs 2023/24

3	Student start/end term travel	2021/22	16,582		9,517	20% vs 2023/24 by 2040
3	Staff home working	2021/22	488		466	40% vs 2023/24 by 2035 and 75% by 2040
3	Purchased Goods & Services	2011/12	25,858		48,618	50% vs 2023/24 by 2035 and 80% by 2040
3	Capital Goods	2011/12	4,796		2,395	50% vs 2023/24 by 2035 and 75% by 2040
3	Upstream transport & distribution	TBC	Included within purchased & capital goods			
3	Investments (their scope 1 & 2)	2023/24	4,950		4,950	25% vs 2023/24 by 2035 and 50% by 2040
3	Hotels	2023/24	440		440	50% vs 2023/24 by 2035 and 75% by 2040
3	Upstream leased assets	2023/24	-		-	
			84,345		**86,276**	

Out of scope

		First measured year	**First measured tCO2**		**2023/24**	**Notes**
n/a	Investments (their scope 3)	2023/24	18,657		18,657	SBTi says *"A reporting company's scope 3 emissions from investments are the scope 1 and scope 2 emissions of investees"*
n/a	Pensions	2023/24	100,244		100,244	Viewed as beyond scope of influence