



July 2024

Progress Report 2019-2023 **University of Greenwich**



Approved by
Professor Andrew Westby,
Deputy Vice Chancellor and
Chair of the Sustainability
Management Committee.

Tuesday 30th July 2024

Contents

		Page
Section 1	Introduction	4
Introduction	Executive Summary	5
	Footprint - Baseline (YE2019)	7
Section 2		
Baseline data	Footprint - Current (YE2023)	8
	Footprint - Comparison between baseline YE2019 and current YE2023	9
Section 3		
Progress Summary	Progress Summary	11
Section 4		
Recommendations	Recommendations	24
Section 5		
Appendix	Further Notes	26
	Detail baseline comparison	27



Section 1

Introduction



Introduction

“

Planet Mark is proud to be working with the University of Greenwich on their carbon reduction journey. Their targets will be achieved through innovative solutions, policy implementation, and winning the hearts and minds of their academics, students and local community. The University of Greenwich are working hard to explore every opportunity to reduce carbon; be accountable and take a stand to create a sustainable establishment.

Steve Malkin, CEO and founder at Planet Mark

The University of Greenwich continues to embed carbon reduction strategies across all campuses and local communities, with the support of the University's 2021-2030 Strategic Plan. Priority initiatives over recent years have included: switching to zero carbon energy across all campuses to developing opportunities to decarbonise estates utilising air source heat systems.

Sustainability is clearly embedded into the University's wider organisational strategy and ethos and sustainability credentials and targets are clearly communicated to external stakeholders. As a market differentiator, a robust and proactive approach to sustainability is expected to support the University's aim to attract and accommodate 40,000 students by 2030.

To support their decarbonisation journey, the University are working from a strategic carbon reduction plan, developed with the support of Planet Mark in 2021. This Progress Report reviews action against the carbon reduction plan to identify opportunities for re-prioritisation and review implementation challenges. Carbon reduction, and the journey to net zero, is rarely linear and it is important to recognise the difficulties with navigating required behavioural change alongside technological innovation.

It is critical for leading educational establishments, like the University of Greenwich to acknowledge their role in society's transition to a net zero economy and it is reassuring to see them taking action to reduce carbon emissions. It is, therefore, reassuring to see that the University of Greenwich Governance and Leadership Team are fully invested into creating a sustainable academic organisation.

The Sustainability Management Committee and supporting ambassadors are mandated to deliver against the priorities set out in the Strategic Plan. Accordingly, they have appointed Planet Mark to provide external governance in the form of this written report prepared for the Sustainability Management Committee, in line with industry best practice and relevant standards.



Executive Summary

Building upon the University of Greenwich's 2030 strategy report, there is clearly ambition to embed sustainability within the academic organisation to deliver against their targets. The University have expressed a clear desire to establish themselves as leaders, with a commitment to positively evolve the teaching and learning, whilst decarbonising the academic organisation. This will be a challenge but rewarding process. The key here is to work hand in hand with the students, staff, and local community, as the University starts to implement significant changes.

This Progress Report provides an update on the University of Greenwich's progress against their ZeroBy30 carbon reduction strategy. Since the roadmap was produced in 2021, the University has made significant progress in implementing key initiatives from the ZeroBy30 report. With successful carbon reduction implementations, their measured emissions have started to decrease from 6,525.1 tCO₂e YE2019 to 5,119.9 tCO₂e in YE2023, that's a 21.5% reduction. To note, the University's current measured emissions include Scope 1 and 2 in addition to Scope 3 categories Business Travel and Waste.

To highlight, Business Travel has seen a decrease in emissions, especially those associated with air travel. Overall, Business Travel emissions have decreased by 36.3% from YE2019 to YE2023.

Across the estate the University has successfully decreased their emissions by 6.2% from YE2019 to YE2023, supported by the implementation of a variety of initiatives recommended in their ZeroBy30 report. These include decarbonisation of the Avery Hill campus by installing LED lighting, solar PV, and air source heat pumps (impact of these installations will happen in 2024).

For the University to truly hit their targets, emissions must continue to decrease, even with their growth strategy for 2030. The University have created a strong governance structure, that is led by the Sustainability Management Committee (SMC) and supported by a Green Champions Network made up of 70 members. This network regularly reports updates to the Sustainability Management Committee who have a dedicated annual budget set against their carbon reduction actions.

To support the University's decarbonisation strategy and the University's growth plans to 40,000 students, there is a demand to prioritise the measurement of their full carbon emission footprint. Once the University have measured their full carbon footprint, the net zero target should be reviewed to ensure its realistic and achievable. In the short-term, the University must work hard to decarbonise their estate and fleet emissions through carbon budgets, policies and education.

“

Being a leading, UK University, it is imperative we foster change to reduce our impact on the planet. Our ambition is to demonstrate to our students and local community that by adopting sustainable processes it is possible to create hope and ensure future generations can thrive.

Working towards carbon reduction and net zero targets will provide the right framework and guidance for our University to reduce all emissions across the organisation, including our supply chain and network.

Simon Goldsmith,
Head of Strategic
Sustainability



Section 2

Baseline data



Footprint: YE2019

Measured Carbon Footprint (Market-based): 6,525.1 tCO₂e

Reporting period:

01 August 2018 to 31 July 2019

Reporting Boundary:

University of Greenwich (Avery Hill, Greenwich, Medway, Woolwich)

Included Emissions:

Scope 1	Natural Gas and Fleet Fuels
Scope 2	Electricity
Scope 3	Category 3, Fuel-and-Energy Related Activities (partial) Category 5, Waste Category 6, Business Travel

Note on Emission boundaries:

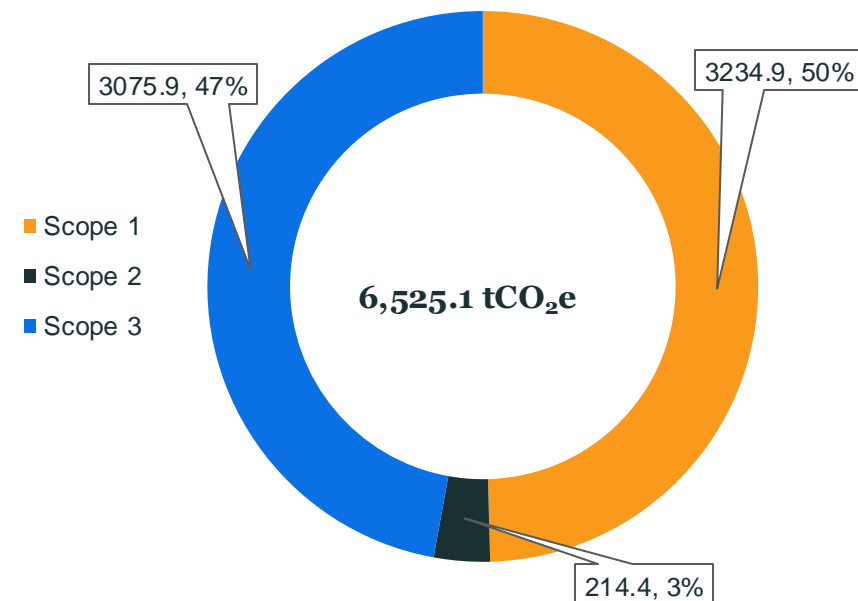
The University of Greenwich has measured a partial carbon footprint through Planet Mark's annual Business Certification and partial Scope 3 measurement. An investigation to identify and measure all material sources of emissions has not been completed.

Conversion Factor:

Activity: BEIS 2019

YE2019 Measured Carbon Footprint

Market-based



For reference, a location-based method reflects the average emissions intensity of grids on which energy consumption occurs (mostly grid-average emission factor data). A market-based method reflects emissions from electricity that companies have purposefully chosen (or lack of choice). The figures in this report show the market-based footprint. The University's current electricity tariff is 100% nuclear and has been confirmed by the Planet Mark as zero carbon on the market-based assessment, leading to a carbon footprint from electricity consumption of zero.



Footprint: YE2023

Measured Carbon Footprint (Market-based): 5,119.9 tCO₂e

Reporting period:

01 August 2022 to 31 July 2023

Reporting Boundary:

University of Greenwich (Avery Hill, Greenwich, Medway, Woolwich)

Included Emissions:

Scope 1	Biodiesel, Natural Gas, Refrigerants and Fleet Fuels
Scope 2	Electricity
Scope 3	Category 3, Fuel-and-Energy Related Activities (partial) Category 5, Waste Category 6, Business Travel

Note on Emission boundaries:

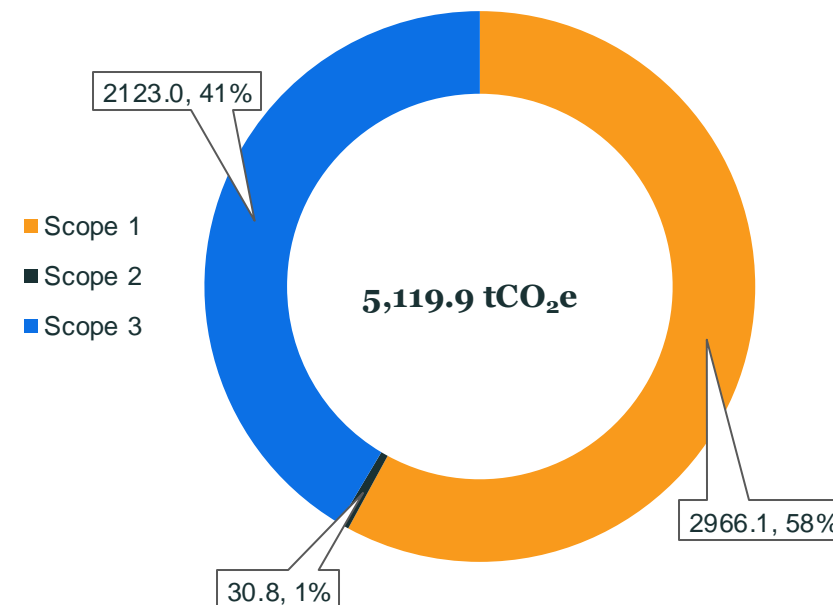
The University of Greenwich has measured a partial carbon footprint through Planet Mark's annual Business Certification and partial Scope 3 measurement. An investigation to identify and measure all material sources of emissions has not been completed.

Conversion Factor:

Activity: DESNZ 2023

YE2023 Measured Carbon Footprint

Market-based



For reference, a location-based method reflects the average emissions intensity of grids on which energy consumption occurs (mostly grid-average emission factor data). A market-based method reflects emissions from electricity that companies have purposefully chosen (or lack of choice). The figures in this report show the market-based footprint. The University's current electricity tariff is 100% nuclear and has been confirmed by the Planet Mark as zero carbon on the market-based assessment, leading to a carbon footprint from electricity consumption of zero.



Footprint – Comparison between Measured Carbon Emissions of YE2019 and YE2023



-21.5%

There was a 21.5% decrease in measured carbon footprint (market-based) from YE2019 and YE2023.



-52.4%

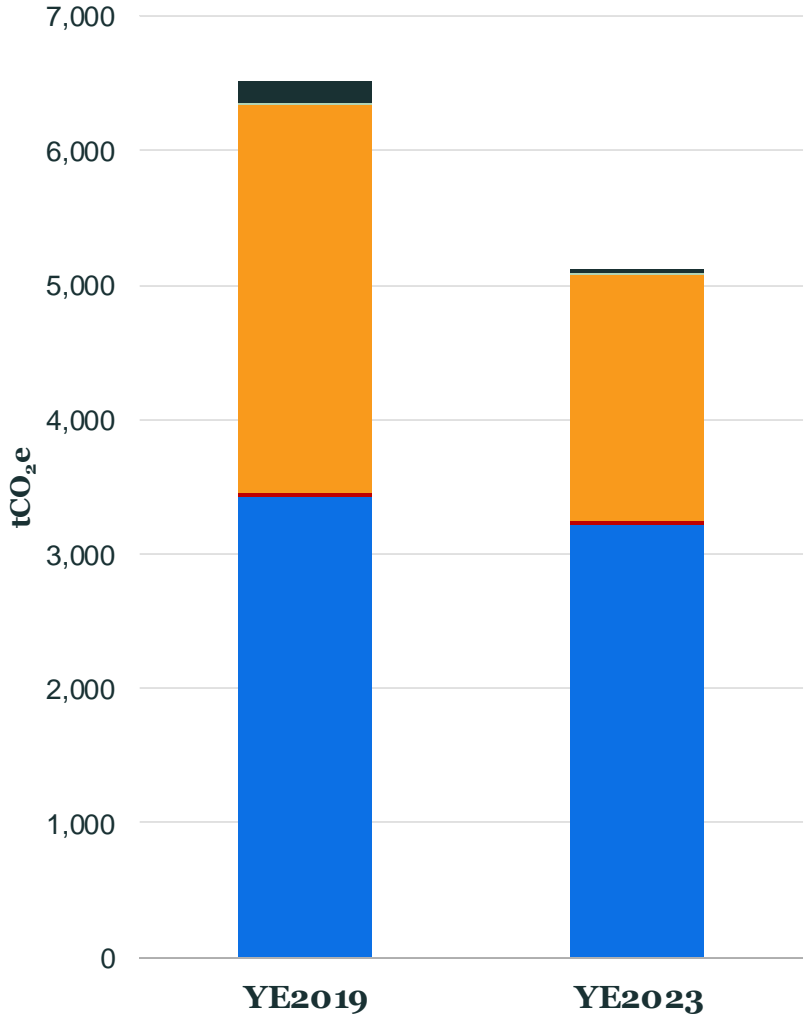
On a per staff and student intensity metric, market-based emissions decreased by 52.4% from YE2019 (17,098 FTE and students) and YE2023 (28,208 FTE and students).

- Natural Gas emissions accounted for **53.8%** of the University of Greenwich’s emissions in YE2023 (3,208.5 tCO₂e in YE2019 vs. 2,755.7 tCO₂e in YE2023).
- A significant reason behind the **21.5%** decrease in emissions between YE2019 to YE2023 was a **38.1%** decrease in air travel emissions between the 4 years.
- From YE2019 to YE2023 there was an overall **36.3%** decrease in business travel emissions, predominately associated with air travel.

Market-based	2019 Emissions	2023 Emissions	% difference
FTE & Students	0.4 per FTE & student	0.2 per FTE & student	-52.4%
GIA M ²	0.0209 per m ²	0.0226 per m ²	8.5%

Note: Transmission and Distribution Losses and Biodiesel have increased since the publication of the ZeroBy30 Report in January 2022 due to the University expanding their estate and improving data quality. .

- Water
- Waste
- Business travel
- Fleet travel
- Buildings



For reference, a location-based method reflects the average emissions intensity of grids on which energy consumption occurs (mostly grid-average emission factor data). A market-based method reflects emissions from electricity that companies have purposefully chosen (or lack of choice). The figures in this report show the market-based footprint.

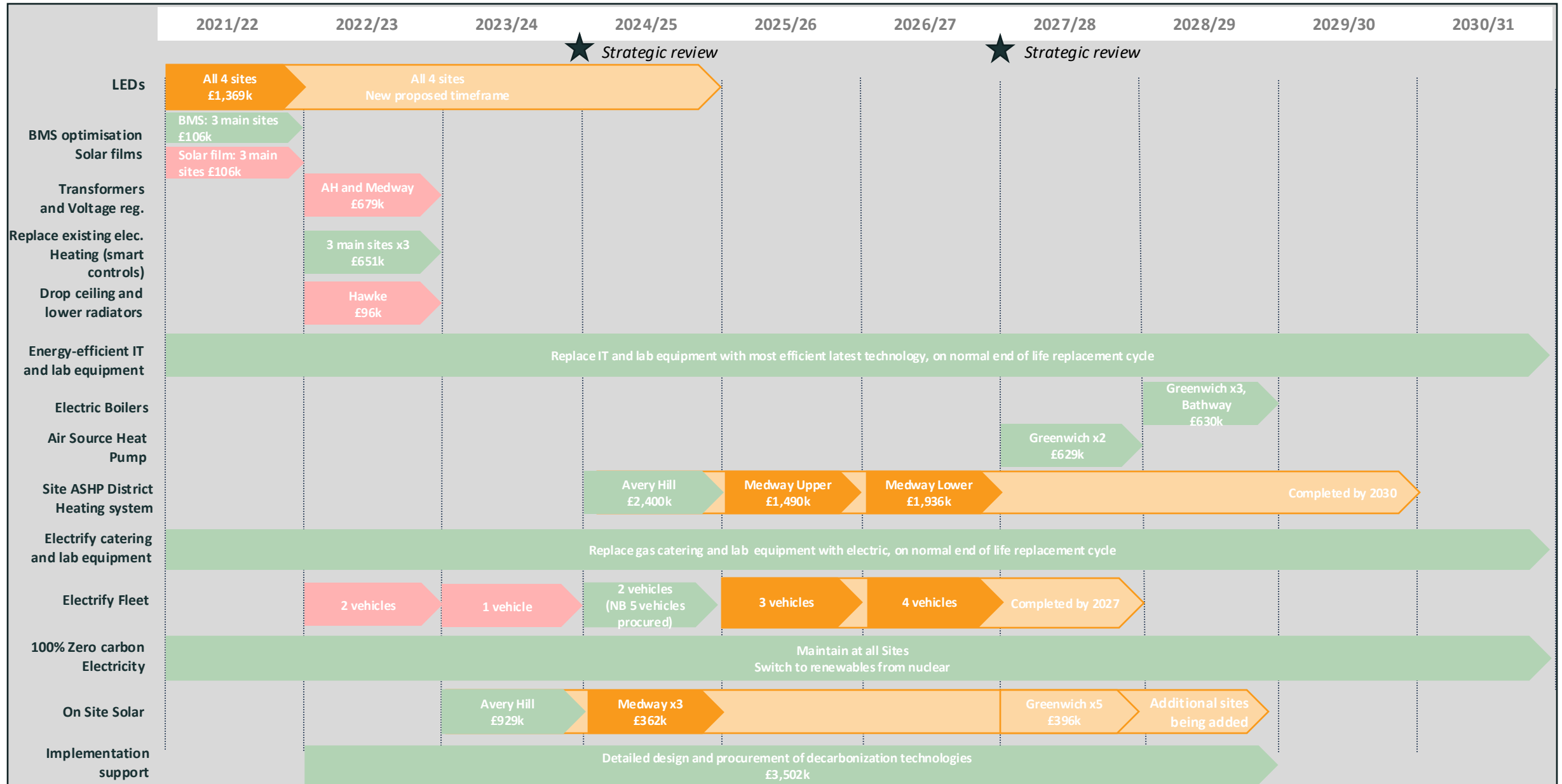


Section 3

Progress Summary



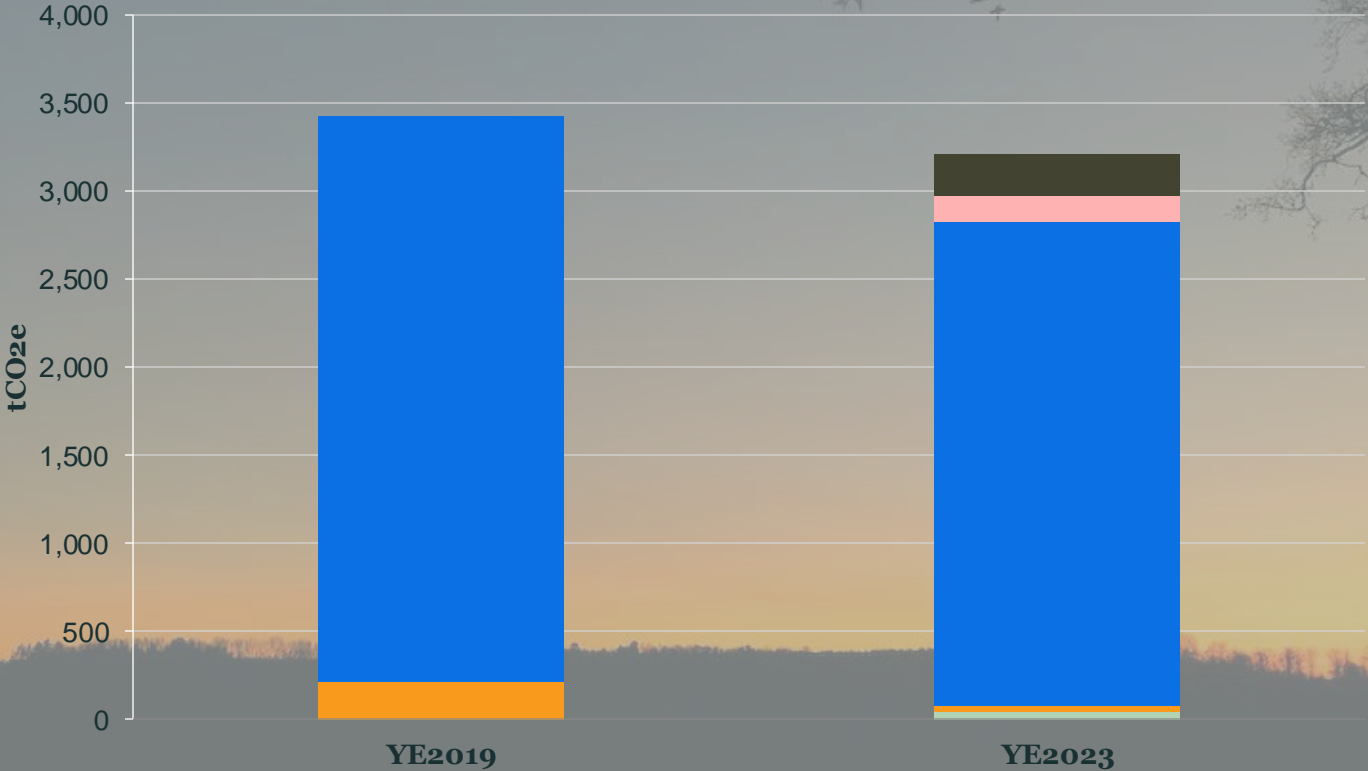
Progress against original Net Zero Plan Roadmap





Assessment of Carbon Reduction Roadmap Implementation: Estate

- Transmission and Distribution Losses (Scope 3)
- Refrigerants (Scope 1)
- Natural Gas (Scope 1)
- Electricity (market-based, Scope 2)
- Biodiesel (Scope 1)



For reference, a location-based method reflects the average emissions intensity of grids on which energy consumption occurs (mostly grid-average emission factor data). A market-based method reflects emissions from electricity that companies have purposefully chosen (or lack of choice). The figures in this graph show both methods. Refrigerants emissions from YE2023 have been included. Transmission and Distribution Losses and Refrigerants were not included in the YE2019 data as they were less than 5% of the total emissions measured, however, moving forward it is best practice to include these.

Overall building emissions have decreased by **6.2%** from YE2019 to YE2023 which is a significant decrease but not on track for the reduction figures scheduled in the roadmap.

Note: Transmission and Distribution Losses and Biodiesel have increased since the publication of the ZeroBy30 Report in January 2022 due to the University expanding their estate and improving data quality.



Assessment of Carbon Reduction Roadmap Implementation: Estate

Activation lever: Use less energy			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
By 2022, upgrade all campuses (Greenwich, Avery Hill, Medway and Bathway) to LED lighting.	Between 2020 and 2022, the majority of the Avery Hill campus lighting was upgraded. Medway campus is due to be completed by the end of this financial year (2024). Greenwich is currently in the process of being upgraded and is due for completion in 2025.	Behind schedule – ongoing	Continue to fast track the implementation of LED lighting across all campuses, to meet the new deadline of 2025.
Solar films to be installed by 2022 across Greenwich, Avery Hill and Medway campuses.	As the Greenwich campus (ORNC estate. Dreadnought and SLB sites), are on World Heritage Sites (WHS), planning permission is needed to install solar films. Accordingly, the Energy Reduction Task Group have identified other energy saving measures that do not need planning permission. Currently in the Cooper Building these measures include improving the air tightness and condition of all windows and installing internal solar shading. This is an ongoing programme and will be rolled out across all campuses.	Behind schedule – on hold	Continue exploring alternative options, including repairs, to reduce energy loss from the windows, on all campuses.
Install Building Management Systems (BMS) across Greenwich (King William and Dreadnought sites), Avery Hill (David F, Mary S, Science Module and Wren sites) and Medway (Blake, Nelson, Anson, Grenville sites) by 2022.	Up until the end of 2023, as part of the BMS upgrades, the Honeywell boilers have been upgraded to the latest version (Honeywell IQVision boiler) as this was a key system optimisation across all campuses. They now control all heating systems and air handling units (AHUs) across all target campuses and sites. As this was successful, the Energy Reduction Task Group have launched a programme to identify new approaches and technologies to enhance the current BMS system. A trial of intelligent thermostatic radiator valves will be implemented in the Drill Hall Library, at the Medway campus.	Completed – as per the roadmap schedule	Set a deadline to report back on the findings from the Drill Hall Library trial.
By 2023, install transformers with voltage regulations across Avery Hill (Anne, Catherine of A, Henry T, Catherine P and Jayne S sites) and Medway (full sites).	Currently no progress made with installing transformers with voltage regulations at the Avery Hill and Medway campus. There are currently no plans to install these in the future.	On hold	Review this project in 2024 and provide clear evidence as to why this is not a viable solution.
By 2023, implement smart controls and replace electric heating at Greenwich (Cutty Sark, Devonport sites) and Avery Hill (Student Village site) campuses.	The University have created a two-phase approach with the implementation of the smart controls and electric heating replacement. 'Phase 1' has been implemented at the Student Village site, including the accommodation at Avery Hill and Cutty Sark at Greenwich campuses. These have all been fitted with smart heating and hot water controls. Guidance is being provided through internal communications, such as student and staff newsletters. Phase 2 is now in progress with Medway campus.	Completed – as per the roadmap schedule	Continue providing clear instructions to students and staff on utilising the smart controls. Annually review the latest smart control technology advancements.
At Medway Campus (Hawke site) reduce the current ceiling height as well as lower the radiators by 2023.	The Medway campus is currently under strategic review to identify a return on investment and energy saving opportunities. Moreover, there are strategic discussions on building acquisitions as there will be a need for more infrastructure as the University aims to increase its student population.	On hold	Update schedule to reflect end of strategic review and potential acquisitions.



Assessment of Carbon Reduction Roadmap Implementation : Estate

Activation lever: Use less energy			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
By 2030, replace all IT and laboratory equipment to more energy efficient devices, as per normal end of life replacement cycle.	Technology and IT equipment replacement:		
	Ultra-low temperature freezers have been replaced (at end of life) with more energy efficient models with coolants that have less global warming potentials (GWP). There is a current investigation into the energy savings of increasing the freezers operating temperatures from -80°C to -70°C, with the aim to reduce energy consumption by up to 50%.	Ongoing – as per the roadmap schedule	<ul style="list-style-type: none">Continue implementing sustainable, low energy laboratory designs, such as automated sashes to replace fume hoods, and replace existing water-cooled condensers with air-cooled versions at their end of life.During 2024, the Faculties and Estates teams are developing a plan to convert the high-pressure sodium lamps for plant growth in greenhouses and controlled environment rooms.The University are planning on creating a centralised area to house all ultracold freezers.
	A large dual chamber autoclave has been purchased to replace single autoclaves around the Science Module sites and have centralised and optimised autoclaving for the School of Science.		
	Replacing the Microbiological Safety Cabinets to more energy efficient ones.		
	IT Policies and Waste:		
	The University have allocated an annual budget for staff and centrally managed student IT equipment. The IT policy includes a replacement cycle of 6 years.	Ongoing – as per the roadmap schedule	The University conduct a regular, architectural reviews of IT infrastructure to identify opportunities for upgrades and replacement of equipment before the end of life.
	An IT Asset Management Policy has been developed. (Link here).		
	The University have partnered with the Stone Group to dispose of their IT (WEE) waste. The Group reuse and resell the equipment where possible and if not guarantee a zero-waste pledge.		
	The University is in the process of moving 85% of its server estate to the Cloud. The residual server infrastructure to be upgraded, remains within their data centres along with security and networking equipment is in the IT budget submission for 2024-2025.		



Assessment of Carbon Reduction Roadmap Implementation: Estate

Activation lever: Re-design for zero carbon			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
By 2029 switch all gas boilers to electric across the Greenwich (Queen Anne, Queen May, King William sites) and Bathway (all sites) campuses.	This is still part of the roadmap and budget has been allocated to replace gas boilers. The University invested in operational Combined Heat and Power Plant (CHP) at their Medway campus, which runs on recycled cooking oil. As most of the estate is historic, more consideration and planning on electricity supply is needed. The Devonport Hotel was added to the University's estate in 2021, with the existing buildings having extensive extensions being completed by September 2027. This will be utilising Air Source Heat Pumps.	Ongoing - as per the roadmap schedule	Ensure budget is allocated and strategic plan is in place to upgrade Greenwich and all other campuses by 2029. There is an opportunity to explore where these buildings could be connected to a Royal Borough of Greenwich district heating system.
Implement a 'real-time' energy consumption dashboard, that is supported by area-specific meter readings for electricity, gas and water.	From a reporting and monitoring perspective, the University have upgraded their energy dashboard with automatic meter readings and will be finalised by 2024 for all buildings, on the Greenwich campus. There are plans to implement a water metering programme across the University estate as currently many buildings have submeters.	Ongoing - as per the roadmap schedule	Continue to make upgrades to entire estate, including water metering. Conduct a review in 2025 to understand latest technology developments in energy monitoring dashboards.
Across Greenwich (Dreadnought, Stockwell St. sites), Avery Hill and Medway campuses upgrade the current infrastructure to Air Source Heat Pumps (ASHP). Include site wide ASHP district heating between 2024 and 2028.	As part of the Salix grant, the University have started to implement ASHPs at Avery Hill, with 60% of the gas supply removed. Budget has been allocated and will be maintained to install AHSPs or similar decarbonisation technology, with a focus on Medway and Greenwich campuses. Ground source heat pumps have been explored, but the available area for close loop bore holes was insufficient.	Ongoing - as per the roadmap schedule	Maintain traction with upgrades and develop a plan to expedite the removal of gas supply.
By 2030, the aim is to replace all gas catering equipment as part of the normal end of life cycle to electrically powered alternatives.	The Estates team have a mandate to replace all catering equipment with the most energy efficient models, that are available within their budgets.	Ongoing - as per the roadmap schedule	Ensure there is sufficient budget allocated to purchase the most energy efficient equipment. Also look at refurbished and repairing equipment as well.
Connect to local district heating networks by 2030.	To design and implement the local district heating network at Greenwich campus (using the heat generated from the River Thames), the University have been awarded part of a £70million fund to assist this. Medway campus has been gathering information on building heat loads and speaking with other businesses in the area with regards to a heating network. Work could potentially start in 2026.	Ongoing - as per the roadmap schedule	Continue to identify building loads across each campus and develop plans to connect to the local district heating network.

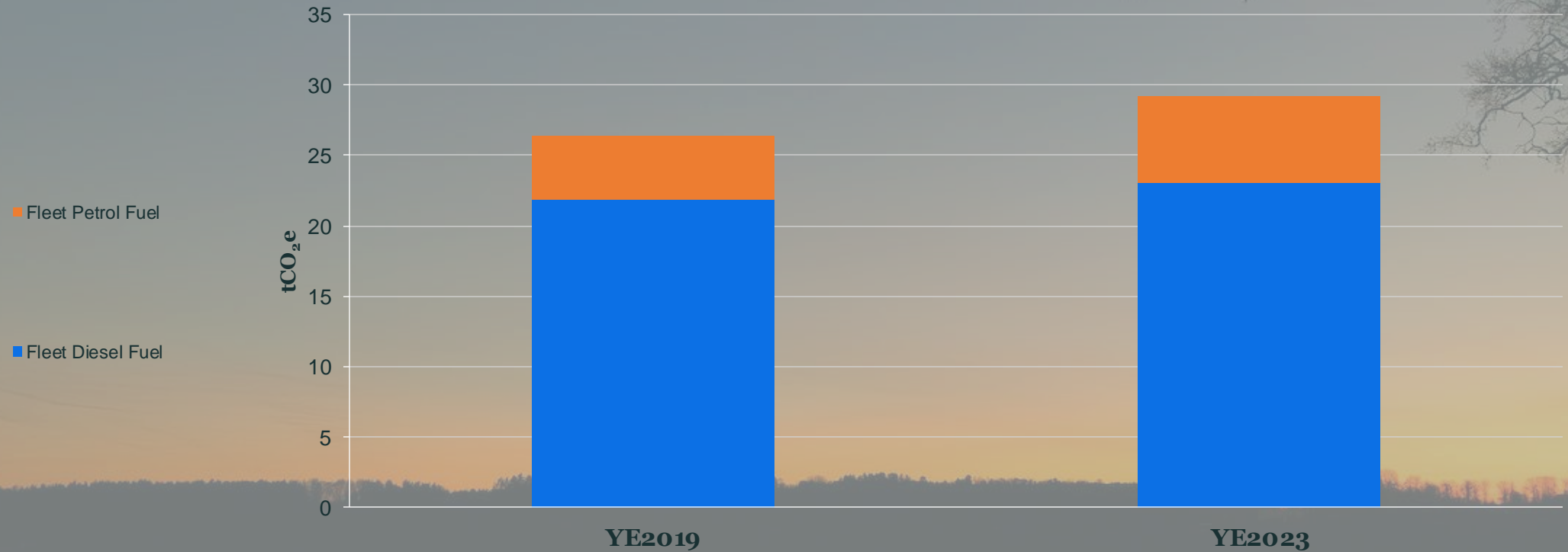


Assessment of Carbon Reduction Roadmap Implementation: Estate

Activation lever: Decarbonise electricity supply			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
Infrastructure upgrades across Greenwich (Dreadnought, Devonport, Cooper, Daniel Defoe and Cutty Sark sites), Avery Hill (David Fussey, Mary Seacole, Anne Boleyn, Henry Tudor, Catherine Howard and Catherine Parr buildings) and Medway (Drill Hall, Hawke and Wolfson sites) campuses, to have on-site solar.	<p>The University have made progress installing solar PV, with 150 units installed across all campuses. A feasibility study for installing additional solar PV has been completed at Avery Hill by the Estates Team. The next step is to work with the Finance Committee to obtain the required funding.</p> <p>The next phase will evaluate all campuses to identify additional sites for solar PV rollout, with Stockwell St. now discussing budgets. The current business case proposes 805 modules at Avery Hill and 120 at Stockwell St.</p>	Ongoing – as per the roadmap schedule	<p>Complete evaluation of campuses and develop implementation plan for Greenwich campus within the next year (2025).</p> <p>Utilise the solar PV infrastructure to charge current and future electric vehicles.</p>
Maintain the zero-carbon status of electricity supply by retaining the current nuclear tariff. Preferably switch to a 100% renewable energy tariff when prices allow.	They are currently still on a nuclear tariff with no plans to move this to an alternative provider.	Completed – as per the roadmap schedule	Continue to utilise a zero-emissions electricity source and on an annual basis, work with Planet Mark to evaluate best renewable energy supply providers. To ensure the University are sourcing the correct renewable energy.



Assessment of Carbon Reduction Roadmap Implementation: Fleet



Overall fleet emissions have increased by **11.0%** from YE2019 to YE2023, well behind the reduction figures scheduled in the roadmap.



Assessment of Carbon Reduction Roadmap Implementation: Fleet

Fleet			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
Between 2021 and 2027, acquire 14 electric vehicles to replace current fossil fuel and hybrid vehicles owned by the University.	By 2024, the University had 5 electric vehicles (EVs) within their fleet.	Behind schedule – ongoing	<ul style="list-style-type: none"> Need to fast track the process of removing petrol/diesel vehicles by switching to electric. Work with electric vehicle leasing organisations to identify opportunities to speed up full fleet decarbonisation. Engage with Sodexo to reduce and / or switch the fleet of 13 vehicles to EVs.
	By early 2024, the University fleet consisted of 5 electric vehicles the University have recently introduced an additional electric vehicle for mail transportation. There are an additional 13 vehicles owned by Sodexo dedicated to the University and used on the Facilities Management contract.		
	The Fleet roadmap is currently under review, with the aim to increase the current stock of electric vehicles. The rest of the EVs will be leased between 2025 and 2027 depending on the start of the new IFM contract. To note, the University have now replaced the vehicles currently undertaking the highest annual mileage.		

The below table illustrates the fleet roadmap devised in line with replacement against current state fleet portfolio (2023/2024).

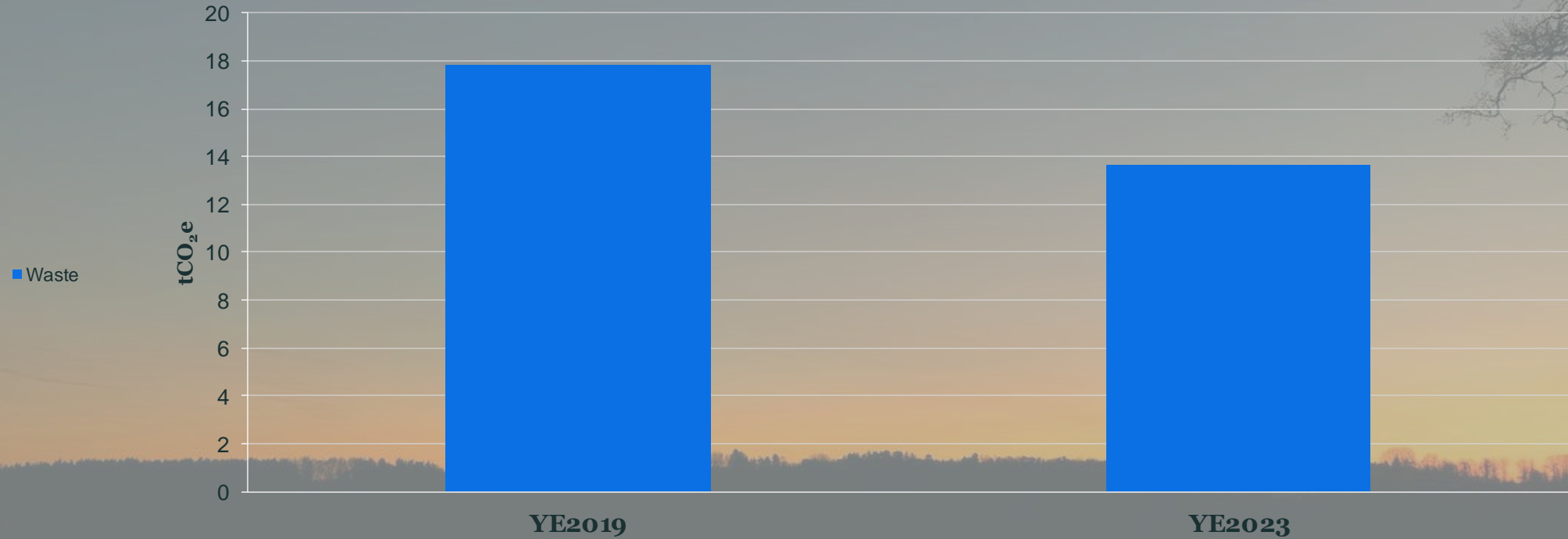
Breakdown YE2021 vs. YE2023						
ZeroBy30 Projected 2021/2022	ZeroBy30 Projected 2022/2023	2023/2024		**Projected 2024/2025	**Projected 2025/2026	**Projected 2026/2027
Fleet: 22 (including 4 EVs)	Fleet: 22 (including 4 EVs)	ZeroBy30 Projected	Current State Portfolio	Fleet: 19 (including 8 x EVs)	Fleet: 19 (including 11 x EVs)	Fleet: 19 EVs
		Fleet: 22 (including 4 EVs)	Fleet: 19 (including 5 x EVs)			

*The 13 Sodexo vehicles have not been included in YE2021 and YE2023 measurement. Therefore, are not part of the 19 vehicles highlighted in the 'fleet portfolio' listed below.

**Fleet Roadmap beyond 2024 reflects new IFM contracts.



Assessment of Carbon Reduction Roadmap Implementation: Waste



Overall waste emissions have decreased by **9.6%** from YE2019 to YE2023, which is a significant decrease but not on track for the reduction figures needed as per the roadmap. The increase in FTE and Student numbers between YE2019 and YE2023 has contributed to being behind the planned reduction schedule.

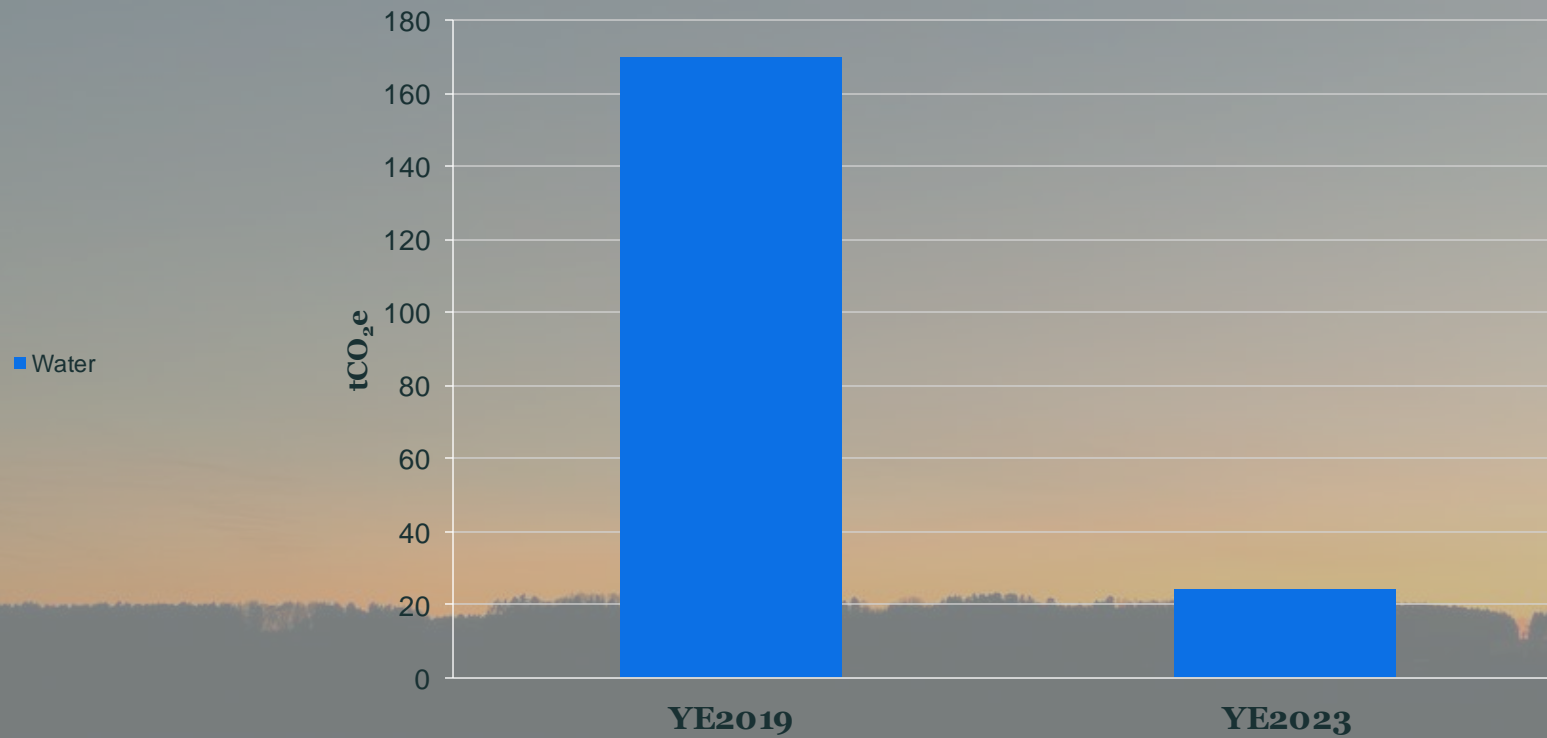


Assessment of Carbon Reduction Roadmap Implementation: Waste

Waste			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
Develop a 'Waste Action Plan' that focuses on engaging students and staff. Includes a target of 70% recycling rate across the University, to support zero to landfill goal.	The University have reviewed and updated the existing 'Waste Action Plan'. A 70% recycling rate target is still a focus and supporting objectives and actions are in place. The current recycling rate is 36% (approximately 600 tonnes per year). Waste per student / staff also reduced to 20% in 2023. The University's main waste supplier has a zero to waste landfill policy and the aim is to utilise this with the University agreement. Currently the University is working with their Capital Projects team on construction and demolition waste to identify zero to landfill waste policy.	Behind schedule – ongoing	Currently the energy from waste needs to be reduced significantly to meet the yearly net zero reduction targets. To help achieve this, the University should work with the waste supplier to further understand how to reduce their waste on campus and with their supply chain.
Create student engagement projects and communication campaigns to support the target of zero to landfill.	The University have maintained and developed many different initiatives for students and staff to support. Including the End of Term Reuse Project, on average, students have donated 3 tonnes of items each year. This also saves 30 tonnes of carbon emissions annually. The 'End of Term Reuse' campaign in 2022-2023, recorded more than 1,000 bags of donations, raising over £20,000 for the British Heart Foundation.	Behind schedule – ongoing	Continue building momentum with student and staff campaigns. Using these to support the 70% recycling rate target.



Assessment of Carbon Reduction Roadmap Implementation: Water



Overall waste emissions have decreased by **85.8%** from YE2019 to YE2023, on track with the reduction figures scheduled in the roadmap.

Note: There was a discrepancy with the total 2019 Water emissions due to data quality issues, accordingly, since the publication of the final ZeroBy30 Report, this has been rectified.



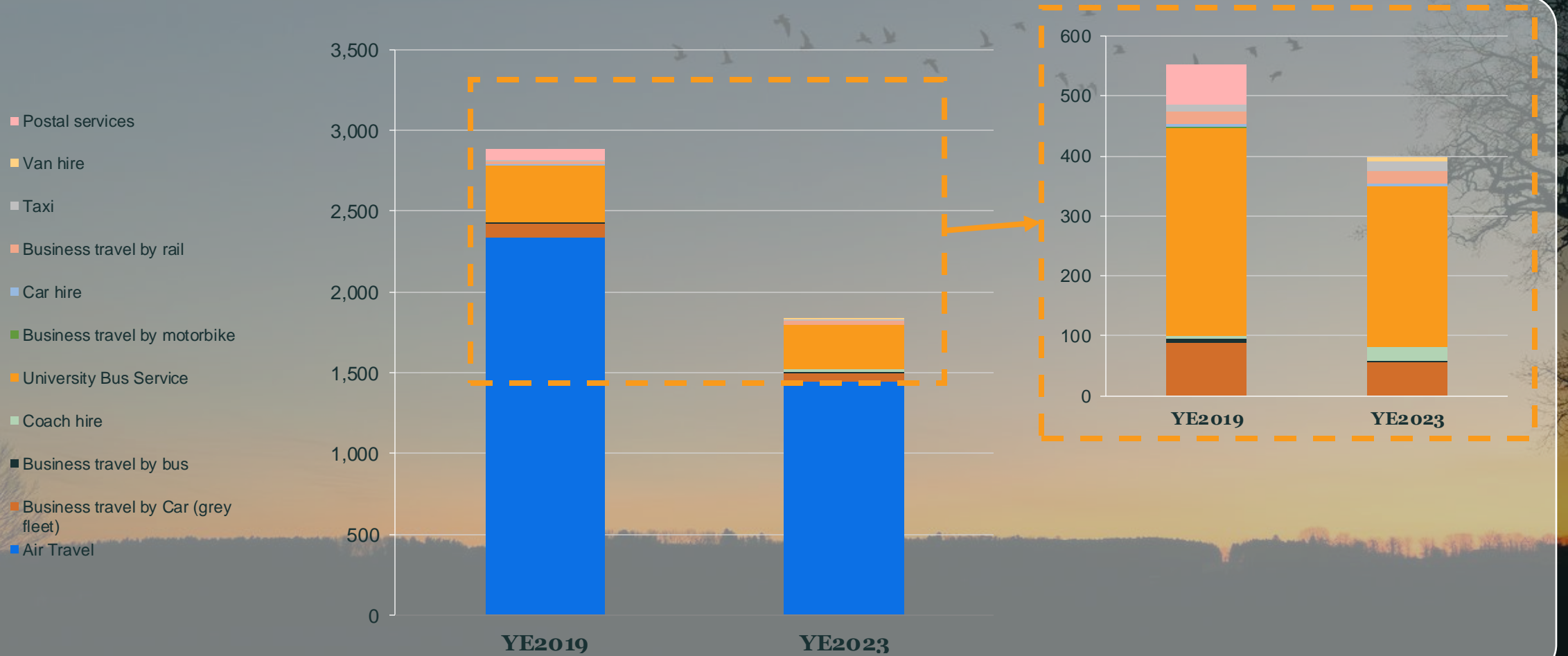
Assessment of Carbon Reduction Roadmap Implementation: Water

Water			
Roadmap solutions (2021)	Progress update (2023)	Status	Next steps
Develop a water management programme that includes prompt identification and remediation of leaks via targeted metering. Look to implement water saving technologies such as low flush toilets and grey water harvesting.	The Avery Hill accommodation have all been fitted with water flow regulators and restrictors. The Facilities team are now fitting push taps in other areas of the Avery Hill campus to replace fault units at end of life.	On schedule	The University must maintain their plan to roll out metering to support identification and remediation of leaks. Emerging water efficient technology should also be monitored.

Note: There is a discrepancy with final the 2019 Water emissions due to data quality issues, but since the publication of the final Zero by 30 Report, this has been rectified.



Assessment of Carbon Reduction Roadmap Implementation: Business Travel



Overall business travel emissions have decreased by **36.3%** from YE2019 to YE2023, on track with the reduction figures scheduled in the roadmap.

Note: The YE2019 baseline emissions for University Bus Service and Car Hire (Grey fleet) data has been redistributed between Business Travel by Bus, University Bus Service and Car Hire in YE2023 measurement. Emissions are still reported but shown in a different boundary for 2023.



Assessment of Carbon Reduction Roadmap Implementation: Business Travel

Business Travel			
Roadmap solutions (YE2021)	Progress update (YE2023)	Status	Next steps
<p>The 2021 roadmap identified that Business Travel (80% attributable to air travel) required a minimum 8% reduction in carbon footprint each year to 2029/30 to reduce measured Scope 3 emissions by 50%. Within the 2021 Zero by 30 Report, the following recommendations were suggested as part of the Green Travel Plan:</p> <ul style="list-style-type: none">• Travel toolkit to help staff make low carbon decisions, which included a travel impact infographic and calculator.• Set site and/or Senior Management carbon budgets for travel.• On the University's internal SharePoint, publish a monthly scoreboard called the 'Business Travel league table' that highlights carbon consumed against budget.• Win the hearts and minds of staff through sustainability training, communication campaigns and support from the 'Eco-team' champions.	<p>The University have focused on reducing their petrol and diesel emissions through initiatives aimed at reducing car travel. These initiatives include cancelling the outsourced parking areas in Greenwich and providing additional bus services. Moreover, the University have deterred staff from using their vehicles by increasing the annual parking permit prices. The cycle to work campaign has focused on including Dr. Bike events and increased security at the cycle parking areas.</p> <p>There has been a staff travel survey, which has now been completed and a dedicated page for green travel has been launched.</p> <p>For Air Travel, the University are currently drafting a policy for staff.</p>	<p>On schedule</p>	<p>The University needs to redirect some of their focus and its campaigns on reducing air travel to continue to meet their targets. Despite a reduction of 36.3% between YE2019 to YE2023, air travel is still the largest emissions within business travel.</p> <p>A review of the 2021 recommendations to support the green travel plan needs to be conducted, with a focus on limiting Air Travel for all staff unless it is a necessity. Starting with the highest emitting staff members. Create clear communication campaigns to promote digital or more sustainable alternatives, with rewards for staff who have created the least amount of carbon emissions.</p>



Section 4

Recommendations



Recommendations

1.

Maintain focus:

From 2019 to 2023, the University of Greenwich's carbon emissions have successfully decreased by 21.5%. To meet their targets, the University must continue to implement impactful carbon reduction solutions for key carbon hotspots including their estate and business travel. This will include creating carbon emission budgets for staff, clear communications regarding the business travel policy, highlighting alternative travel solutions, and enabling virtual meeting options.

2.

Fast track estate carbon reduction plans to meet growth strategy:

Good progress has been implemented on carbon reduction solutions across the University campuses. Considering plans to upgrade the estate, however, solutions will need to be more ambitious and implemented quickly if they are to meet their targets alongside their student population goal of 40,000 by 2030. As the University works to upgrade and expand the existing estate, it is critical that work includes the following enhancements:

- Continue expanding the solar PV infrastructure across all sites and campuses.
- Update current fossil fuelled boilers and heating systems to electric, ASHPs and GSHPs.
- Upgrade all campuses and sites with the latest smart controls and transformers with voltage regulation.
- Updating existing buildings to be as energy efficient as possible, utilising the latest technologies and working with the within the remit of Historic England and Local Council building requirements.
- Ensure all key budgets are in place to meet the future deadlines of decarbonising the estate. This includes solar PV, electric boilers, ASHPs, GSHPs and local district heating networks.
- Continue working with local establishments such as the National Maritime Museum through the 'Action Plan Group' to share learnings and decarbonisation strategies.

3.

Measure full material Scope 3 emissions:

Since 2021, the industry standard for corporate net zero target setting has evolved and it is now best practice to align with the SBTi Corporate Net Zero Standard and set a target to reach net zero no later than 2050. Accordingly, it is essential for the University to establish near-term and long-term targets to support their net zero goal. The University of Greenwich are internally developing their Scope 3 measurement strategy, to be externally quantified and verified by Planet Mark. It is imperative that the University have visibility of their full Scope 3 emissions portfolio*, as these can account for more than 70% of an organisations carbon footprint¹. Once all material Scope 3 emissions have been measured, the University will be able to update the ZeroBy30 Report to create a full Net Zero Transition Plan. The Net Zero Transition Plan will provide clear guidance on implementing carbon reduction solutions across all 3 Scopes, to support the near and long-term net zero targets.

*The additional Scope 3 Categories considered to be measured are: Cat. 1, Purchased Goods & Services; Cat. 2, Capital Goods; Cat. 4 Upstream Transportation and Distribution; Cat. 7 Employee Commuting; Cat. 8 Upstream Leased Assets; Cat. 9 Downstream Transportation and Distribution; Cat. 13 Downstream Leased Assets and Cat. 15 Investments.

¹ UN Global Compact Network UK. <https://www.unglobalcompact.org.uk/scope-3-emissions/>



Section 5

Appendix



ZeroBy30 Report Updates

Updated information in support of the ZeroBy30 Net Zero Plan:

- The Executive Director of Estates and Facilities is responsible for the delivery of the University's carbon reduction plan.
- An updated financial carbon reduction budget was agreed in 2021/2022 equalling £24.3million to support the Universities targets.
- The mechanism for monitoring the carbon reduction plan will be reported to the Sustainability Management Committee, the SECR and the University's Annual Sustainability Report.
- Reporting Periods: The baseline for the carbon emissions was calculated on the University's activity levels in the financial year 2018/19, as this is the most representative recent year that was not skewed by the Covid-19 pandemic.
 - Planet Mark have not verified the 2018/19 baseline emission data supplied by the University of Greenwich. Current emissions are not a full measured Scope 1, 2 and 3 emissions.
 - The University of Greenwich are internally developing their Scope 3 strategy, and this will externally be measured and verified going forward.



Detailed baseline YE2019 and current YE2023 footprint comparison

		YE2019	YE2023	
Scope	Category	tCO _{2e}	tCO _{2e}	% change
Scope 1	Biodiesel	0.0	40.3	-
	Natural gas	3208.5	2755.7	-14.1%
	Refrigerants	0.0	140.9	-
	Fleet Diesel Fuel	21.8	23.0	5.4%
	Fleet Petrol Fuel	4.5	6.3	37.6%
Scope 2	Electricity [Location-based]	5068.4	2841.7	-43.9%
	Electricity [Market-based]	214.4	30.8	-
Scope 3	Air Travel	2335.2	1443.4	-38.2%
	Business Travel by Car	88.3	54.7	-38.0%
	Business Travel by Bus	6.9	4.0	-42.6%
	Coach Hire	4.4	21.9	394.0%
	University Bus Service	346.2	268.2	-22.5%
	Business Travel by Motorbike	3.6	1.1	-69.3%
	Car Hire (Grey fleet)	4.0	4.4	10.6%
	Business Travel by Rail	19.8	21.3	7.8%
	Taxi	11.5	15.4	33.9%
	Van Hire	0.7	6.4	888.9%
	Postal Services*	67.6	0.0	-100.0%
	Waste**	17.8	13.6	-
	Water****	170.0	24.1	-85.8%
	Transmission and Distribution Losses	-	244.4	-
Total (location-based)***		11379.2	7930.8	
No. staff and student FTEs		17098.0	28208.0	
Total per employee		0.7	0.3	
Total (market-based)		6525.1	5119.9	
No. staff and student FTEs		17098.0	28208.0	
Total per employee		0.4	0.2	

Notes:

The YE2019 baseline emissions for University Bus Service and Car Hire (Grey fleet) data has been redistributed between Business Travel by Bus, University Bus Service and Car Hire in YE2023 measurement. Emissions are still reported but shown in a different boundary for 2023. Transmission and Distribution Losses and Biodiesel have increased since the publication of the ZeroBy30 Report in January 2022 due to the University expanding their estate and improving data quality.

*Postal Services YE2023 data has not been captured within the verification boundary. Emissions associated with Postal Services to be included in Scope 3, Category 4. Upstream Transportation & Distribution.

Construction waste data was included in the YE2023 Business Certification. *Total (Location-based) excludes the Scope 2, Electricity Market-based emissions. ****There was a discrepancy with the final 2019 Water emissions total due to data quality issues, but since the publication of the final ZeroBy30 Report, this has been rectified.



July 2024

Progress Report 2019-2023 **University of Greenwich**