University of Northampton

Environment & Sustainability Report 2023/2024

Contents of the Report

1.0 Introduction

Over the past year, the University of Northampton has worked to implement a variety of initiatives aimed to conserve energy, reduce waste, preserve biodiversity and educate our community on the importance of sustainable practices.

This Environment and Sustainability Report 2023/2024 provides a comprehensive overview of our achievements, challenges and the strategic projects we have undertaken to integrate sustainability into every facet of university life. This report highlights performance against associated targets set for the academic year 2022/23 and compliments our Environmental Management System (EMS) manual, which gives further details of targets and achievements across a 12-month certification period.

2.0 Executive Summary

The University of Northampton (UON) is committed to achieving net zero carbon in scope 1, 2 and 3 by 2050, with an ambition to reach our goal within the next decade, making significant progress toward sustainability goals. Over the past year, the carbon footprint per full-time student (FTE) has continued to decline with an 18% reduction from the previous year.

Students and staff have worked collaboratively to implement a variety of initiatives aimed at conserving our resources, reducing consumption and preserving biodiversity, all having a positive impact on the community around us.

Reporting, data analysis and engagement have been a key focus over this last year, ensuring we have the data to support the success of engagement and behavioural change campaigns, these include waste reduction and energy consumption. The commissioning of an ecological survey across the UON estate provides a baseline of habitats and ecology from which key initiatives can be identified enabling the growth of bio-diversity across all sites.

With another successful year behind us, UON continues to integrate sustainability into our strategy, culture, and operations, reinforcing our commitment to environmental and social responsibility. As we look ahead to 2024/25, we remain dedicated to building on this momentum, driving further progress through research, education, and meaningful action that supports a more sustainable future for all.

Becky Bradshaw

Deputy Vice Chancellor and Chief Operating Officer

3.0 Key Achievements in 2023-2024

ENERGY & CARBON

Carbon emissions (CO2e) remain below 2018/2019 baseline data (-16%), however have increased 21% from the previous year.

3% increased in site-wide electricity consumption and 39% gas usage compared to the last reporting period.

The carbon footprint per fulltime (FTE) student continues to decrease, with an 18% reduction on the previous year.

WASTE

Total waste generated in 23/24 reduced by 33% against the 2018/2019 baseline data and 19% vs the previous year. A focus on waste avoidance has supported the reduction, with many re-use and donation options taken across faculties and departments.

BIODIVERSITY

Ecological surveys have been conducted across three University of Northampton sites, underscoring our commitment to environmental protection and biodiversity conservation.

The UON Nature Hub Surveying Tool, has been incorporated into teaching and is now an integral part of field day lectures within our biological science courses.

ENGAGEMENT

The UON Sustainability Summit attracted over 300 delegates from over a hundred different businesses, charities, HEI's, and local government authorities. Stakeholder discussions at the first Summit in 2023 produced a multi-party stakeholder agreement called the Northampton Sustainability Accord.

Under this Accord, stakeholders agreed to pursue a shared set of sustainability goals such as progression towards Net Zero and Decarbonisation, sustainable water use, eradication of modern slavery in supply chains, waste minimisation, amongst several others.

4.0 Progress to Date

4.1 Energy

The UON consumed 9,322 MWh of electricity from our zero carbon for business tariff. This is an increase of 3% compared to the previous academic year, with a reduction of 17% from baseline (*Figure 1*).

Gas consumption increased by 39% on the previous year (22/23) with 10,646 MWh of gas being consumed. This is a reduction on baseline (6.5%) however a year-on-year trend of increasing consumption is beginning to emerge and therefore more efficient heat sources should be prioritized, for example ensuring the Biomass is working to optimal efficiency.

Biomass use has increased by 69% from the previous year, this is due to the biomass boiler remaining fully functional from Nov 23 to May 24, in comparison to 22/23 with 4 months down time during the winter period.

Whilst the biomass generation increased, a year-on-year trend of increasing gas consumption is beginning to emerge, with Gas accounting for 48.77% of energy usage (*Figure 2*) and therefore more efficient heat sources should be prioritized, for example ensuring the Biomass is working to optimal efficiency.

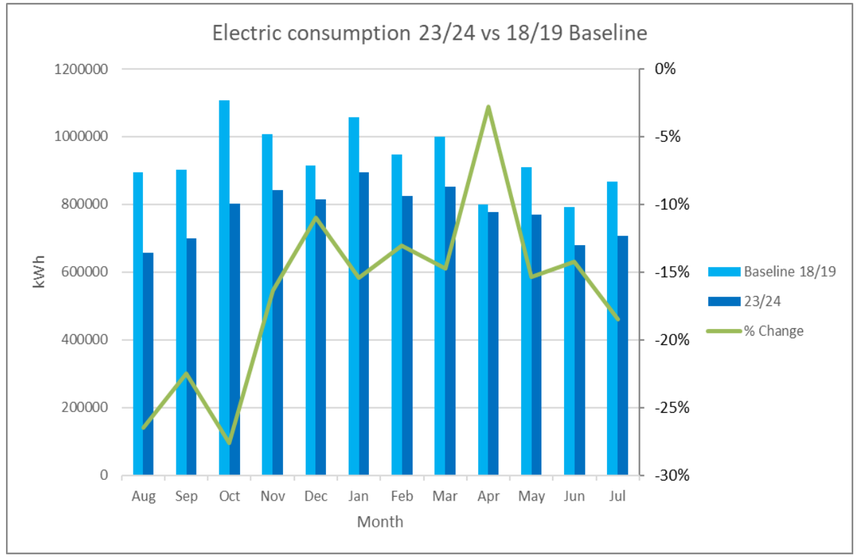


Figure 1. Electricity consumption from zero carbon for business supply.

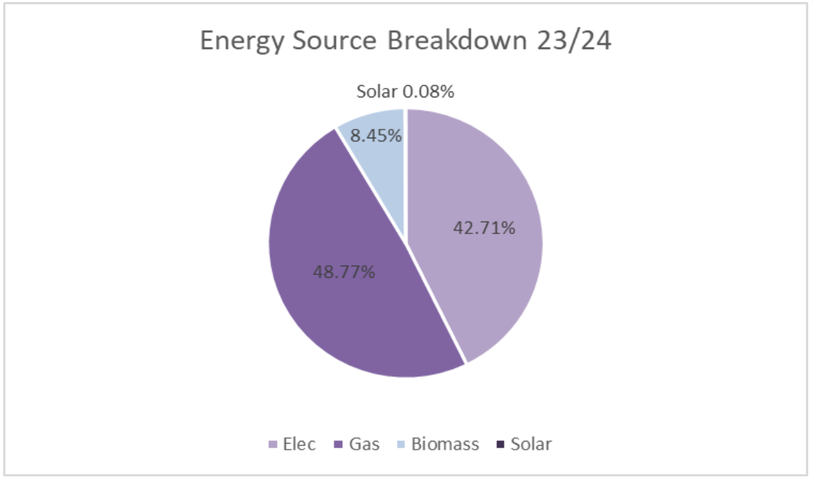


Figure 2. Breakdown of energy consumption by source

4.2 Water

Total water usage for 2023/24 is 111,030 M^3, an 11% increase on the previous year, this is evident across most moths of the year (*Figure 3*) however consumption for 23/24 against baseline is showing a positive 20% reduction.

Consumption has been relatively stable throughout the academic year, in comparison to the previous year with a significant spike in March due to a water leak at Scholars Green Halls during the same period.

Detailed analysis into consumption across all buildings, specifically halls is required to help identify where water reduction projects and initiatives are required, or potential issues exist.

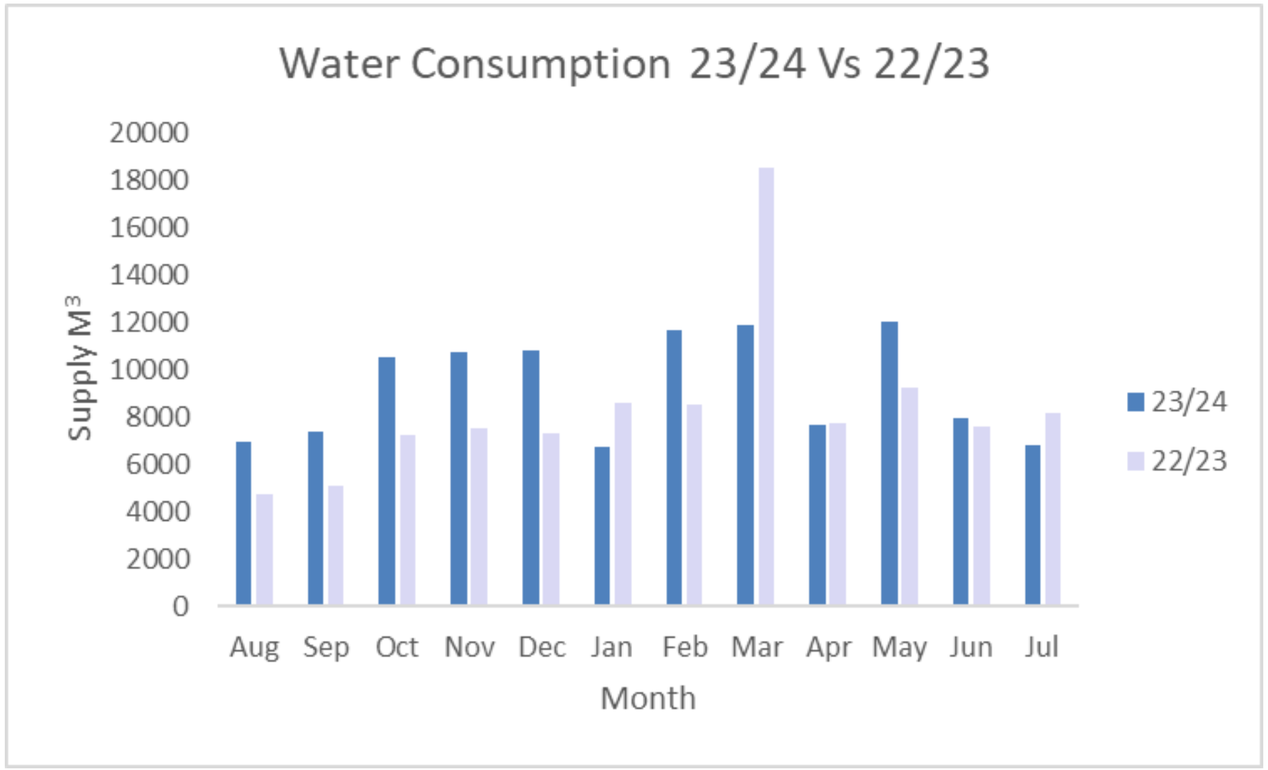


Figure 3. Water consumption comparison 23/24 vs 22/23

4.3. Waste

The current academic year (2022/23) has seen an overall decrease in waste by 9% (-51.53t) (*Figure 4*) when compared to the previous academic year (2022/23).

This is a 24% decrease on waste produced during the baseline year, waste avoidance is an integral element of the revised UON Waste Policy and therefore is anticipated to make further reductions year on year.

The total waste produced between August 2023 to July 2024 was 594.52 tonnes (t) of which, 325.85t (54.81%) was recycled, 268.67 tonnes of waste was sent for energy recovery (EfW) and 0 tonnes were sent to landfill (Bio-ash).

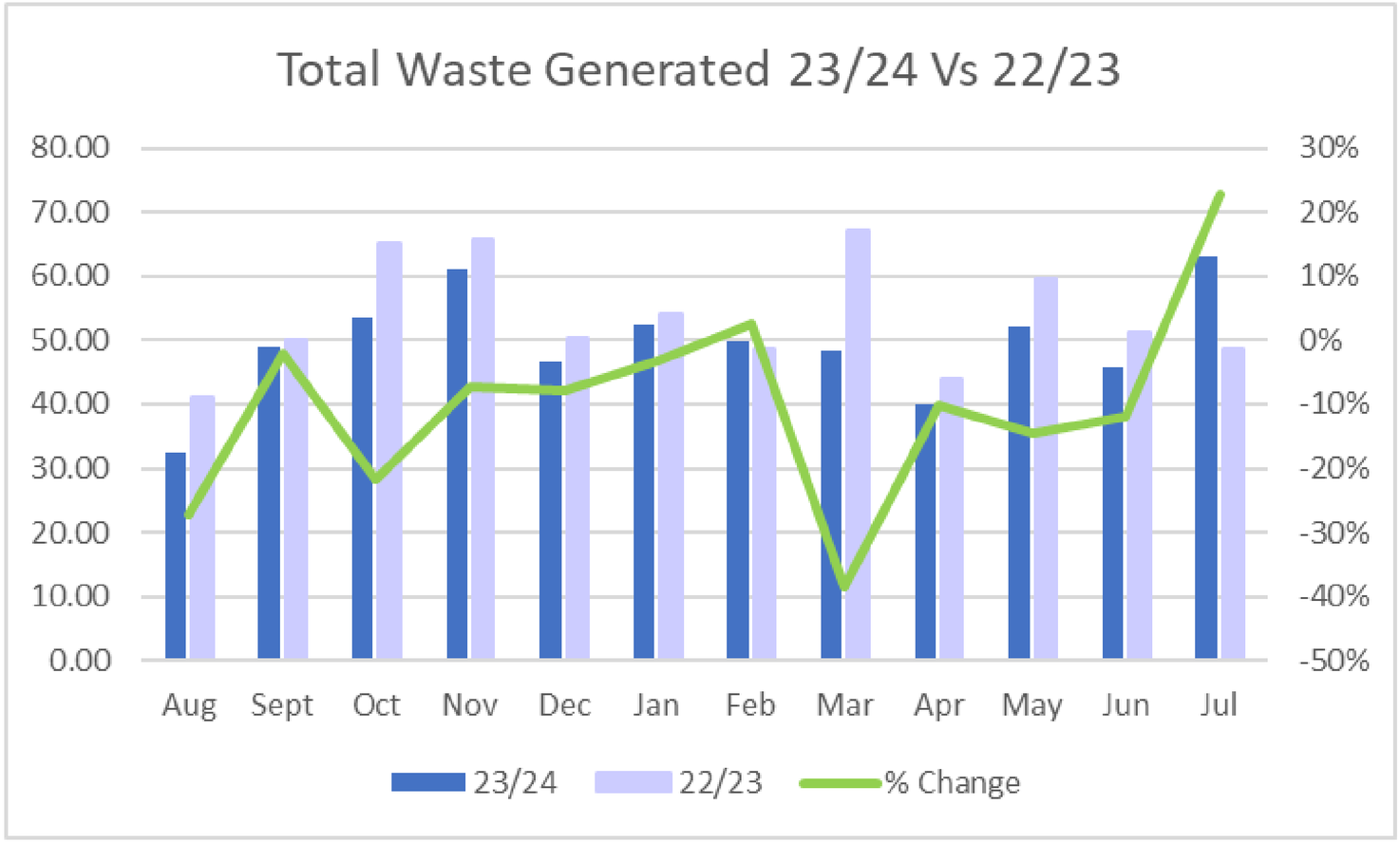


Figure 4. Total waste across all UON estates by month

4.3.1. Recycling rates

The annual recycling rate across all buildings for 23/24 is 55%, a reduction of 6% from 60.7% in 22/23 and a further 13% reduction on baseline 2018/19 data. (*Figure 5*)

The residential buildings represent 42% of the total recyclable waste produced across all sites, with an annual recycling rate of 47%. This is a reduction of 5% on the previous year for residential buildings only. (*Figure 6*)

Behavioural campaigns and targeted communications are required to engage students in waste segregation and recycling to support an increase in the % of recyclable material captured.

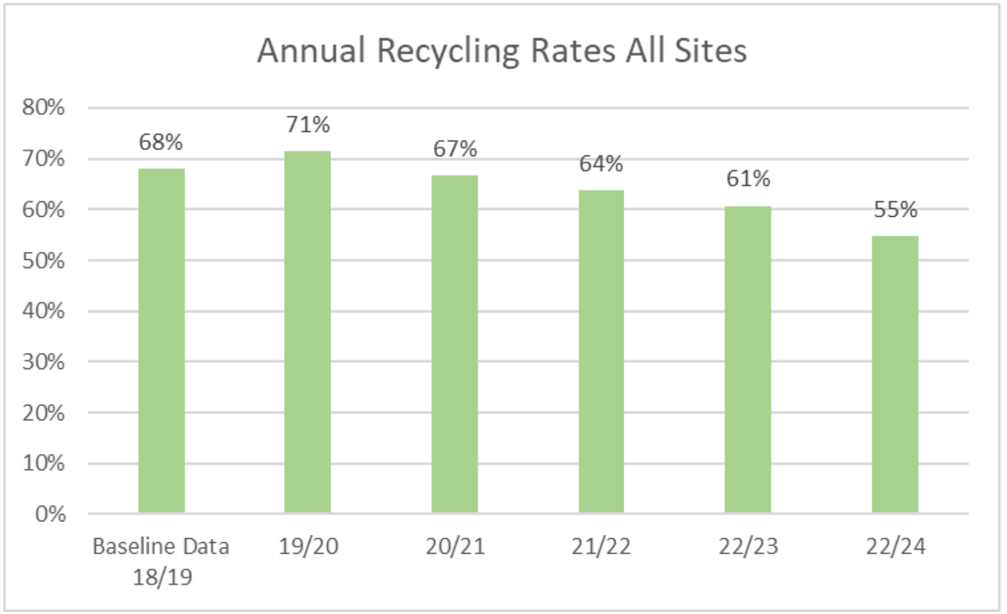
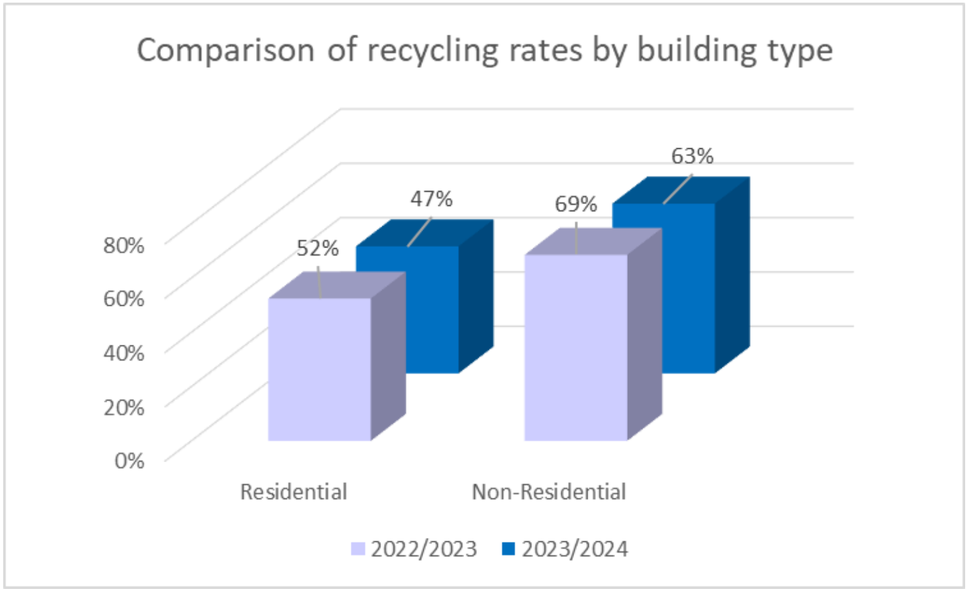


Figure 5. Annual Recycling Rates Vs Baseline data

Figure 6. Recycling rate comparison by building type



4.4 Carbon Footprint Calculations

The methods of calculation used by UON follows GHG Protocol Guidance of both Market-based and Location-based calculations.

- **Location-based reporting** calculates emissions based on the average emissions generated by the local power grid and uses the DEFRA conversion factors to formulate the footprint.

- **Market-based reporting** calculates emissions from the specific electricity the university has chosen to purchase. This reflects sustainable procurement decisions, such as the EDF Zero Carbon for Business Tariff, currently purchased via the Universities membership to TEC (The Energy Consortium).

Prior to 2023/24 the university has only reported location based emissions. We transitioned to zero carbon power using EDF Zero Carbon for Business in October 2022 so are reporting our Market based emissions for the first time. The GHG Protocol recommends to use both Location and Market-based calculations for reporting, therefore both methods are included in End of Year Reporting from academic year 2023/24.

4.5 Carbon Footprint Reporting

Reporting continues to evolve year on year with additional resources / items being added into the scope categories. Refrigerants have been added to scope 1 calculations from 2023/24:

- **Scope 1:** Direct emissions from Gas, Biomass, Fuel for Fleet and Refrigerants
- **Scope 2:** Indirect emissions from purchased electricity
- **Scope 3:** Emissions from activities related to services or goods purchased including Water, Waste disposal [1] and Business Travel

CO_2e (t) 2024/25

- Location-based: 4,734.1 tCO_2e
- Market-based: 2,803.9 tCO_2e

Using the location-based reporting for comparison, emissions have increased by 21% from the previous year largely due to the increase in gas and electricity consumption. This remains below baseline (-16%). Taking our sustainable energy purchasing choices into consideration, our Market based emissions have reduced significantly, -29% from the previous year and -50% on baseline. (*Figure 7*)

[1] The waste emissions calculation has been amended this year to reflect the various DEFRA factors for different waste streams i.e. batteries, food and green waste, previously one factor for the relevant year was used for all waste streams.

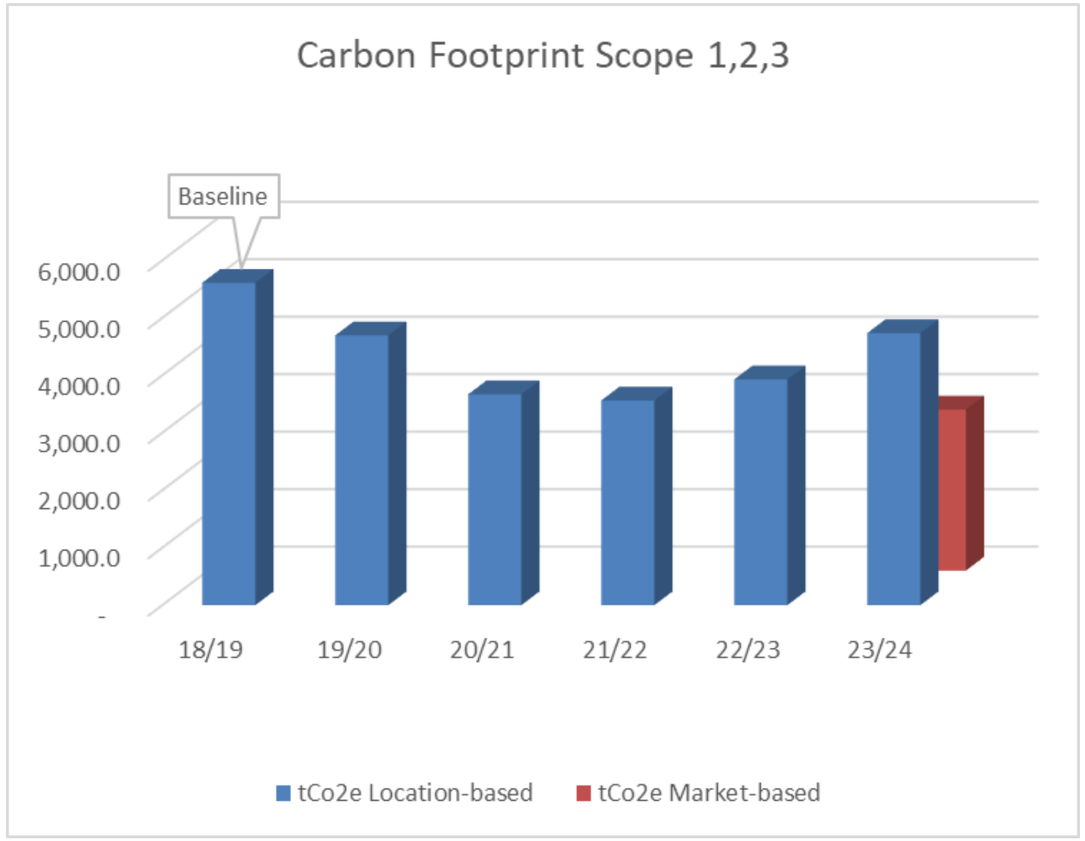


Figure 7: Annual Carbon Footprint.

4.5.1 SCOPE 1 & 2

ENERGY, FUEL, REFRIGERANTS

Emissions have increased in 2023/24 by 26% (*figure 8*) from the previous year (location-based). This is the result of a combination of factors including servicing of the Air Handling Units (AHU) in one of our buildings being significantly delayed, reducing its efficiency, and increased tenant occupancy in previously un-occupied offices increasing gas and electricity consumption. However, despite this our sustainable energy purchasing choices resulted in a 31% reduction in our Scope 1 and 2 footprint compared to the previous year (*figure 9*).

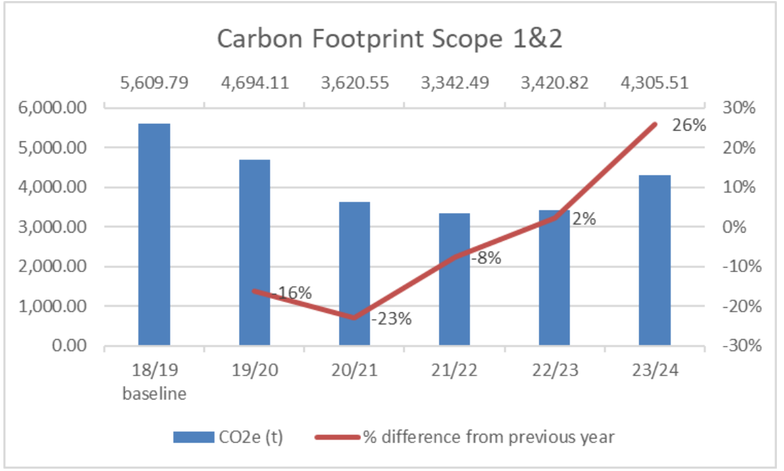


Figure 8: Location-based annual S1&2 tonnes CO_2e Vs Previous Year

Scope 1&2 emissions dropped significantly during 20/21 and 20/22 due to reduced footfall across campus and lower numbers of students occupying halls. Since 22/23 the footfall has increased resulting in higher energy usage across the estate. Energy Reduction Projects are underway to ensure optimal energy efficiency in all areas. Further details are provided within the Environmental Management System Manual (EMS).

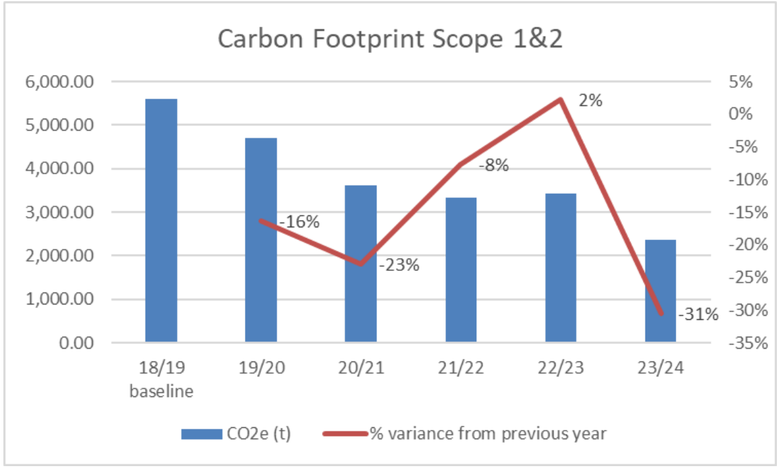


Figure 9: Market-based annual S1&2 tonnes CO_2e Vs Previous Year

TRAVEL OF UON FLEET VEHICLES & UNO BUS*

Carbon has increased by approximately 60 tonnes of CO_2e and we believe this is because it is the first academic year since Covid that all teams were fully functioning, trips resumed, and buses ran on a full schedule. We could look at this encouragingly that bus usage increased as a means of sustainable travel rather than opting for single car journeys amongst staff and students.

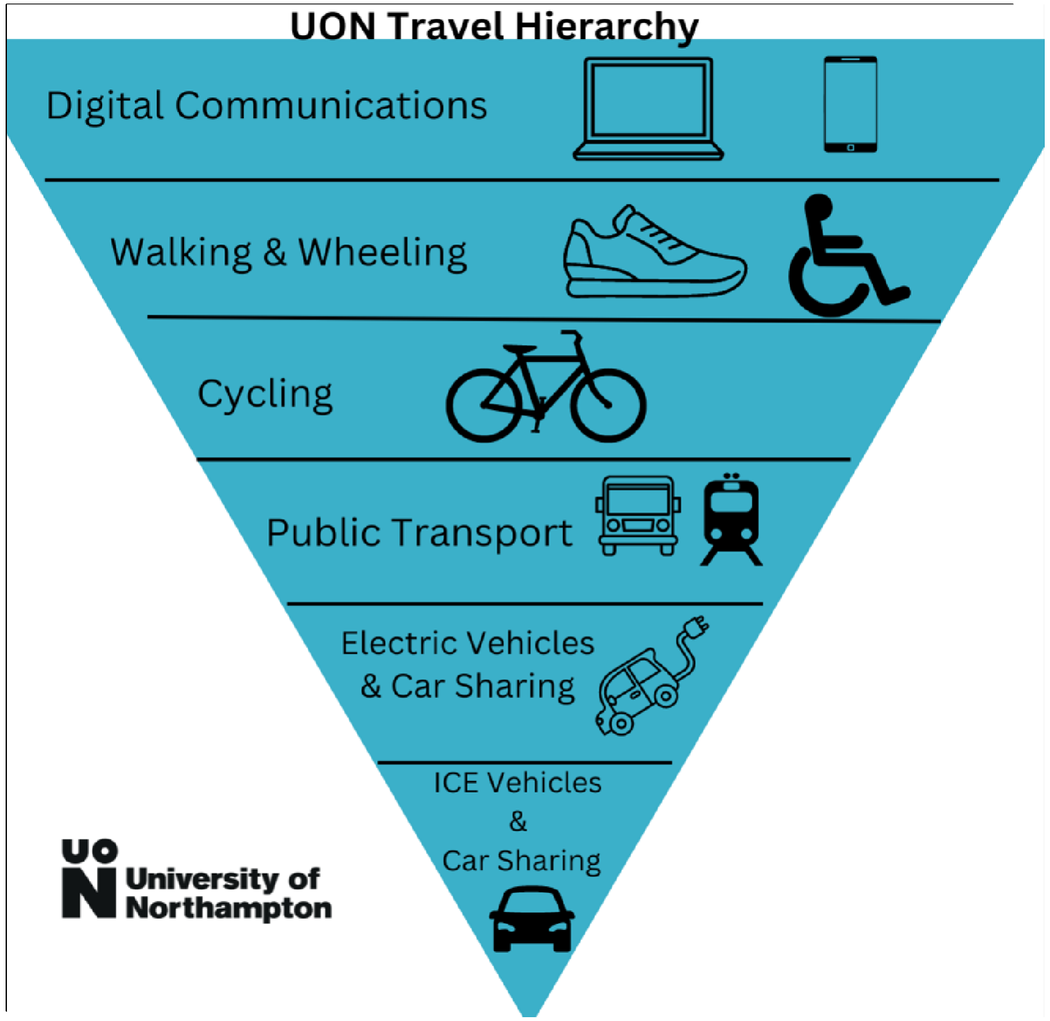
*Uno bus stats until March 2023. Stagecoach then took over as our provider.

4.5.2. Scope 3

Travel

Privately owned vehicle trips, rail and air has increased this year compared to last but this too could be an indication of the campus being fully functional compared to the previous year when covid was very much present. It could also indicate that staff are using our rail network for business travel rather than driving in their cars, which is positive when looking at sustainable travel and the travel hierarchy.

Because the data provided did not state the size of vehicles used, a calculation of an average sized vehicle was used to calculate Scope 3 for the trip and business travel data.



Water

Total emissions produced for Water Supply and Sewage is 42.77 tCO2e. This is a 69% reduction on baseline with the main reduction being the emissions attributed to the treatment of wastewater which is 72% below baseline, this is evidence of the water efficiency initiatives in place across all areas of the estate.

Waste

11.77 tCO2e was produced from waste disposal for 23/24, a 9% reduction on the previous year and 30% reduction from baseline, this is largely attributed to the reduction in food waste.

4.6. Sustainable Travel

4.6.1. Single occupancy vehicle (SOV)

This was the first academic year of focusing on increasing active travel rather than decreasing SOV as a target. Whilst the overall goal is to still decrease the single trips to campus, we hope that by encouraging active travel, the SOV trips will reduce naturally.

The incentive to staff & students to complete the survey was dramatically increased, but did not bring in the numbers we expected. Next years incentive will be discussed at the Sustainability Board & a focus group.

From our Big Green Survey results Single Occupancy Vehicle trips decreased from 79% to 71% among staff and decreased from 54% to 10% among students.

4.6.2. Active Travel

Cycling and walking were the main focus for this year's active travel campaigns. We ran free cycling ability sessions for staff and students at the beginning of the academic year in partnership with Delapre's Space2Talk. Both dates had a good uptake & those who completely the course received a £200 voucher for cycling accessories or a refurbed bike.

A Walk This May step count challenge was very well received by staff and students with a collective total of 4, 605, 073 steps taken by those who participated.

From our Big Green Survey results , Active travel increased from 24% to 39% among staff and 34% to 88% among students.

Space2Talk Cycling with Confidence Basic Bike Tutorial

4.6. Sustainable Travel

4.6.3. Other Forms of Travel

Electric vehicle usage has increased with both staff and students. Based on the charges made at Waterside & Development Hub campus, we have avoided 13,336.57 tonnes of CO2 emissions from altnerative fuel vehicles during 2023/2024.

Stagecoach Bus became our bus travel provider in March 2023 and to date (Dec 2024) we have 1299 staff and students signed up to the UON discount ticket scheme.

Voi Scooters continue to be used across Northampton and UON's 'Slow Zone' was extended across the whole of Waterside Campus to ensure safety to all.

Car sharing continues to be popular among our students with 16 permits given out for this year which saved 27 single occupancy vehicles coming into the town.

Stagecoach Buses

4.7 Ecology and Biodiversity

The University of Northampton has undertaken a comprehensive Preliminary Ecological Appraisal (PEA) and Biodiversity Net Gain (BNG) assessment across three pivotal sites: Waterside Campus, Scholars Green Halls of Residence, and Gallagher Fields.

These ecological evaluations are crucial steps towards the development of a robust Biodiversity Action Plan. The PEA provides a thorough baseline analysis of the existing habitats and species, offering essential insights into the ecological value and potential of each site. Complementing this, the BNG assessment ensures that any development initiatives will result in a net positive impact on biodiversity, aiming to enhance and restore the natural environment.

Together, these efforts at Waterside Campus, Scholars Green, and Gallagher Fields underscore the University's commitment to ecological sustainability and responsible environmental stewardship, setting a standard for biodiversity conservation and sustainable development.

The reports are due in October 2024 and their findings will be shared.

4.8 Engagement

Halls H.E.R.O.E.S

UON once again partnered with Students Organising for Sustainability UK for the Halls H.E.R.O.E.S campaign for the final academic year. Aimed at all students who wanted to learn how to live more sustainably, gain a wider understanding of climate change and to develop skills and practice simple lifestyle changes, competitions and events were held throughout the year to promote sustainable living.

Sustainability Champions

The Sustainability Champions were invited to talks by Carey Allen on Wellbeing in Nature and Kardi Somerfield on Wellbeing in Creativity during Wellbeing Week, however due to staff reduction, our focus was drawn away from the Champions and this was shown in the low turn-out at the event. We have since emailed staff and students who have shown an expression of interest in the Champions through our Big Green Survey & will be relaunching in January 2025 with more focused events tailored to their wants and needs. This will include Swap Shops, litter picks & Hedgehog Friendly Campus activities. We will also continue to support their own projects upon their request.

Awareness Weeks

The University of Northampton (UON) has demonstrated a strong commitment to sustainability through a series of dedicated weeks focused on various aspects of environmental and personal well-being. These initiatives are designed to engage students, staff, and the local community in meaningful actions and education towards a more sustainable future.

- Waste Week - emphasised the importance of reducing waste and promoting efficient waste management practices, the importance of reducing waste and promoting efficient waste management practices. practices, the importance of reducing waste and promoting efficient waste management practices.
- Recycling Week - focused on educating the university community about the significance of recycling and the proper methods for separating and disposing of recyclable materials.
- Wellbeing Week - dedicated to promoting holistic health and wellness among students and staff.
- Water Week - brought attention to water conservation and the critical role of water in sustaining life, raising awareness of global water issues, water-saving tips for daily life, and the environmental impact of water waste.
- Biodiversity Week - UON partnered with the Northamptonshire Biological Records Centre to conduct a bioblitz, an intensive biological survey aimed at recording all the living species within a designated area. Students and staff engaged in hands-on biodiversity assessment activities, learning about the diverse flora and fauna that inhabit the university grounds.

Sustainability Summit and Sustainability Local Innovation Partnership Agenda Hub (SLIPAH)

"The UON Sustainability Summit is an annual sustainability event led by Dr Ebenezer Laryea and held at the University of Northampton's Waterside campus. The purpose of the Summit is to provide a platform which brings businesses, charities, educational institutions, policy makers and local government authorities together to identify and address shared sustainability challenges through collaborative research, enterprise and knowledge exchange.

Since its maiden edition in 2023, the UON Sustainability Summit has attracted over 300 delegates from over a hundred different businesses, charities, HEI's, and local government authorities. Stakeholder discussions at the first Summit in 2023 produced a multi-party stakeholder agreement called the Northampton Sustainability Accord. Under this Accord, stakeholders agreed to pursue a shared set of sustainability goals such as progression towards Net Zero and Decarbonisation, sustainable water use, eradication of modern slavery in supply chains, waste minimisation, amongst several others. In addition to setting these goals, the stakeholder community also committed under the provisions of the Accord, to establish a hub at the University of Northampton called the Sustainability Local Innovation Partnership Agenda Hub (SLIPAH).

Under the terms of the Accord, SLIPAH was given a mandate by the stakeholder community to coordinate all the collaborative research, knowledge exchange and enterprise activities required to operationalise the Accord and deliver on the sustainability goals set out in the Accord whilst collaborating with stakeholders. Since it was established in July of 2023 the work done through SLIPAH has so far successfully attracted external grant funding of over 900k to coordinate and run different projects on Net Zero, Decarbonisation and Waste Management. These projects provide research and knowledge exchange support to over one hundred business and charities to help them pivot to more sustainable business practices. As an example of its impact, SLIPAH has recently been able to collaborate with external partners to develop a bespoke carbon calculator with Net Zero modelling capabilities that local businesses can use to calculate their emissions and model their Net Zero plans.

Following on from the progress made in the twelve months after the holding of the 2023 Summit and establishment Of the Northampton Sustainability Accord, the local stakeholder community once again gathered on the 20th and 21st of May for the UON Sustainability Summit 2024. The aims of this year's Summit were two-fold; a) take stock of the progress that has been made towards achieving shared sustainability goals so far, and b) identify innovative solutions that help accelerate collective efforts in areas of the Northampton Sustainability Accord where progress has been lacking. The main outcome of the Summit this year was the agreement of a schedule to the Northampton Sustainability Accord which will deliver shared solutions to address shared sustainability challenges in areas such as circular economy, sustainable water use, flood management and behavioural change.

As we look ahead to future years, the UON Sustainability Summit and Northampton Accord Frameworks will continue to provide a foundational basis upon which we collaborative progress can continue be made to address shared sustainability challenges within the local stakeholder community. Together, we are not just meeting today’s challenges but paving the way for a brighter more sustainable future for generations to come."

Dr Ebenezer Laryea

Associate Professor of Sustainable Development Law & Chair of SLIPAH & CSBP

5.0 Future Goals, Targets and Key Performance Indicators

Action Plan	Overall Target	Annual Target(s)	Measure
1: Electricity	Consumption not to exceed 2018/19 levels by more than 2%	2% Reduction (vs previous year)	Overall consumption of electricity monitored through the University's sub-metering system and monthly utility invoicing. DEFRA emissions factors applied to calculate carbon emissions.
2: Gas & Biomass	Gas Consumption not to exceed 2018/19 levels by more than 5%	2 % Reduction (vs previous year)	Overall consumption of gas monitored through the University's sub-metering system and monthly utility invoicing. DEFRA emissions factors applied to calculate carbon emissions.
3: Water	Consumption (Supply and Waste) not to exceed 2018/19 levels by more than 1%	1 % Reduction (vs previous year) in consumption across all existing buildings	Overall consumption of water monitored through the University's sub-metering system and monthly utility invoicing. DEFRA emissions factors applied to calculate carbon emissions.
4: Biomass (New)	To provide 85 % of total Heat Supply of Waterside Campus	10% increase in usage vs previous year.	% of biomass kWh produced vs gas kWh Waterside Campus only % of biomass kWh produced vs previous year
5: Carbon Management (updated)	Net Zero Carbon Scopes 1, 2 & 3 in line with the Government legislation target of 2050 with an ambition to do it within the next decade	60% reduction in carbon emissions from 18/19 Baseline	Approval of the Carbon Management Plan Carbon Footprint Calculation of Total Co2e produced across the estate

Action Plan	Overall Target	Annual Target(s)	Measure
6a. Waste – Recorded as General (updated)	Reduce total waste recorded as general to 23kg or less per Student FTE by 2030	2 kg reduction (vs previous year) in the total waste recorded as general per Student FTE	Measured through the annual Student FTE Normalisation Factor: Waste recorded as general (all sites) / Student FTE x 1000 = Kg waste per Student FTE Measured using the data from all waste management contractors including Suez and Stericycle reports and Waste Transfer Notes.
6b: Waste – Recyclable Material	70% of total waste produced recorded as recyclable material	5% Increase in recycling rate	Measured using the data from all waste management contractors including Suez, Stericycle and Cawleys monthly reports and Waste Transfer Notes. Periodic visual waste audits measuring % of waste streams captured in all bin types.
6c: Waste - Food	5% reduction in food waste produced from non-residential areas by 2030 – compared to baseline	2% reduction in food waste collected vs previous year	Food waste measured for all Non-residential buildings across all sites including satellite sites (Podiatry, Development Hub, Innovation Centre, Resource Centre). Data collated using the Suez monthly waste report. Periodic visual waste audits measuring % of waste streams captured in all bin types.
7: Travel – Sustainable Modes	Sustainable travel – increase sustainable modes of travel for staff and commuting students by 1% year on year.	1% increase for sustainable travel.	Comparison of student and staff travel modes against previous surveys.
8: Biodiversity	To conserve, enhance and improve the biodiversity of species and increase their populations where possible across all the University landscapes over the next 5 years, with a view to achieving biodiversity net gain.	Annual targets are to be confirmed once the baseline has been established through surveys and monitoring.	Methods of monitoring will include: •Professional /expert surveys •Staff and student engagement and observations thorough established projects and societies i.e. AWESOME, BioBlitz •Wildlife camera Footage •Student projects associated with course work / dissertations. Data collected will be collated and stored in a central repository to be determined as part of the initial phase of the implementation of the MPB.

6.0. Conclusion

The University of Northampton's Environment & Sustainability Report 2023/2024 reflects the progress being made towards ensuring the Environmental and Operational management of our estate aligns with global sustainability goals.

We aim to implement cutting-edge technologies and practices where possible that not only reduce our carbon footprint but also serve as a model for other institutions and local businesses. In addition, our commitment to education and outreach will expand, providing more opportunities for students and staff to engage in sustainability projects, workshops, and research.

Our data collation, analysis and reporting continues to evolve year on year. As we move forward, we continue to enhance our monitoring and reporting systems to ensure transparency and accountability in our progress. Regular updates will be shared with all stakeholders, allowing us to celebrate our successes, contribute to the UON strategic decision-making process and ensure we continue to foster a culture of continuous improvement.

Ultimately, our vision is to create a resilient and sustainable campus that not only meets current needs but also sets a precedent for future generations. Together, we aim to make a significant impact on our environment and inspire broader change within our communities and beyond.

7.0. Acknowledgments

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