Environmental Sustainability Annual Performance Review 2023-24

December 2024

Report by Julia Durkan, Head of Environmental Sustainability (ES)

1. Executive Summary

This year has seen some significant achievements, though challenges remain. Key milestones include:

- Completion of Phase 1 building decarbonisation works, including the opening of Booth Street East, our first zero-carbon building on campus.
- Signing of our corporate Power Purchase Agreement, with construction underway on a solar farm expected to supply c65% of the University's electricity demand.
- Introduction of food waste collections in staff kitchens, resulting in a 90% increase in food waste recycling.
- Diversion of 80 tonnes of unwanted furniture through internal reuse or donations to charities and schools
- Completion of our second set of Scope 3 emissions calculations, enabling a comparison with our baseline and providing greater insight into our indirect emissions profile.
- Achieving an estimated 80% biodiversity net gain through the redevelopment of the Old Quad into a vibrant green space on campus.
- Hosting Sustainability Action Month, our largest event this year, with over 40 activities and 2,200 interactions aimed at enhancing staff and student understanding of the climate and nature crises.
- Winning the '2030 Climate Action' prize at both the national and international Green Gown Awards.
- Climbing from 68th two years ago to 38th in the People & Planet University League, achieving our highest score to date.

Despite these successes, challenges persist. Carbon emissions fell by only 4% in 2023 compared to 2022, leaving us behind on the reduction pathway required to meet our 2038 zero-carbon target. Achieving this goal now requires a 17% annual reduction to remain within our science-based carbon budget, as set by the Tyndall Centre and aligned with Greater Manchester's climate ambitions.

2. Zero Carbon. Target: Achieve zero carbon emissions in our operations by 2038 and without exceeding our "carbon budget".

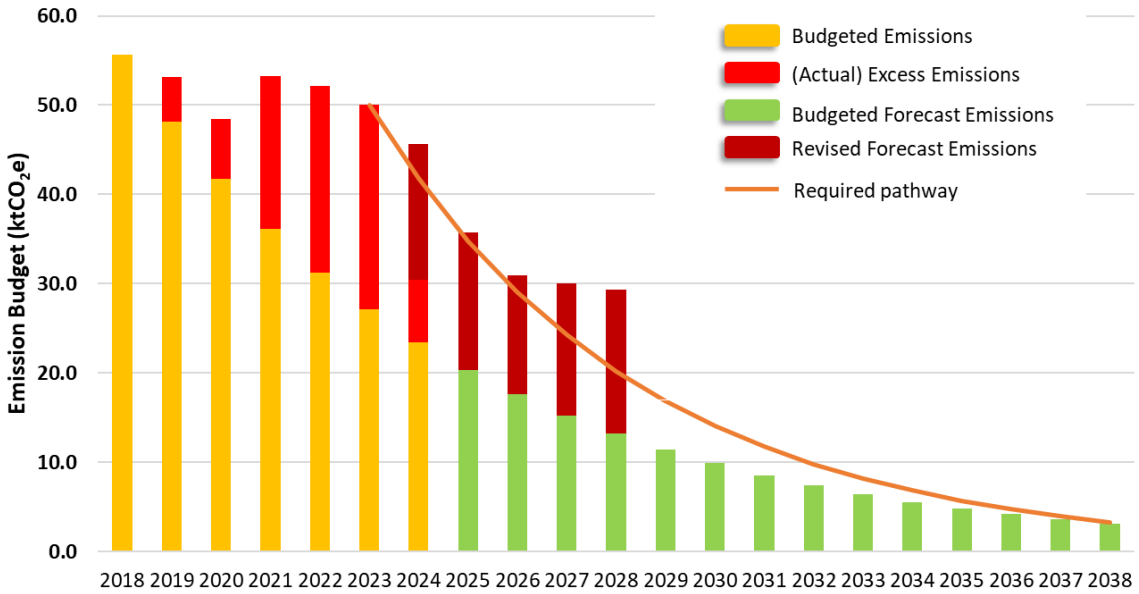

Fig 1: University of Manchester Scope 1&2 carbon emissions against carbon budget, 2018-2024

The University reports direct carbon emissions from its operations, including energy usage in buildings and fleet vehicles, by calendar year. In 2023, energy-related Scope 1 & 2 emissions decreased by 4% compared to 2022 but fell short of the annual reduction goal of 13%.

Emissions have fallen by 10% since 2018, demonstrating progress but not at the pace needed to stay on target. Since 2018, we have emitted 30% more carbon than allocated in our budget, primarily due to the two-year delay in the corporate Power Purchase Agreement (cPPA) and logistical challenges that have slowed progress on building decarbonisation projects.

Against the overall science-based carbon budget of 450,000 tCO2e, the University has used 69% of its allocation, putting it on track to exceed the budget by the end of 2027 without accelerated reductions. This trend is reflected across Manchester, with The Manchester Climate Change Partnership acknowledging there needs to be a step change in pace and scale of climate action for the city to stay within its carbon budget.

The cPPA will provide the most significant impact on our carbon footprint, reducing it by 25% and saving around 12,500 tCO2e every year when it comes into operation in 2025. Around 65% of the University's electricity will be covered from the construction of a new solar farm.

Phase 1 building decarbonisation works completed include Booth Street East and two Dalton Ellis residential blocks, Ewings and Graham. The Flexible Learning Innovation Space at Booth Street East is now solely heated by air-source heat pumps, reducing building emissions by 75%. A short film[1] was produced to demonstrate its impact.

A £2.2m grant was secured for the zero-carbon retrofit of the Zochonis building, which will include extensive fabric upgrades and air source heat pumps. Completion is targeted for Q2 2026.

The current project pipeline and cPPA are expected to bring emissions closer to target by 2026. There is a need to identify the next high impact project(s) to deliver a step change in emissions to keep up momentum. This will likely come in the form of the heat network study currently underway to develop a strategy for tackling the Oxford Road campus heat networks which account for 70% of our natural gas usage.

The zero-carbon budget has been increased to £175m, with an additional £27m allocated, but remains short of the £638m required to meet the 2038 target. Spend in 2023/24 was £4m (including external grant funding). With the current pipeline of projects spend will start to ramp up with c£10m forecast for 2024/25.

3. **Energy. Target: Reduce our consumption by a total of 10% against a 2018 baseline.**

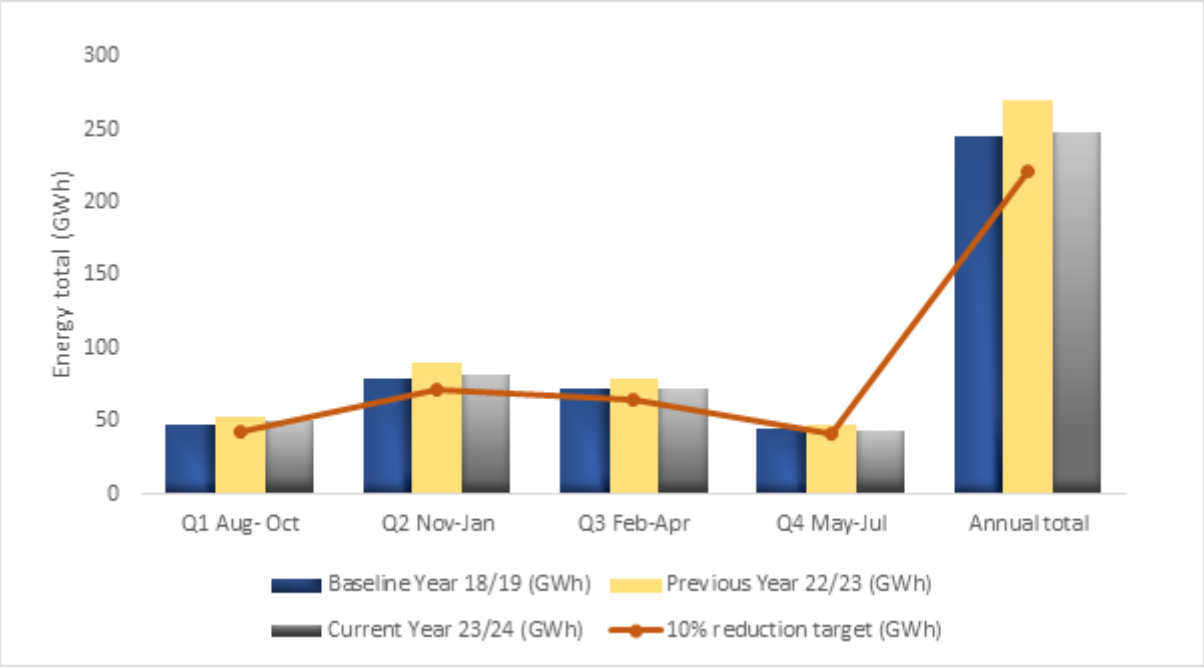

Fig 2: University of Manchester total energy consumption, 2023/24

Our total energy consumption, including electricity, gas and oil usage for 2023/24 was 248 GWh – an 8% reduction compared to 2022/23 (270GWh).

[1] https://vimeo.com/954217921/5eb5148e1d

As the legacy North Campus buildings have been vacated, electricity and natural gas consumption related to North Campus activities has decreased significantly. By the end of Q2 2024, electricity consumption for MECD and North Campus combined had decreased by 10%, and natural gas consumption had decreased by 35%, compared to the same period in 2023.

Achieving a 10% energy reduction from the 2018 baseline remains challenging. This is primarily due to the addition of combined heat and power (CHP) and buildings added to our portfolio post-2018 such as Royce, which have added to our footprint. Moving forward, more strategic initiatives and targeted actions, informed by findings from the heat and power studies, will be essential to effectively reduce overall energy consumption.

4. Travel. Target: Aim to limit emissions from air travel to 50% of our 2018/19 level.

Aviation emissions for 2023/24 have decreased by 34% compared to our 2018/19 baseline. This represents a 12% increase from last year's emissions and moves us further away from our 50% reduction target, underscoring the risk of air travel returning to pre-COVID levels. A review of the Travel Policy's impact is needed to identify additional measures for sustained emission reductions to be achieved. This is a target which needs to be continually achieved each year.

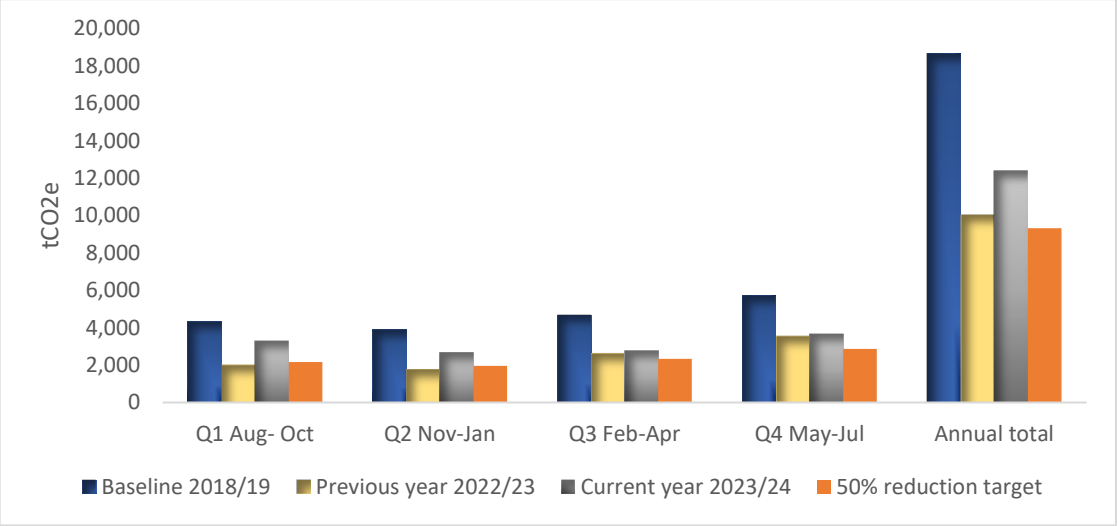

Fig 3: University of Manchester staff aviation emissions, 2023/24

5. Waste. Target: Recycle 45% of the waste produced as a result of campus operations.

In 2023/24, we generated 2,700 tonnes of waste across main campus and residences, a 4% increase compared to the previous year. The majority of this waste (99%) was diverted from landfill, either recycled or used as refuse-derived fuel.

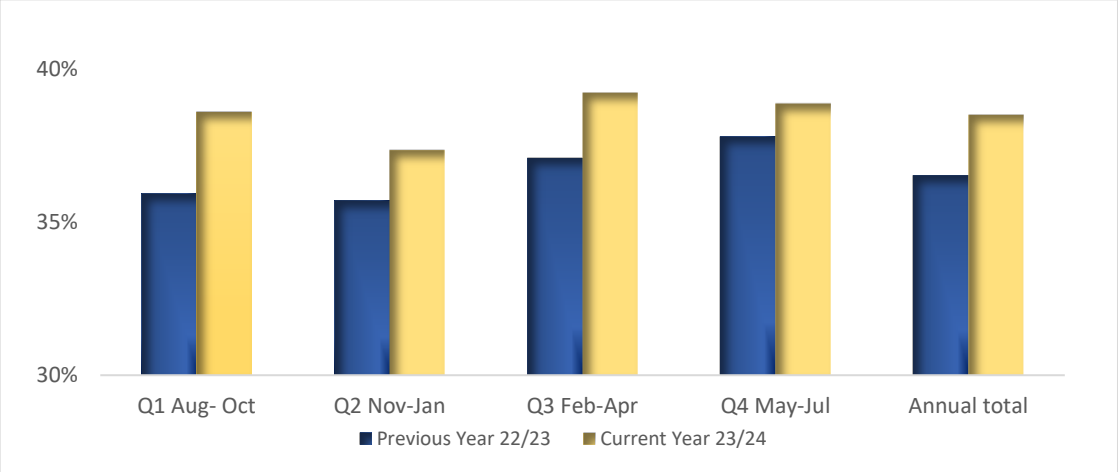

Fig 4: University of Manchester recycling rate, 2023/24

Food waste collections were introduced in all staff kitchens, leading to a 91% increase in food waste recycling. A total of 77 tonnes of food waste was collected in 2023/24, up from 40 tonnes in 2022/23. The internal Furniture4Reuse store also diverted approximately 80 tonnes of unwanted furniture from disposal, which was either reused internally or donated to charities and schools.

Our recycling rate increased to 39% in 2023/24, up by 2% from the previous year, due to several recycling streams increasing. However, most of the waste collected remains mixed general waste. To further improve waste segregation, we must continue engaging with our staff and students to encourage correct bin usage.

6. **Procurement. Target: Develop appropriate Scope 3 emissions targets in relation to the procurement supply chain and measure estimated emissions against these targets.**

Scope 3 emissions account for c90% of our university's total carbon footprint. In 2022/23 our total emissions reached c460,000 tCO2e, an 18% increase from our 2018/19 baseline, mainly driven by an increase in the carbon intensity of emission factors. To reach net-zero emissions by 2050, we need to refine our focus, establish clear priorities, and set interim emissions targets that are ambitious yet achievable.

The largest elements of our Scope 3 footprint fall into four main areas, travel, goods and services, buildings and estates and pensions and investments, which are further divided into 36 subcategories. We have begun a materiality assessment to prioritise these subcategories for action, evaluating scale, level of engagement, and the complexity of driving operational and behavioural change.

Our Procurement Team has developed a PowerBI dashboard to filter emissions by product category, organisational level and supplier to enable an evidence-based approach to guide action. We continue to collaborate with the sector-wide roll out of the "Net Zero Supplier Engagement Tool" which encourages our suppliers to input their emissions data and create their own carbon and nature action plans.

7. **Training. Target: Provide staff with environmental training, with senior staff prioritised.**

Progress on this target has been limited, mainly due to staff resource constraints. For senior level training, learning objectives have been drafted and recommended delivery groups include Board of Governors, Senior Leadership Team and Professional Services Leadership Team.

Some initial work has been done to develop draft content for a 30-40 minute "Environmental Sustainability Essentials" learning module for all staff, but progress has stalled.

8. **Biodiversity. Target: Achieve 20% biodiversity net gain on all major construction and refurbishment projects; increase the quality and quantity of existing green space, achieving a 10% increase in urban green space, from 2018 levels.**

As part of our bicentenary celebrations the Old Quad has been regenerated from a car park to create a new, biodiverse green space for both people and wildlife to enjoy. A biodiversity net gain of c80% has been achieved by planting new trees and plants and introducing bird and bat boxes, log piles and shallow pools to provide habitats and water sources for wildlife. New planting has also been incorporated as part of the Martin Harris Centre expansion.

Our nature action plan has been drafted with stakeholders from across the university which takes the commitments outlined in the ES Strategy and proposes key actions and metrics to measure performance. Landscape Services have constructed bug hotels using recycled wood and brown vegetation from our university grounds. There are now nine wildflower areas on Main Campus and species-rich turf outside Nancy Rothwell. No-Mow May was expanded to more locations than ever before. Eight green roofs continue to be maintained and 40,000 litres of peat-free compost was used. All machinery is now battery-operated avoiding pollution and emissions from fuel use.

9. Laboratories. Target: All labs to achieve a LEAF award to a minimum of Bronze and adopt a 6R "responsible plastics protocol" by August 2025. 25% of labs to achieve minimum of LEAF Silver.

By end of 2023/24, the number of labs with LEAF accreditation was about 15% of our estimated 1,000 labs. On our current trajectory we are likely to achieve c50% of LEAF certified labs by our target date of August 2025. The Faculty of Humanities, with 3 labs, is on track to achieve 100% LEAF certification by the target date. The Faculty of Biology, Medicine and Health, with 320 labs, is likely to achieve 65% certification, while the Faculty of Science and Engineering, with 719 labs, is looking at 45% certification.

A paper outlining the potential financial savings from reducing waste, energy and purchasing associated with labs, together with the additional resources required to achieve our LEAF target, was approved by the Environmental Sustainability Committee and presented to Faculties. The net saving from LEAF implementation in labs is estimated to outweigh the expense. Whilst there are plans to deploy additional resources to accelerate LEAF adoption, we will need immediate and decisive action to ensure we can achieve the target.

10. Endowment Investment. Target: See appendix, page7, for progress against the targets.

The weighted average carbon intensity (WACI) of our investment portfolio (tCO2e/£Revenue) excluding property has fallen by 16% on the previous year. This has been driven by falls in the WACI of the Ruffer Multi-Asset Portfolio, The Mercer Short Duration Bond Fund, Ninety-One Global Equity and The Mercer Passive Sustainable Global Equity Fund. The University has reduced the WACI in the equity portfolio by c59% relative to the University's portfolio baseline 2019 position. The University has therefore already met its 2027 target of a 50% reduction. The fixed income assets have a WACI which is c39% lower than the 2019 baseline position and is therefore on track to achieve the 2027 target of 40%. The property portfolio has 100% REGO backed renewable energy and has reduced its energy usage by 6% compared to the target for 2027 of 10%.

11. Staff and student engagement

Sustainability Action Month, part of the Bicentenary programme, was our biggest engagement activity of the year. Throughout April, we hosted over 40 events aimed at increasing staff and students' understanding of the climate crisis, achieving more than 2,200 interactions. Participation in our student volunteer programme, Sustainability Champions (part of Stellify), doubled, with 40 students actively engaging their peers on sustainability.

We have developed an annual campaign calendar with each month dedicated to a specific sustainability theme. This collaborative effort, involving colleagues across the university, will help to coordinate event ideas, foster cross-promotion of initiatives and create a unified and impactful sustainability presence on campus.

Efforts are underway to find a suitable replacement for our previous engagement software, 50,000 Actions. A range of engagement apps have been reviewed by staff and students, and plans are in place to launch in September 2025. This will serve as a "one stop shop" for all engagement activities, driving greater awareness, participation and action within our community.

In collaboration with our Communications and Marketing Team and an external agency, we have developed a narrative that encapsulates the overarching story of environmental sustainability at the University, capturing our point of view and what we stand for. Next steps include creating a visual identity and supporting guidelines to ensure our marketing and communications campaigns are clear, consistent and distinctive.

Appendix

Summary of progress against headline commitments from the ES Strategy:

Priority	Commitments	Target Date	Progress for 23/24	
Zero Carbon	Achieve zero carbon emissions in our operations (Scopes 1&2) by 2038 and without exceeding our “carbon budget”	Aug 2038, with carbon budget monitored annually	Red	Scope 1 & 2 total emissions for 2023 were 50 kilotonnes CO2e, which exceeded the carbon budget target for that year by 23 kilotonnes (equivalent to 85% excess). From 2018 to 2023, a total 69% of the carbon budget was spent.
Energy	Reduce our energy consumption by a total of 10% against a 2018 baseline, achieved by joint working across the University led by The Directorate of Estates & Facilities and IT Services.	Aug-25	Red	Total energy consumption for 23/24 was 248 GWh, an 8% reduction vs 22/23. Our energy consumption has gone up 6% in 2023 vs the 2018 baseline year.
Travel	Aim to limit annual emissions from air travel to 50% of our 2018/19 level (pre the Covid-19 pandemic) with immediate effect	Aug-24	Red	Aviation emissions decreased by 34% compared to the baseline.
Waste	Recycle 45% of the waste produced as a result of campus operations	Aug-25	Red	We recycled 39% of our waste generated from campus operations.
Procurement	Develop appropriate Scope 3 emissions targets in relation to the procurement supply chain and measure estimated emissions against these targets	Develop target: Dec 2023; measure emissions Aug 2024	Green	We set the scope 3 emissions target of net zero by 2050. Our scope 3 emissions were around 460 kilotonnes CO2e in 2023/24.
Training	Provide staff with environmental training, with senior staff prioritised.	SLT trained by Aug 24, all staff trained by Aug 26	Red	Content still in development.
Biodiversity	Achieve 20% biodiversity net gain on all major construction and refurbishment projects.	Aug-25	Amber	The Old Quad redevelopment achieved c80% BNG. Target included in major construction projects.
	Increase the quality and quantity of existing green space, achieving a 10% increase in urban green space, from 2018 levels.	Aug-28	Amber	Assessment of quality repeated every 4 years. Assessment of quantity in progress.

Laboratories	Require all laboratories to achieve a LEAF award to a minimum of Bronze and adopt a 6R "responsible plastic protocol" by August 2025. 25% of labs to achieve minimum of LEAF silver.	Aug-254	Red	About 15% of our labs achieved Bronze of above in LEAF certification.
Investment	Reach net zero on investment portfolio	Aug-38	Green	The absolute emissions of our investment portfolio was 6,948 tCO2e (up from 5,144 tCO2e) on 31 July 2024 but the weighted average carbon intensity (WACI) of our investment portfolio (tCO2e/£Revenue) excluding property has fallen by 16% on the previous year.
	Reach 100% renewable energy use within the endowment investment property portfolio	Aug-27	Green	The property portfolio has 100% REGO backed renewable energy.
	Reduce weighted average carbon intensity of public equity holdings by at least 50% against 2019 baseline.	Aug-27	Green	The University has reduced the WACI in the equity portfolio by c59% relative to the University's portfolio baseline 2019 position. The University has therefore already met its 2027 target of a 50% reduction.
	Reduce carbon intensity within the investment grade credit allocation by 40%	Aug-27	Green	The fixed income assets has a WACI which is c39% lower than the baseline 2019 position and is therefore on track to achieve the 2027 target of 40%.
	Reduce energy consumption within the investment property portfolio by 10%	Aug-27	Amber	6% reduction compared to the target for 2027 of 10%.