

Annual Environmental Management and Sustainability Report 2023/2024

1. Executive summary

The Annual Report provides an overview of progress on key strategic and operational objectives related to Environmental Management and Sustainability issues.

Specifically the report covers work undertaken for various Plans and strategy documents, the EcoCampus Scheme, communication and engagement, sustainable travel, biodiversity and summarises the university's energy, water and waste performance, and carbon footprint.

Progress on priorities identified in the 2023/2024 Environmental Management and Sustainability Action Plan is detailed as Appendix 1. Priorities for 2024/2025 are in Appendix 2.

2. Link to the Strategy 2023/2030

The items within this Annual Report have a direct link to the following enablers for delivery of the university's Strategy 2023-2030:

- A positive culture which builds community, embraces diversity and supports wellbeing
- A responsive organisation, marked by agility, efficiency and innovation
- A digital and physical infrastructure; shaped by our academic goals.

3. Governance

3.1 Environmental Management and Sustainability Policy Statement

The university's top level [Environmental Management, Energy Management and Sustainability Policy Statement](#) was approved by the Executive Leadership Team (ELT) in September 2023. It undergoes formal managerial review annually and is approved on a two-yearly cycle.

3.2 Environmental Management and Sustainability Strategy 2021/2024

The university's [Environmental Management and Sustainability Strategy](#) was approved by the Executive Leadership Team and the Board of Governors in 2021 and is available from the LJMU Policy Centre and the [Climate Action webpage hub](#). The Strategy is under review in 2024.

The Strategy shows how the university will achieve better environmental management and sustainable performance through compliance, continual improvement and monitoring. The Safety, Health and Environment Department, co-ordinates for the

university, a suite of environmental arrangements and policy documents which support the implementation of the strategy.

3.3 Environmental Management and Sustainability Panel

The Environmental Management and Sustainability Panel met three times during 2023/2024, on 11th October 2023, 20th February 2024 and 20th May 2024. Formerly chaired by the Pro-Vice-Chancellor, Faculty of Science (it is now the Associate Director, Safety, Health and Environment), it leads on environmental management and sustainability arrangements. The Panel has driven forward the next steps arising from the Environmental Management and Sustainability Strategy, how to engage and make the issues more visible to our students and staff, and how to collaborate with the Students' Union.

The Panel now reports to the University Health and Safety Committee.

There has been good progress on achieving the success criteria that were identified as priorities in the 2023/2024 Environmental Management and Sustainability Action Plan. Further detail is contained in [Appendix 1](#).

For the forthcoming year, the Panel will continue to co-ordinate and monitor the commitments in the Environmental Management and Sustainability Strategy and will also align its activities with the university's [Climate Action Plan](#). In addition, the provisional environmental management and sustainability priorities for the year 2024/2025 which are led by the Safety, Health and Environment Department, are set out in [Appendix 2](#).

3.4 Climate Action Plan

The Climate Action Plan is a significant undertaking, of strategic importance to the university covering all aspects of LJMU business and life. It was approved by ELT and the Board of Governors in July 2022, with a commitment to achieve net zero carbon emissions by 2035 through various actions cutting across five themes - Leadership and Governance; Teaching; Research; Community Engagement; and Campus Management.

Progress on the university's Climate Action Plan is being co-ordinated by the Climate Action Plan Steering Group, now chaired by the Pro-Vice-Chancellor, Student Experience, with sub-groups working on each of the five themes.



A cross-department Campus Management Group has been established to help facilitate and coordinate relevant actions in the Climate Action Plan. Estate Development and Campus Services have established an Environmental Sustainability and Energy Team (ESET) with two new staff to focus on developing Biodiversity, Active and Sustainable Travel, Communications and Engagement, and broader environmental plans and initiatives.

The Campus Management Group also leads on the Carbon Management Plan 2024-2029 (CMP) which sets out how the university can approach and target its decarbonisation activity over the next five years to deliver steady progress towards its goal. It prioritises the installation of air source heat pumps alongside a broader programme of photovoltaic panels, L.E.D. lighting and building fabric upgrades. This will be supported by a programme of submetering, monitoring, building optimisation and the implementation of soft measures such as the establishment of an ISO50001 Energy Management System, accessing renewable energy Power Purchase Agreements, embedding stronger policies and procedures that will reduce carbon emissions and ensuring a continuous programme of communication and engagement activity to increase institutional visibility and understanding.



The Carbon Management Plan also addresses Scope 3 emissions, which have been quantified using the Standardised Carbon Emissions Framework that is being adopted across the sector. These emissions outweigh our Scope 1 and 2 emissions and constitute over 90% of our total carbon footprint. For the first time this plan introduces targets for different Scope 3 subcategories including procurement, travel, water, and waste. Table 1 below shows the plan baseline and targets.

Table 1 Carbon Emission metrics and targets

No.	KPI Metric	Baseline 2021/22 (tonnes - te)	Target Reduction	Year
1	Scope 1 & 2 CO ₂	6,071 te	44%	2028/29
2	Operational Energy Use Intensity	207 te	35%	2028/29
3	Scope 3 CO ₂	55,344 te	sub-group targets below	
3a	Scope 3 Waste	14 te	5%	2028/29
3b	Scope 3 Water	19 te	5%	2028/29
3c	Scope 3 Procurement	34,464 te	5%	2028/29
3d	Scope 3 Staff and student business trips e.g., flights to conferences and field trips	2,284 te	5%	2028/29
3e	Scope 3 Staff and students commuting to university	6,044 te	5%	2028/29

- Scope 1 - direct GHG emissions from operations due to an owned or controlled site (e.g. gas boilers) and vehicle fuel consumption.
- Scope 2 - indirect GHG emissions from the generation of purchased electricity and steam, and are produced outside a company's direct control.
- Scope 3 - Indirect sources of GHG emissions that are within a company's value chain, such as employee commuting, waste generated by the company's operation, production and transportation of raw materials.

A top priority is to identify sustainable procurement options to reduce Scope 3 emissions across procurement categories.

4. Environmental Management System (EcoCampus) and compliance

The university follows the EcoCampus pathway for development of an Environmental Management and Energy Management System (EEMS) for Estate Development and Campus Services, which provides a structured framework for achieving and demonstrating environmental responsibility and compliance. EcoCampus moves through four phases – Bronze, Silver, Gold and Platinum – for delivering environmental management accreditation. The university obtained Silver status in December 2023 and aims to be in a position to be awarded Gold in January 2025, which is ahead of the planned date set out in the Climate Action Plan. The Gold status which concentrates on implementation and control of arrangements.



The EEMS is being developed by the Environmental and Energy Management System Team comprising of the Environmental Sustainability and Energy Team (Estate Development and Campus Services) and a SHE Adviser (Safety, Health and Environment Department). The EEMS Team have been working on implementing procedures covering:

- Waste Management
- Hazardous Waste Management
- Discharges to Water
- Emissions to Air
- Energy Management
- Construction and Refurbishment
- Grounds Maintenance
- Contractor Control
- Emergency Preparedness Response
- Emergency Spill Response.

Waste was identified as an area requiring more attention, and an external contractor provided support with a comprehensive waste audit including both the site operations and the waste contractor. The audit was conducted with a group of relevant staff to both inform the process and provide training to enable them to continue waste monitoring in the future, as well as a group of students from Geography and Environment courses to provide them with valuable work skills experience.



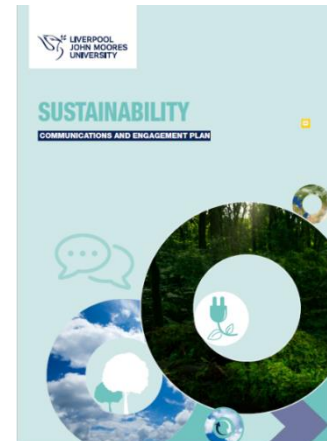
The site audit identified a number of opportunities to adjust operations and procedures to improve waste segregation, as well as identifying some key waste items in need of particular attention. These range from simple actions using existing resources, through to more ambitious and transformative approaches that might require trials or feasibility studies before implementation. A significant future workstream will be targeted communications and engagement with our students and staff to improve waste performance.

5. Communications and Engagement

At the university there is a high level of interest in environmental management, sustainability and climate change issues. The university supports this by regularly publishing interesting and wide-ranging articles on such issues – see [Appendix 3](#) – covering both what staff and students are doing internal to the university and working with local, regional and national partners.

With the recruitment of a new Environmental Sustainability Coordinator (Estate Development) to lead on engagement activities, an activities programme has been developed that will be rolled out in 2024/2025 – actions such as litter picking and hedgehog house installations, as well as educational activities during events and conferences, and around campus.

A working group has been set up for Environmental Sustainability Communications and Engagement and a plan is being developed for how focussed engagement will be carried out over the next five years.



6. Active and Sustainable Travel Plan

Our [Active and Sustainable Travel Plan](#) aims for a focus on providing low carbon and carbon neutral travel options. It reflects our key role in the Liverpool City Region of advocating for and supporting the delivery of a healthier and more sustainable travel infrastructure.

Under the Plan the university is upgrading our remaining internal fleet fuelled vehicles to electric and installing EV charging points.

A LJMU Travel Survey has been undertaken, which will inform an updated revised Active and Sustainable Travel Plan.

There was a good response to the survey from staff (16%) which will enable us to calculate our carbon emissions and inform improvements for active and sustainable travel. Student response rate was poor (<1%), likely as a result of survey fatigue, therefore the Environmental Sustainability Project Manager (Estate Development) is liaising with other institutions to look at alternative data collection options.



Some of the main findings of the survey include:

- 42% of students walk to university, with 20% taking public transport
- 48% of staff take public transport as part of their journey to LJMU
- 32% of staff make single-person car journeys to the university
- 12% of staff walk to work as their only form of transport, generally walking between one and four miles from home to work
- 6% of staff cycle as part of their journey.

As well as asking about current travel methods, the survey sought to understand barriers to taking public transport and active travel methods such as walking or cycling. It was found that a significant increase in journey time, timetabling not being compatible with peoples' schedule, and cost were the greatest barriers for both staff and students to taking public transport.

For active travel, both staff and students stated distance and safety as barriers, with staff also referencing shower and changing facilities and students citing the cost of equipment.

7. Biodiversity

Although LJMU may be thought of as a city university, it has many green spaces and areas that can enhance biodiversity. As part of previous biodiversity work, 6 wildlife gardens were created at Byrom Street delivery area with mixed native hedging and a once-yearly mowing regime so increasing plant diversity and attracting a variety of vertebrate and invertebrate species.

Biodiversity value can be measured in many ways. It can be done through Natural England Biodiversity units for habitats – to determine the presence and volume of units, the habitat is assessed on factors such as type, size, quality, and location. Or biodiversity can be measured via species diversity and abundance surveys or through the use of Natural Capital principles.

The Environmental Sustainability Project Manager has conducted a habitat baselining exercise, assessing and mapping the biodiversity units that are currently across the estate, to evaluate its current biodiversity value. The findings are informing a future Biodiversity Plan for LJMU, which will deliver on the university's commitment to increase biodiversity across the estate. This will be monitored annually, involving LJMU students, with baselining of specific indicator species beginning in Spring 2025.

The university participated in No Mow May with three trial areas across the estate, with a simple botanical survey being conducted by the Environmental Sustainability Project Manager for each site at the end of the month. The grassland species count increased at every site, and more than doubled at Copperas Hill, where a variety of invertebrates and bird species were making use of the grassland. This exercise highlighted the potential lawns have, to support wildlife and increase biodiversity units, with simple changes to management practices.

The university has also installed 'green walls' at our Byrom Street delivery area. When complete, the green walls will cover approximately 108m² of new green infrastructure so increasing the estate's biodiversity value. A number of species chosen for the walls are important pollinators or produce nectar, fruit or berries. Other species selected help to capture ultrafine particulate matter and absorb gases such as nitrogen dioxide from vehicle emissions. Once established, additional benefits of the green walls will include localised urban cooling, building insulation, and health and wellbeing benefits.

Staff from Library Services and the Faculty of Health helped to build two large, raised flower beds to create a new seating area outside the Tithebarn café. The flower beds have been stocked with a wide variety of flowers and shrubs, many of which are

valuable for pollinators. There will be further work this coming year to top up the beds with pollinator friendly or native bulbs, and to create a focus as a growing space for staff and students.

8. LEAF Scheme - Sustainability in laboratories

The Laboratory Efficiency Assessment Framework (LEAF) is a certification scheme designed to enable staff and students to understand and improve the sustainability and efficiency of their laboratory areas.

The university purchased the LEAF software from the University College London (UCL) and science staff have been working towards implementing a process to gain the bronze LEAF award across our laboratories. This has involved reviewing waste management systems and the processes used within the practical sessions throughout teaching. During the year, the assessment work focussed on logging the use of chemicals and equipment and reducing the amount stored if no longer needed. Staff have also created a more thorough induction process.

CATEGORY	Bronze	Silver	Gold
Waste	Provide recycling bins in the lab	Single-use plastic waste has been reduced (guidance provided)	Recycling rates have been increased, or overall waste produced has been decreased
People	Samples owned by departing staff are cleared or tracked	The lab has engaged other labs on LEAF and sustainability	One action to reduce travel has been implemented
Sample & Chemical Management	Labels are legible, and there's a common labeling system in place	Procedures are in place in case cold storage equipment breaks down	At least 80% of all samples and/or chemicals are clearly catalogued
Equipment	Equipment is turned off when not in use	There is a system in place for communal equipment booking	Excess equipment is repaired, sold, and/or donated
Ventilation	There is a clear reporting system for building issues	Fume cupboard sashes are kept closed when not in use	Solvent vapours are condensed and disposed and not released into the atmosphere

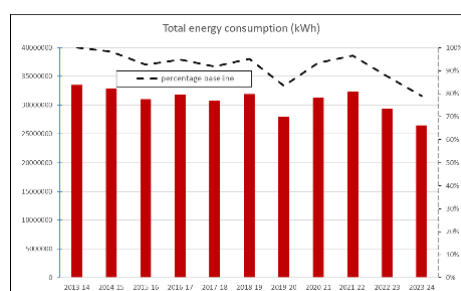
In the summer, the Climate Action Plan budget was used to employ a placement student who focussed on how to reduce waste in laboratory practical classes. Their work focussed on practical sessions which produce high levels of waste and those with high student numbers. One initiative that was explored involved washing UV cuvettes so that the students can reuse them. The aim was to produce data evidencing that the quality of the sessions and the experimental results produced would not be affected. This initiative reduced the use of UV cuvettes from 13 per student to 2.

Going forward with this project, the team will investigate further ways that consumables, chemical waste, water usage and energy usage can be reduced in each practical session. This information will be collated to measure the reduction in resources across the faculty. The next steps will be to roll out the LEAF software throughout the science faculty.

9. Resource use, waste and carbon management performance

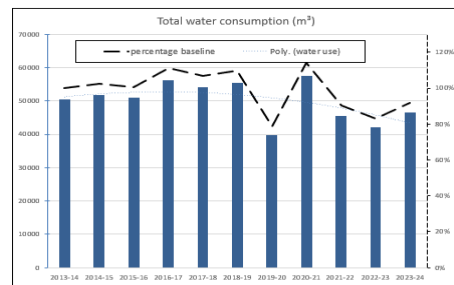
9.1 Resource use and recycling

This year the university has installed new energy management software to help support energy and carbon monitoring and management. Along with a programme of installation of air source heat pumps, photovoltaic panels, L.E.D. lighting and building infrastructure upgrades, the university has reduced the energy consumption of our operational estate by 20% since 2021/2022.

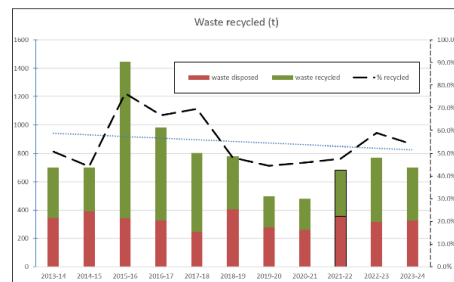


To direct our future work, a comprehensive Decarbonisation Plan was completed. This has identified the technologies and pathway to achieving Net Zero Carbon, including a campus-wide photovoltaic feasibility study to enable the maximising the clean generation of electricity.

Both water usage and normalised water use per person are an improving trend.

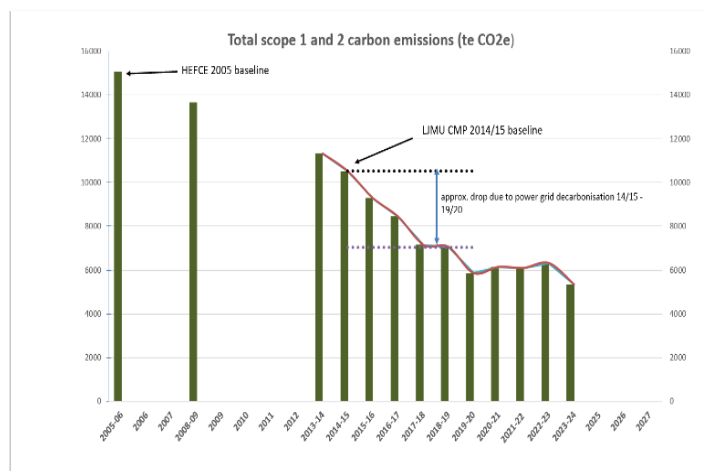


Across the university there is work on improving waste management arrangements to increase the recycling rate and also minimise the amount of waste generated in the first place. Working is being undertaken to reduce single use plastic waste, divert food waste to anaerobic digestion and the university will continue to not send any waste directly to landfill.



9.2 Carbon Emissions

The university records and trends CO₂ emissions from energy usage (Scope 1 and 2 emissions) against baselines and where the university may be in the future. Progress in reducing emissions has been made over the last few years, but now significant decarbonisation of the university's infrastructure is being planned to work towards the net zero carbon aim of 2035.

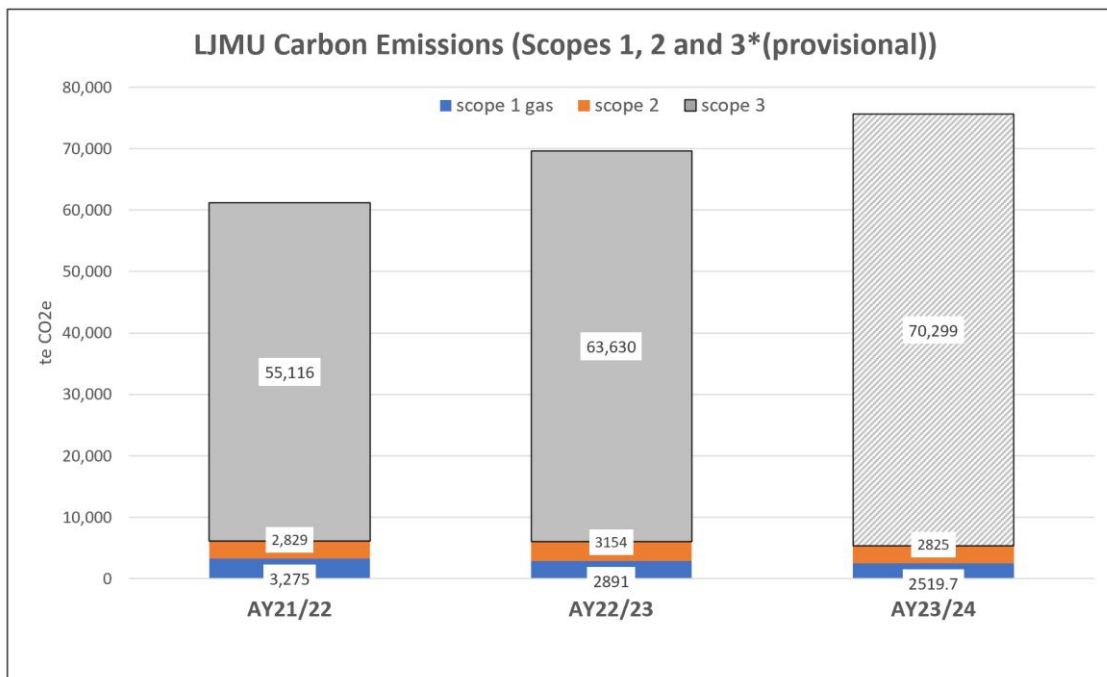
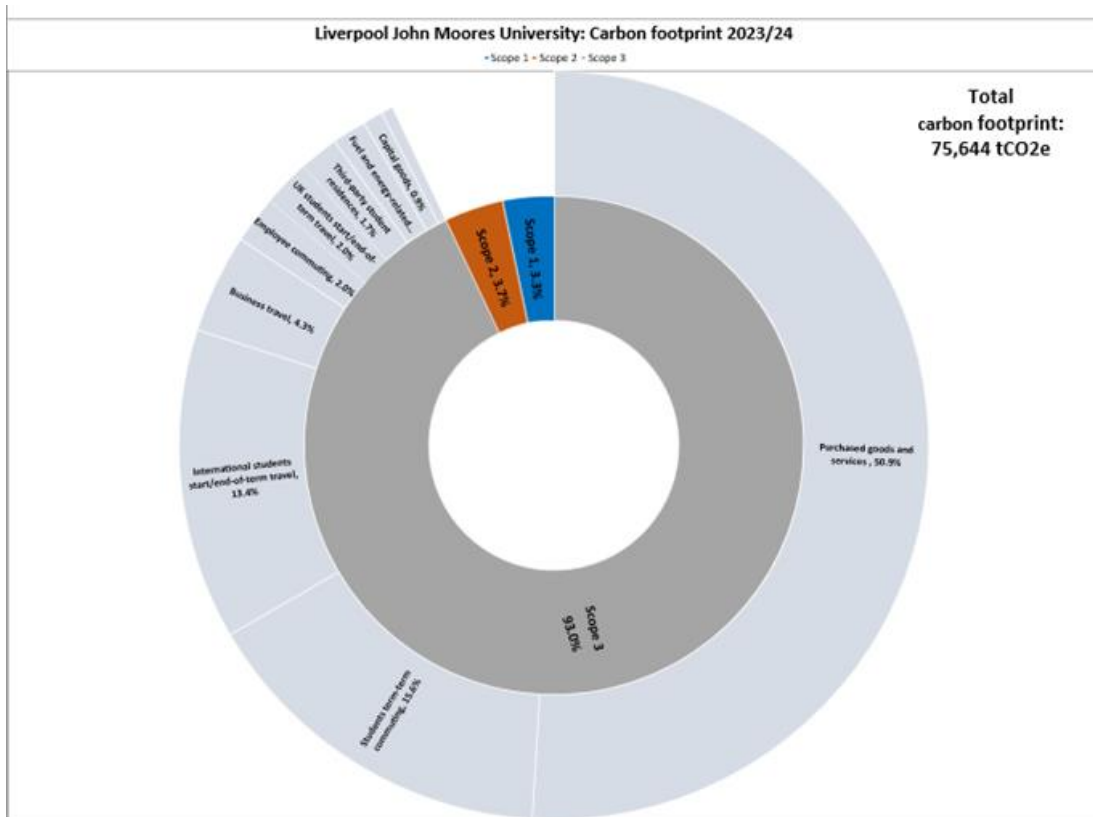


The university has also put in place systems and recording arrangements to allow the calculation of the total carbon footprint, which for 2023/2024 is a (provisional) total of nearly 76,000 tonnes of CO₂, breaking down into:

- Scope 1 3.3%
- Scope 2 3.7%
- Scope 3 93.0%

The Scope 3 emissions are from embedded carbon in upstream and downstream components such as purchased goods and services, international student travel and staff and student term time commuting. The increase in Scope 3 emissions for

2023/2024 compared to previous years is mainly due to the revised methodology for calculating student commuting during term time which is based on the latest travel survey and updated assumptions. As the calculation of Scope 3 emissions improves with better quality data, further re-alignments may occur.



Appendix 1 – Progress on Priorities 2023/2024

Environmental Management and Sustainability Action Plan 2023/2024

Status key:

	KPI not met
	KPI currently not on track to complete by the target date
	KPI completed or on track to complete by the target date
	Work yet to begin

No.	Principle	KPI	Required actions	Target date
1	ESP 5 (resources)	<p>We will provide appropriate resources:</p> <p>We will have a formal handover of work plans to the new Sustainability Project Manager and the Environmental Sustainability Co-ordinator</p>	<ol style="list-style-type: none"> 1. Recruit the Sustainability Project Manager ~ January 2024 2. Hold meeting to formal handover of work plans 3. Recruit the Environmental Sustainability Co-ordinator ~ March 2024 4. Hold meeting to formal handover of work plans 	February and April 2024
2	ESP 11 (audit)	<p>To fulfil our environmental management compliance duties:</p> <p>We will undertake a Duty of Care audit of our waste contractor</p>	<ol style="list-style-type: none"> 1. Plan audit as part of the Safety, Health and Environment and Campus Services joined up waste audit schedule arrangements 2. Undertake audit 3. Report findings to Environmental Management and Sustainability Panel 	Last Panel meeting ~ June / July 2024

3	ESP 8 (EMS)	<p>We will operate an Environmental Management System (EMS):</p> <ul style="list-style-type: none"> EcoCampus Silver Award obtained 	<ol style="list-style-type: none"> Consult with Environmental Management and Sustainability Panel Hold review meetings with EcoCampus Consult with Campus Services and Estates Development Submission to EcoCampus 	January 2024
4	ESP 10 (standards)	<p>To enhance our Environmental, Social and Governance (ESG) arrangements:</p> <p>We will implement an improvement programme to increase our score for the People and Planet 2023 League Table.</p>	<ol style="list-style-type: none"> Review 2023 scores Identify improvement actions against scoring criteria Identify and engage with action owners Ensure the Sustainable Food Policy and Carbon Management Plan are published on the website Estimate potential 2024 league table score 	August 2024

Environmental Management and Sustainability Action Plan 2024/2025

No.	KPI	Required actions	Target date	Inter-dependencies
1	Compliance dashboard	<ul style="list-style-type: none"> • Implement a draft dashboard • Engage with stakeholders to understand effectiveness • Implement revised dashboard 	December 2024	SHE Department Environmental and Energy Management System (EEMS) Team
2	Implement improved waste management arrangements	<ul style="list-style-type: none"> • Pilot arrangements in Student Life Building • Analyse effectiveness • Implement revised waste arrangements 	June / July 2025	Director of Campus Services SHE Department EEMS Team
3	Obtain EcoCampus Gold Award (3 rd stage of the Environmental Management System)	<ul style="list-style-type: none"> • Consult with Campus Services and Estates Development • Consult with Environmental Management and Sustainability Panel • Hold review meetings with EcoCampus • Submission to EcoCampus 	January 2025	SHE Department EEMS Team
4	To enhance Environmental, Social and Governance (ESG) arrangements: Implement an improvement programme to increase the score for the People and Planet 2025 League Table.	<ul style="list-style-type: none"> • Review 2024 scores • Identify improvement actions against scoring criteria • Identify and engage with action owners • Ensure the Communication and Engagement Plan is published on the website • Estimate potential 2025 league table score 	August 2025	SHE Department EEMS Team

Appendix 3 – News Articles

Examples of LJMU published news articles on Environmental Management and Sustainability issues

25 September 2023	Get free IT kit through Laptop and Recycled IT schemes
7 November 2023	Mersey Maritime Awards 2023: LJMU backs greater sustainability
8 November 2023	£20m project to launch first large electric ships
9 November 2023	Great Apes 'outnumbered 200 to 1' by 2050 in own feeding grounds
14 December 2023	'Greener' LJMU rewarded with 2:1 by People & Planet
14 December 2023	Kind staff and students support Whitechapel Centre Christmas appeal
8 January 2024	LJMU launches Sustainable Development Goals hub
9 January 2024	Natural Capital Hub - What is it?
22 January 2024	LJMU earns environmental recognition
15 February 2024	Low Carbon Eco Innovatory wins new funding until March 2025
20 February 2024	'The greatest chemical threat facing humankind'
21 February 2024	Next-gen smart road surfaces prove potential
4 March 2024	Take part in the LJMU Travel Survey
25 March 2024	AI to help national hedgehog survey
22 April 2024	'Let's reverse the damage we've done to the planet'
30 April 2024	No Mow May at LJMU
8 May 2024	Research: Rampant growth in vegetable oil production threatens wildlife
13 May 2024	Fashion students' 'sustainable Eurovision collection' in John Lewis
20 May 2024	Wildlife conservation graduate inspires next generation of students
4 June 2024	Biodiversity thriving at LJMU
12 June 2024	LJMU ranks in top 60 UK universities for Sustainable Development Goals
26 June 2024	Travel survey findings
18 July 2024	LJMU powers Chester Zoo to Africa conservation award
24 July 2024	Blistering Barnacles! Boat detritus boost for marine conservation
1 August 2024	Energy from plants - how hybrids can boost biomass production
20 August 2024	Time to be inventive on woodland climate threat - researcher