



## Executive Summary

The University Strategy launched in 2022 included the strategic theme of addressing climate change and net zero. The University takes its responsibility for sustainability seriously and has committed to using its position as a world-leading university to address the global challenges of climate change, greenhouse gas emissions, wellbeing, and social justice.

Whilst the Covid-19 crisis caused widespread disruption to the University its response to the pandemic was seen as sector-leading and has been shortlisted for a Times Higher Education award. The pandemic led to a reduction in carbon emissions which has impacted the data, so any comparisons are made with 2018/19 pre-pandemic emissions.

The current energy crisis has highlighted the vulnerability of a society reliant on fossil fuels and the University has been heavily impacted by the increased cost of gas and electricity. The energy expenditure for 2021/2022 was £11.7 million, with 2022/23 estimated to increase to

£16million. This emphasises the University's need to move away from fossil fuels, reduce energy usage throughout the establishment and consider self-generated energy options such as solar panels.

This report provides an update on our performance over the last 2 years and headline results include:

- 34% reduction in absolute scope 1 and 2 carbon emissions since 2010/11 in 2020/21
- 43% reduction in absolute scope 1 and 2 carbon emissions since 2010/11 in 2021/22
- 94.52% of waste was diverted from landfill compared to 93.59% the previous year.
- Launch of [Sustainability Essentials](#) eLearning module for staff
- Submission of first United Nations Sustainable Development Goal report
- Launch of a new carbon reduction roadmap "[Our Journey to Net Zero](#)"

## 1. Governance and Strategy

The Sustainability & Social Responsibility Sub Committee (SSRSC) was disbanded and replaced with the Sustainability Sub Committee (SSC), chaired by the Director of Estates and Facilities Management the SSC.

The Sustainability [action plan](#) provides a set of strategic principles, has been reviewed to ensure that it aligns with the University Strategy and a new plan will be developed once the Sustainability Strategy has been approved. The Climate and Environment Task Group (CETG) was disbanded and replaced with the LUNZ presented a set of key actions to Senate in June 2020 which will be incorporated in the new strategy.

LUNZ is currently investigating methods for decarbonising our campus with the aim of becoming Net Zero for scope 1 and 2 emissions by 2035. It is also creating task groups to establish

baselines and reduce scope 3 emissions in the below areas:

- Student travel
- Staff travel
- Procurement
- Staff commuting
- Construction
- Information Services and Technology

### 1.2 United Nations Sustainable Development Goals (SDGs) Accord and Report

LU signed the SDG Accord in the Autumn of 2019 supporting the critical role that education has in delivering the [SDGs](#). Progress is submitted annually to the UN High Level Political Forum.

The latest report highlights that the University has struggled to address the SDGs over the past year in all areas. This reflects vacancies within the sustainability team, which have now been filled. To improve on this, we need to establish a way of integrating the SDGs across the University, we are currently establishing reporting mechanisms to showcase how our teaching and research contribute towards the SDGs.

The three SDGs where the University had most impact in 2021/22 were:



Our focus over the next 12 months will be:



## 2. Sustainability Action Plan

### 2.1 Teaching



Work continues to promote the campus as a “living laboratory”.

- 2.1.1 Estates and Facilities Management colleagues continue to work with the School of Architecture Building and Civil Engineering aligning with the objectives in the Sustainability Action Plan. Students have been given Sports Park Pavilion 4 as a case study as well as opportunities to select parts of the campus to improve. The projects are provided by E&FM colleagues and relate to live issues/challenges and opportunities.
- 2.1.2 The Institute for Sport Business in London launched the MSc Sustainable Sport Business course. The PG course allows future leaders in sport to develop a critical understanding on how to manage sustainability alongside the economic, social, environmental and policy issues in sport. Loughborough is currently the only UK University to offer a Sustainable Sport Degree.

### 2.2 Research & Enterprise Projects



- 2.2.1 The Centre for Postdoctoral Development in Infrastructure, Cities and Energy (C-DICE) began in 2021 and is a four-year programme funded by the Research England Development fund. The programme partners with industries and other UK Universities to use infrastructure and energy to create opportunities for post-doc researchers in tackling net-zero, infrastructure, cities and energy.
- 2.2.2 The Centre for Sustainable Transitions: Energy, Environment and Resilience (STEER) was launched in 2021 and brings together the Modern Energy Cooking Services (MECS) and Climate Compatible Growth (CCG) to focus on ensuring access to affordable, reliable, sustainable services that make business economic, social and environmental sense. This will give vulnerable populations in the Global South a voice helping them to shape and benefit from the transition to sustainable energy.
- 2.2.3 The Decarbonisation of Low Temperature Process Heat Industry (DELTA PHI) is a

3 year programme that began in September 2020 with funding from EPSRC. It aims to reduce greenhouse gas emissions associated with manufacturing in the UK through more efficient use of heat in industrial processes.

2.2.4 The Hydrogen Development and knowledge Exchange (HyDEX) is a three-year programme associated with the Midlands-based Energy Research Accelerator (ERA) which partners eight universities to support and foster the creation of a new hydrogen industrial economy in the Midlands. The partners will work with businesses to accelerate the development of new hydrogen products, transition from declining industrial sectors, train and re-skill and demonstrate the viability of new products supporting the creation of a market for low-carbon hydrogen solutions.

2.2.5 Loughborough University is leading on the Interdisciplinary Centre for Circular Chemical Economy (ICCCCE) to explore how better design and manufacturing of products and structures can help the UK's construction industry to do more with less reducing waste, pollution and costs. It aims to reduce reliance on fossil resources by recovering and reusing the raw materials for organic chemical production. The centre is developing new transformative technologies and working with businesses to reduce their carbon footprint whilst improving all aspects of the manufacturing process. The centre is funded by the UKRI Strategic Priorities Fund.



### 2.3 Loughborough University Science and Enterprise Park

2.3.1 LUSEP continues to prosper with a growing cluster of businesses with interests in energy and sustainability. In 2021 a £9M development project was launched to extend SportPark by creating a 2000 sq m four-storey fourth pavilion. The project is due for completion at the end of 2022 and is built to Passivhaus Classic Accreditation which will significantly reduce CO2 emissions and operating costs. The project was part-funded through the Leicester and Leicestershire Enterprise Partnership (LLEP) as part of the Get Building Fund.

### 3.0 Environmental Management and Compliance

Our environmental performance is managed through the ISO 14001 2015 accreditation, which is an externally verified environmental management system. The 2022 external surveillance audit report confirmed the general management of the system provides the required level of control with best practice noted for leadership and environmental management.

This is reflected in the levels of compliance with requirements and operational control evident at the organisation which are appropriate to the risks and opportunities identified. There is good availability of documented information to demonstrate that the system is well implemented and well understood throughout the organisation. This audit involved a review of system administration activities, a review and sample of site activities at Loughborough, as well as review of job-related records. Evidence was clearly available to demonstrate that the key policy commitments are being adhered to.

Continuation of certification was recommended with one opportunity for improvement		
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The next audit is a full certification audit scheduled to take place between 7<sup>th</sup> and 14<sup>th</sup> August 2023.

### 4.0 Waste and Recycling



Work continues with Procurement to attempt to address waste at source. We are also continuing our roll out of the segregation of food waste into academic areas.

	2009/10	2020/21	2021/22
Total Waste	1,799 tonnes	1,376 tonnes	1,955 tonnes
Total Recycled	28.53%	71.44%	75.60%
Waste to Energy	0%	21.15%	18.93%
Landfill	71%	6.14%	5.47%

Donations to British Heart Foundation continued in this period but unfortunately no data available.

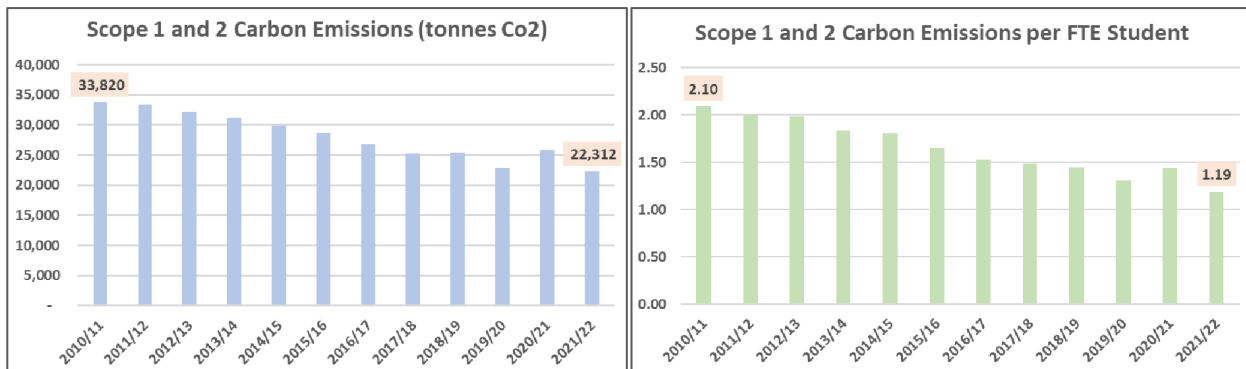
## 5.0 Carbon Management



The absolute scope 1 and 2 emissions for the 2021/22 academic year were reduced by 34% compared to the 2010 baseline year. The scope 1 and 2 carbon emissions relative to student numbers for the 2021/22 academic year were reduced by 43% compared to the baseline year.

Scope 1 & 2 Emissions (tCO2)											
Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Scope 1 Emissions	19,603	21,351	19,654	18,609	17,547	17,827	16,828	18,280	16,917	21,179	16,721
Scope 2 Emissions	13,891	11,517	11,517	11,382	11,082	8,976	8,501	7,104	6,065	4,735	5,590
<b>Total Scope 1&amp;2 Emissions</b>	<b>33,494</b>	<b>32,194</b>	<b>31,171</b>	<b>29,992</b>	<b>28,628</b>	<b>28,628</b>	<b>25,330</b>	<b>25,384</b>	<b>22,982</b>	<b>25,914</b>	<b>22,312</b>
Student Numbers	16,703	16,237	17,008	16,557	17,314	17,505	17,101	17,519	17,524	18,012	18,759
<b>Scope 1&amp;2 Emissions per Student</b>	<b>2.01</b>	<b>1.98</b>	<b>1.83</b>	<b>1.81</b>	<b>1.65</b>	<b>1.53</b>	<b>1.48</b>	<b>1.48</b>	<b>1.31</b>	<b>1.44</b>	<b>1.19</b>

### Absolute Scope 1&2 Emissions



Emissions		2010/11	2020/21	2021/22
<b>Absolute Emissions</b>	tCO2e	33,820	25,914	22,312
<b>Emissions relative to FTE students</b>	tCO2/FTE Student	2.1	1.44	1.19

Note – The carbon emission data has been calculated using the latest Department for Business, Energy and Industrial Strategy (DBEIS) carbon emission factors for electricity and natural gas and reflect the increased decarbonisation of the national grid.

There are 3 categories of emissions that count towards our overall emissions baseline:

- Scope 1 accounts for the direct emissions from gas combustion – 16%.
- Scope 2 accounts for the indirect emissions from electricity consumption – 3%.

Scope 3 emissions associated with the university's activities include: procurement, Student travel, staff business travel, construction, ICT and staff commuting – 81%.

The University Energy Strategy 2020-2050 was endorsed by Estates Management Committee (EMC) in November 2020. The purpose of the Energy Strategy is to set out a development framework covering a thirty-year period from 2020-2050 to provide a sustainable energy future for the University.

Key objectives of the strategy are to:

- Support the delivery of the Estates Strategy 2020-2040.
- Align with Government targets of achieving “net zero” greenhouse gas emission by 2050. Safeguard the University against escalating energy costs.
- Provide resilience and support business continuity.
- Support business development opportunities.

The Energy Strategy will be supported by a detailed deliver plan that sets out the road map to “net zero” greenhouse gas emissions by 2050.

## **5.1 Combined Heat & Power & Carbon**

The University has three Combined Heat and Power CHP Units which continue to form an integral part of the University thermal and electrical infrastructure, providing 30% of the annual University electricity consumption and saving £945,388 in the annual energy expenditure for 2021/2022. The de-carbonisation of the national grid has reduced the benefits associated with CHP and they will be decommissioned at the end of their life (c. 2030) in line with the University Energy Strategy.

## 6.0 Sustainable Travel



The pandemic greatly impacted the travel plan with less people travelling to, from and within Campus. During the recovery period we have seen an increase in dynamic working on pre-covid levels. In 2022 a travel survey was carried out for both staff and students to review the impact of the pandemic on travel choices.

### Staff Survey Results

	2015	2018	2020	2022
Walk / run	18%	19%	17%	18%
Cycle	11%	13%	13%	12%
Motorbike/scooter		1%	1%	<1%
Private car alone (single driver)	55%	48%	51%	57%
Private car as a driver with passengers	n/a	6%	7%	2%
Private car as a passenger	10%	3%	3%	3%
Bus or coach	4%	6%	4%	2%
Train	3%	4%	3%	4%
Taxi		~0%	~0%	<1%
Other		1%	1%	1%

These results were used to estimate the Scope 3 CO<sub>2</sub>e emissions from staff commuting which came to a total of 861,818kg CO<sub>2</sub>e of which 653,811kg (76%) were created by solo car drivers

### Student Survey Results

	2018 (n.512)	2022 (n.550)	CHANGE
Walk / run	55%	57%	+2%
Manual or e-scooter	N/A	<1%	-
Cycle	19%	15%	-4%
E-bike	N/A	<1%	-
Motorbike/scooter	<1%	0%	I/n c
Private car alone (single driver)	11%	12%	+1%
Private car as a driver with passengers	1%	2%	+1%
Private car as a passenger	1%	<1%	I/n c
Bus or coach	9%	9%	I/n c
Train	2%	2%	I/n c
Taxi	<1%	<1%	I/n c
Other	1%	1%	I/n c

These results were used to estimate the Scope 3 CO<sub>2</sub>e emissions from student commuting

which came to a total of 1,161,408kg CO<sub>2</sub>e of which 945,930kg (81%) were created by solo car drivers.



## 7.0 Infrastructure



Sustainable infrastructure continues to be developed in line with the LU Estates Strategy 2020-2040. The University's first Passivhaus development on SportPark Pavilion 4 is due for completion by the end of 2022.

Work is underway to install 70 new EV charge points throughout the campus. These are expected to go live in December 2022.

New energy performance legislation is expected imminently which will require all rental properties to have an EPC rating of C or above by 2025 and B by 2030. Whilst halls of residence with shared kitchen and/or bathrooms are exempt other University owned houses and flats that are rented to academics and PG students, will need to be upgraded to comply with the legislation. This will also apply to non-domestic properties on LUSEP. This will require substantial works to improve the energy performance of our infrastructure.

## 8.0 Biodiversity



In 2020 a new Gardens Strategy was produced and can be requested from the sustainability team.



The University continues to maintain its accreditation to Green Flag status for the University campus. The scheme recognises and rewards well managed parks and green spaces.



We continue to collect honey from the campus apiary. The 2022 collection is yet to be jarred but will be sold via the University website in the autumn.

In Summer/Autumn 2022 a biodiversity baseline survey is being conducted on campus. This will measure the level of biodiversity and set a baseline that will be used to inform future developments. The Environment Act 2021 mandates that any development must create a 3% net gain in biodiversity and this will inform Local Authority planning decisions.

## 9.0 Sustainability Leadership Scorecard

The Sustainability Leadership Scorecard includes a direct link to the Estates Management Record data. It covers sustainability issues beyond the estates function and allows a coordinated whole-institution approach to sustainability providing reports that can be used to communicate the critical drivers within the institution set targets and monitor progress. The EAUC has appointed a new SLS provider and training events scheduled for the new tool were postponed. As a result, we have not completed the SLS since 2020.

### Priority Area Scores

<b>Leadership &amp; Governance</b>	<b>Silver</b>
<b>Estates &amp; Operations</b>	<b>Gold</b>
<b>Partnership &amp; Engagement</b>	<b>Silver</b>
<b>Learning, Teaching &amp; Research</b>	<b>Bronze</b>