

2023 Annual Report

Introduction



Professor Simon Guy

"I'm very proud of our achievements this year as we pursue our goal of delivering a carbon net-zero campus. We know there is much more to be done, in particular, there is very positive work ongoing to meet our goal of addressing scope 3 emissions across the University. We are learning by doing and know that it will take collective endeavour to meet the sustainability challenge"

The purpose of this report is to provide an update on the strategic objectives of achieving net zero carbon emissions from scope 1 and 2 sources by 2030, and scope 3 sources by 2035. These are partially addressed by three key performance indicators that relate to carbon emissions from electricity and gas consumption, and renewable energy generation.

More broadly the report will also outline how the new Sustainability Plan has and will continue to inform the engagement with and practice of sustainability across all university operations.

Performance and compliance



Jon Mills showcasing the university wind turbine to a visit from a school group



Resourcing

The university recruited a Head of Sustainability in March 2023 to oversee and coordinate a more streamlined set of activities led by the Sustainability team. This refreshed approach is set out in a new Sustainability Plan which will be delivered through an iterative set of actions that will be reviewed annually. Though these actions for the 23/24 period have not yet been formalised, they will cover the following broad topics: scope 3 carbon emissions, biodiversity, and faculty engagement. Each topic directly addresses the need for a more focused and collaborative approach between business support and academic functions.

Though the university continues to perform strongly in areas that reflect operational environmental sustainability and was reaccredited with ISO14001 in November 2023 for a further three years, the need to create greater resonance with a much broader definition of sustainability is understood and is clearly set out within the new Sustainability Plan. The university's league table rankings are as follows:



League Table Performance

- QS Sustainability Rankings 2024 – 44th globally (top 3%), 16th in UK and 21st in Europe.
- Times Impact Rankings 2023 – 101/200 globally, 38th in UK
- People and Planet 2022 – 63rd in UK (2023 results due December)

There are many opportunities to enhance stakeholder engagement through social and financial topics which would directly address a growing focus of sustainability league table assessments.

Key Performance Indicators

This section of the report presents 2022-2023 data for each of the university's three key environmental performance indicators, namely:

- KPI 11a – Annual carbon emissions from electricity and heating as reported to HESA (tCO₂e)
- KPI 11b – Annual carbon emissions from electricity and heating using site grid electricity supply carbon emission factor (tCO₂e)
- KPI 11c – Total renewable energy generated annually onsite as reported to HESA (MWh)

The following trends have been noted:

Overall, there has been a small reduction in carbon emissions (3%) to 71406 tonnes from 73437 tonnes in 2019/2020.

Figure 1 shows the total annual carbon emissions from all scopes in 2022-2023:

- Scope 1 and 2 carbon emissions from electricity, gas, vehicle fleet and FGAS emissions amounted to 18% of the total.
- Scope 3 carbon emissions from transport amounted to 29% of the total.
- Scope 3 carbon emissions from procurement of goods and services amounted to 53% of the total.

The four largest individual contributors to the university's carbon emission profile are:

- The consumption of natural gas
- Beginning and end-of-year international student travel
- The procurement of business services and medical/ precision equipment
- Information and Communication Technology

There have been significant reductions in emissions associated with construction.

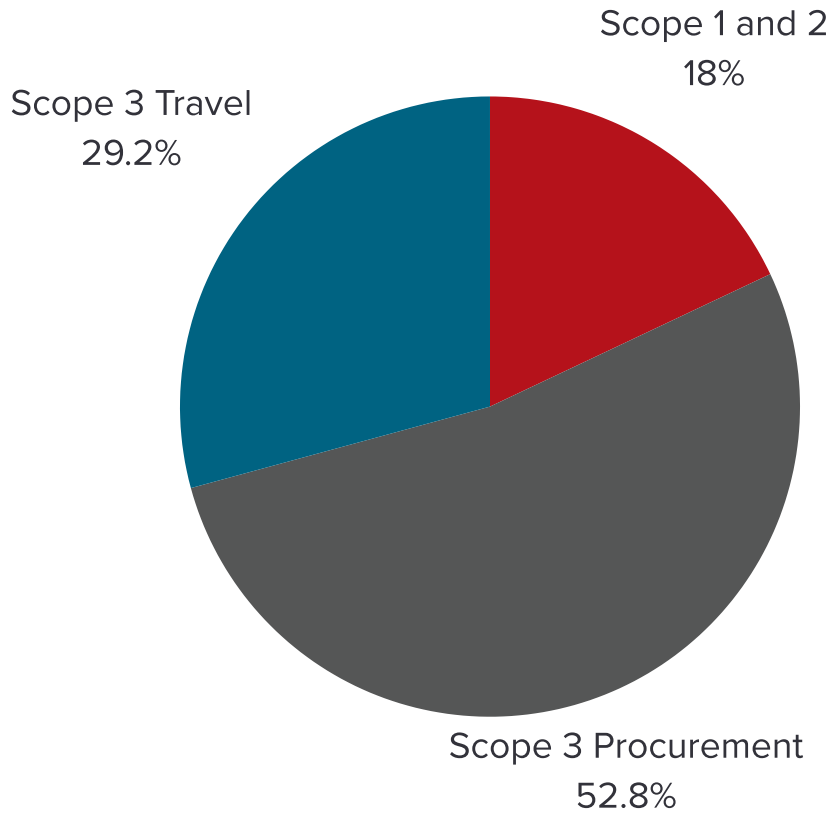


Figure 1 - Total carbon emissions within the 22/23 reporting period amounted to 71,406 tCO₂e, representing a 3% reduction since the 19/20 reporting period. Scope 3 emissions now account for 82% of the university's carbon footprint.

Electricity and Gas: consumption and emissions

Key performance indicators (KPI's) 11a and 11b assess the University's carbon emission performance from gas and electricity consumption. KPI 11c assesses the University's annual renewable energy generation.

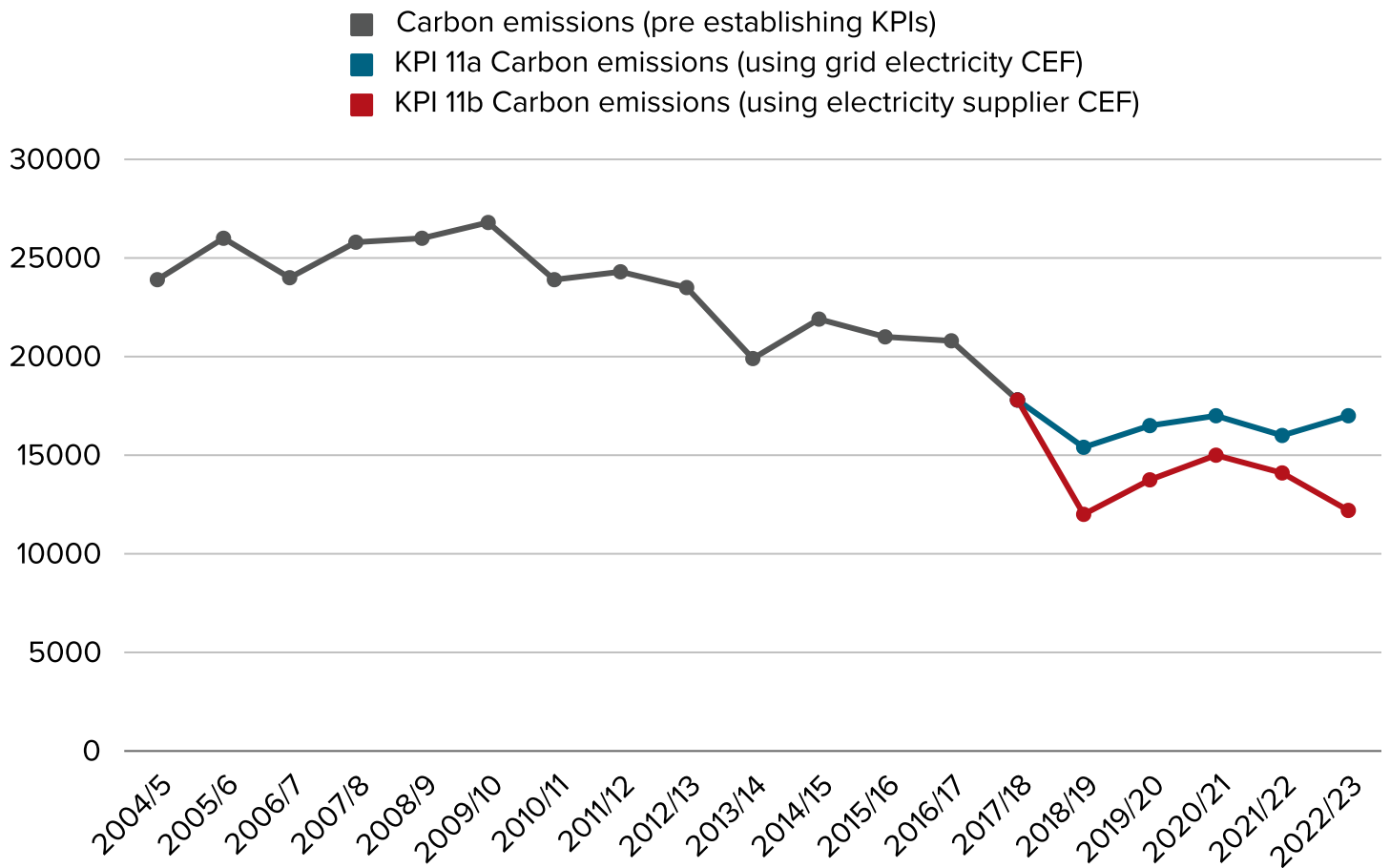


Figure 2 - Annual carbon emissions from gas and electricity consumption - 2005 – 2023.

- KPI 11a shows carbon emissions from gas and electricity calculated using the UK grid electricity CEF for 2022-23 increased by 3% compared to 2021-22. This was due to a significant increase in the consumption of grid electricity, as electrical output from the CHP and wind turbine was lower than in previous years.
- KPI 11b shows carbon emissions from gas and electricity calculated using Lancaster University's electricity supplier's (EDF) CEF for 2022-23 reduced by 17% compared to 2021-22. This is in part because electricity supplied by EDF has a lower carbon emission factor than average UK grid electricity.
- Carbon emissions from gas consumption are the largest contributor to scope 1 and 2 emissions. Gas consumption varies annually depending on CHP output and ambient weather conditions, however the volume of gas consumed per staff/student has declined significantly.
- Total electricity consumption in 2022-23 was 31,540,174kWh (over the last 18 years electricity consumption has varied within the range 30,200 - 35,347 MWh).
- 69% of the electricity consumed on campus was imported from the grid; 27% was supplied by the CHP, 4% by wind (reduced significantly due to recurring technical faults) and 0.3% from solar. Proportionate renewable energy generation by source can be seen in figure 3.

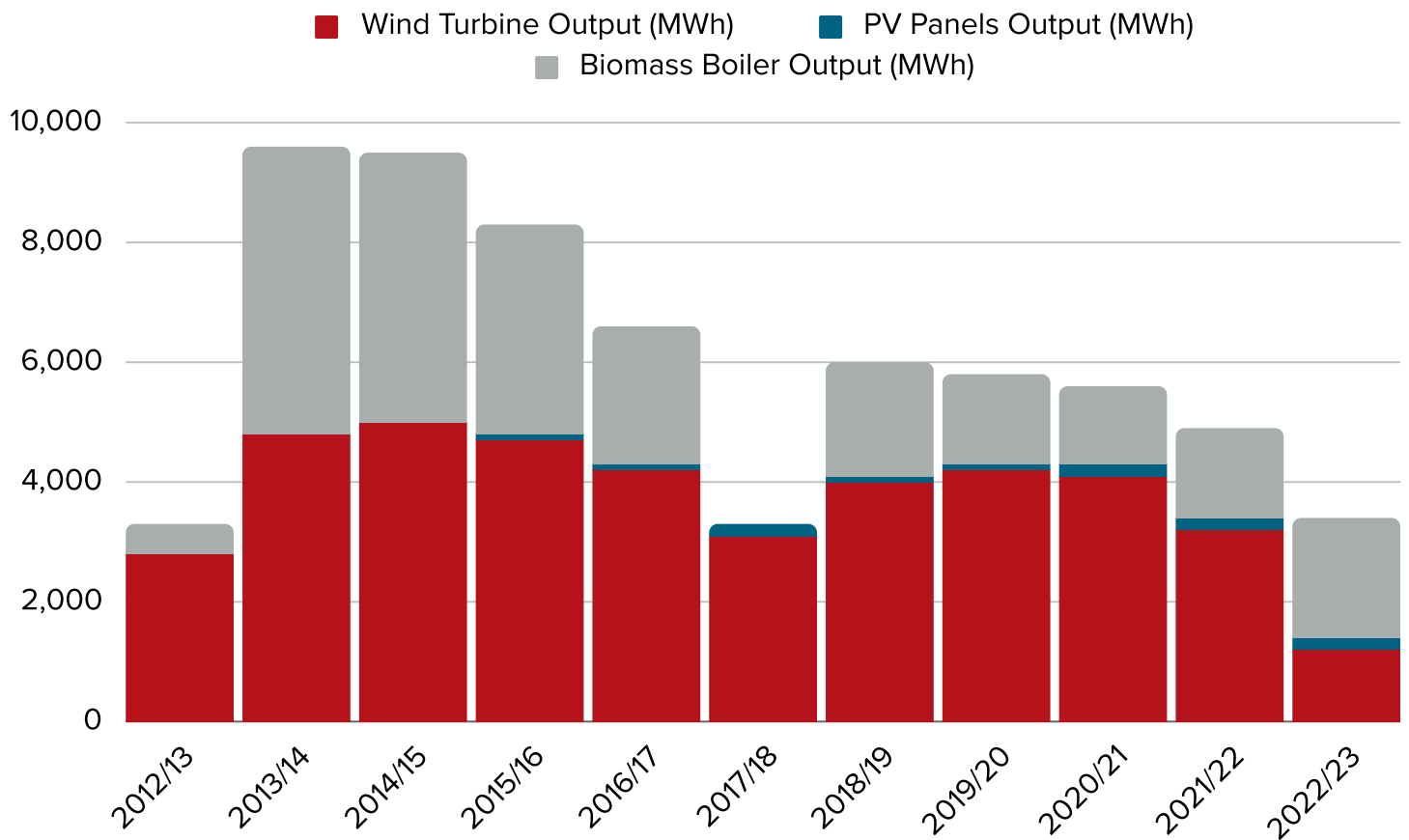


Figure 3 - Annual renewable energy generation MWh (KPI 11C). Renewable energy generation also includes heat-generated from the biomass boiler which in 22/23, supplied 1,835,791 kWh compared to 1,721,000 kWh in 21/22.

Future generation and consumption mixes will depend upon the phasing of the solar farm, energy centre 2, and the decommissioning of the biomass boiler and CHP. Assumptions based on existing information are as follows:

- Solar farm online by 2025 which will reduce grid electricity consumption (KPI 11b) and increases renewable output (KPI 11c)
- Energy centre online by 2026 will increase grid electricity consumption (scope 2) and reduce gas consumption (scope 1)
- CHP decommissioned by the target date of 2027 will reduce gas consumption (scope 1) but will increase electricity grid consumption (scope 2)
- Completion of extensions to the district heating system will reduce gas consumption (scope 1) but will increase electricity grid consumption (scope 2).
- The associated procurement costs of each of these projects will have a significant bearing on our scope 3 emissions which are likely to increase each year over the next four years.

Scope 3 emissions

Significant progress has been made in implementing a number of actions and initiatives designed to reduce emissions in procurement, IT, and travel. However, as scope 3 carbon emissions are directly proportional to travel activity and expenditure, growth in most areas has been observed following a return to pre-covid activity levels as shown in figure 4.

International student travel, business services, IT, and medical and precision instruments are the largest sources of scope 3 emissions. Emissions from construction spend are significantly reduced, reflecting the wider benefits of prioritising estate repurposing and refurbishment over new build development.

When the carbon reduction targets were set in 2019/20 there was a reasonably developed plan for reducing scope 1 and 2 carbon emissions, however, the university and sector's understanding of scope 3 was only just emerging. As already outlined, there is complexity not just within scope 1 and scope 2 future mixes, but also in how expenditure to reduce these emissions will impact on our scope 3 profile.

It is also recognised that by its nature, success in scope 3 relies upon engagement with and the behaviour changes of all staff, students and suppliers. To assist with this, four workstreams have been developed:

- Workstream 1: improving the visibility of carbon data through the use of a carbon dashboard tool.
- Workstream 2: staff engagement on procurement and travel.
- Workstream 3: providing guidance and collaborating with sector colleagues to develop knowledge.
- Workstream 4: working with our supply chain to understand existing spending impacts.

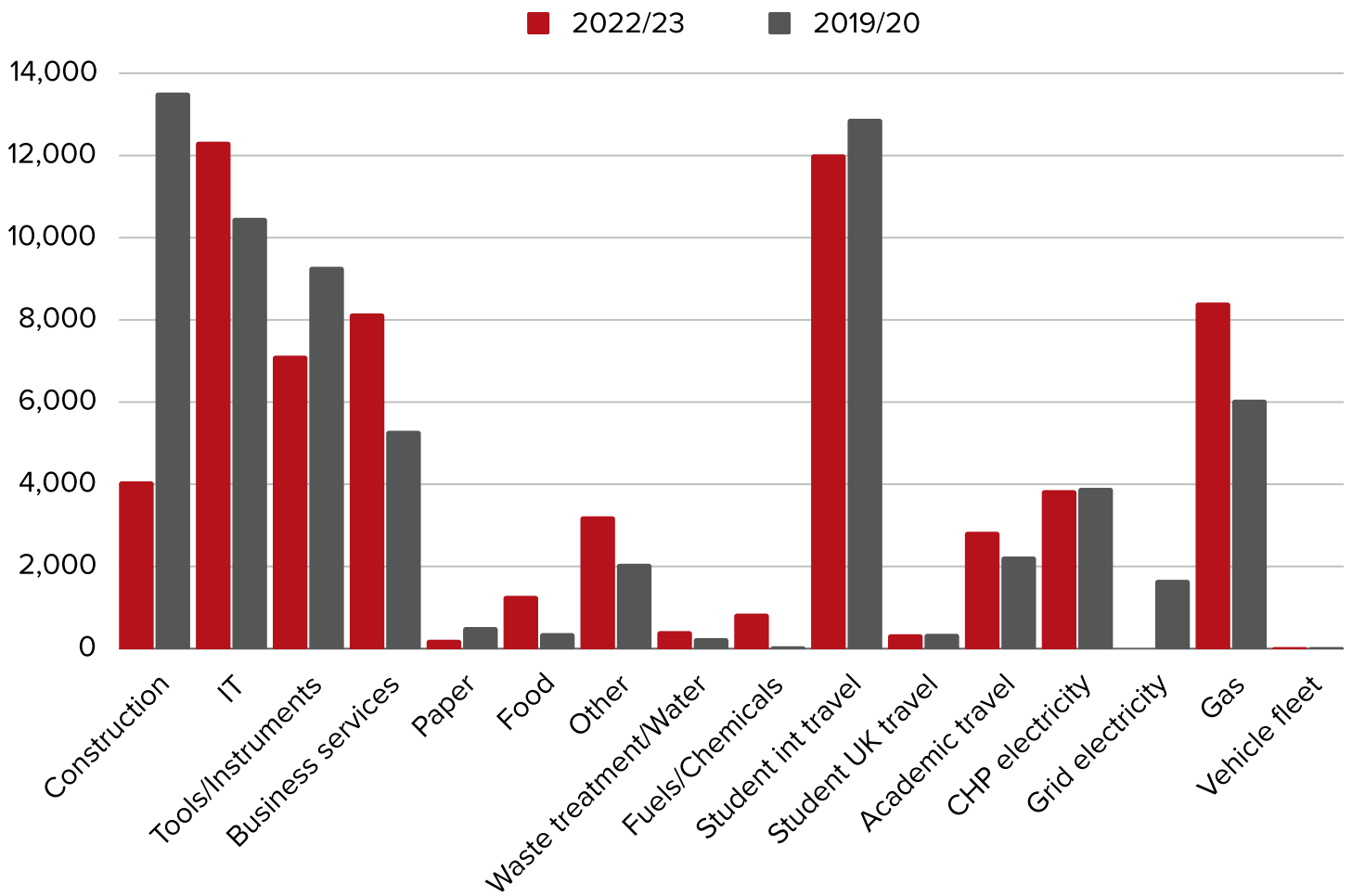


Figure 4 - Carbon emission sources by type (tCO2e).

Engagement

The new sustainability plan outlines a refreshed approach to how sustainability is managed, communicated and seeks engagement with the university community. 'Positive Change' as a more inclusive, accessible and positive slogan has been adopted, replacing the previously used 'Time to Change', and will be a consistent theme within events and engagement.

The period September – December has been a period of high engagement across the university, intended to generate awareness of the refreshed approach to sustainability set out in the plan and facilitate meaningful engagement with topics such as our collective Scope 3 targets. There is now full faculty engagement in the Climate Emergency and Sustainability group; each faculty and many divisional areas have now created their own sustainability groups and are actively seeking support and engagement with the Sustainability team and Procurement team.

Student projects

- The Procurement and Sustainability teams hosted two groups of MSc students from LUMS who, for their MSc project, conducted an in-depth, groupwork project over the period May – September which examined perceptions of sustainable procurement in several faculty and divisional areas. The findings have helped to inform subsequent communications and engagement online, and in forums such as PSLT. It is intended that this first piece of work will become an iterative project offered to MSc students annually.
- The Sustainability team hosted an MSc placement student from LEC who for seven weeks, examined best practices in biodiversity within the Higher Education sector and will be used to inform the development of the new Ecology Plan.
- The Head of Sustainability is contributing to a module within an undergraduate LEC degree programme and is using themes identified within the module cohort to inform other engagement activities, for example, a focused session on Climate Anxiety.
- The University has been successful in its application to join a collaborative project between the British Academy and SOS-UK. The project will run from January – June 2024 and is focused on student-led 'living laboratory' projects to demonstrate the importance of the arts, humanities and social sciences in tackling sustainability challenges. This will be jointly managed between the Sustainability team and Student Education Services.

Global Sustainability Forum

The Global Sustainability Forum launched a month of sustainability action for Lancaster University students at Bailrigg and partner campuses. Taking place in three stages, students came together in a virtual environment for a digital global masterclass, attended virtual group-work-based micro internships, and presented a final pitch to senior university management. The conference involved students from Lancaster, China, Malaysia, Germany and Ukraine and will become an annual event.



Professor Simon Guy addressing a group of people at a Positive Change Week event

Positive Change Week

Positive Change Week ran from Monday 4th to Friday 8th December 2023 and was a week-long celebration of sustainability and social responsibility. It aimed to inspire students, staff and the wider community to take action for a better future by encouraging them to join in with a variety of events and activities that showcase the amazing work being done by our university. It was timed to coincide with the Global Sustainability Forum in the above section.

SDG Report

A report that outlines the university's contribution to the Sustainable Development Goals has been produced and is available [here](#). This report reinforces the need for a refreshed management approach.



The ReStore Lancaster store on campus

ReStore Lancaster

ReStore Lancaster is a new sustainability store concept where Lancaster University is working in partnership with St John's Hospice and Green Lancaster. The shop is a combination of a charity shop with donated items for sale, alongside selling affordable and eco-friendly products to the campus community. The shop sells a variety of items, such as clothing, homewares, cycling equipment, eco-friendly toiletries, and more. The shop also provides a year-round space for the Green Lancaster [Don't Ditch It project](#), where household items are donated at the end of each year, before being upcycled and resold to new students.

Summary

This report has provided an update on our scope 1, scope 2 and scope 3 carbon emissions and the associated key performance indicators.

Additionally, the report has provided an overview of how the new Sustainability Plan is informing engagement and by extension, facilitating a broader understanding of how individual faculties and divisions can affect change.

Contact Us

For further information, please email sustainability@lancaster.ac.uk