Carbon Accounting

Measuring, tracking, and reporting our Carbon Footprint

2023/24

UNIVERSITY OF BIRMINGHAM

Our Approach to Sustainability at the University of Birmingham

The University of Birmingham was England's first civic university, founded on social responsibility. Now, 125 years later, we see no greater responsibility than ensuring our planet thrives to support future generations. We have embodied our commitment to sustainability within our **Birmingham 2030 Strategic Framework**, outlining our approach to delivering positive change, not only through our research, education, operations and partnerships, but through the behaviour and actions of our students and staff, and our engagement with our local communities.

How it's going: our progress

Sustainability in Focus 2024/25

43rd

Globally

QS World University Rankings: Sustainability 2026

Read more about our Top 50 position

16th

In the UK

QS World University rankings: Sustainability 2026

Read more about our national position

84th

In the UK

People & Planet University League 2025/26

Read more about our ranking

Carbon Targets

Our journey towards net zero

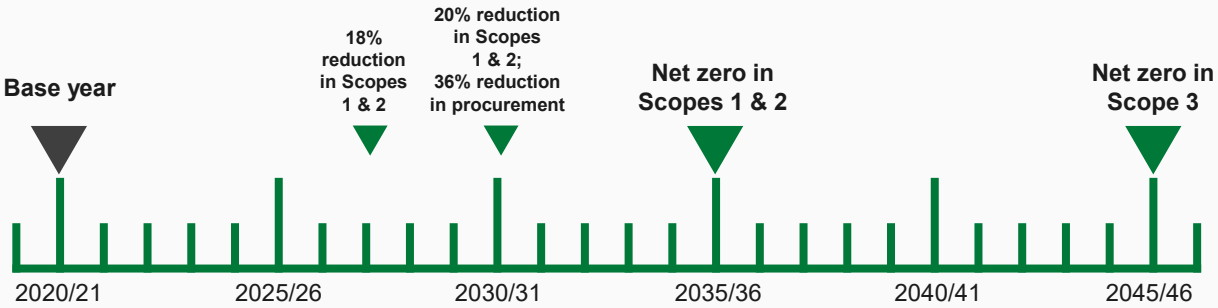
UNIVERSITY OF BIRMINGHAM

Our net zero goals

***Our Strategy*: We will make annual gains in reducing our carbon footprint, aiming to achieve net zero carbon for scope 1 and 2 by 2035 and overall by 2045**

To track our progress to net zero, we have set interim ‘stepping stone’ targets to December 2030; these will measure our performance in the short term to ensure that we remain on the right trajectory towards achieving our net zero goals by 2045.

We aim to meet our ‘stepping stone’ reduction targets for Scopes 1 and 2 by investing in building maintenance and targeted capital improvements; we anticipate achieving our most significant reduction in Scope 1 and 2 emissions between 2030 and 2035, through the decarbonisation of our on-site energy centre and the ongoing decarbonisation of the national grid. We aim to reduce our Scope 3 supply-chain emissions by a third by 2030, adapting our internal frameworks and practices and working with suppliers who mirror our sustainability goals and values.



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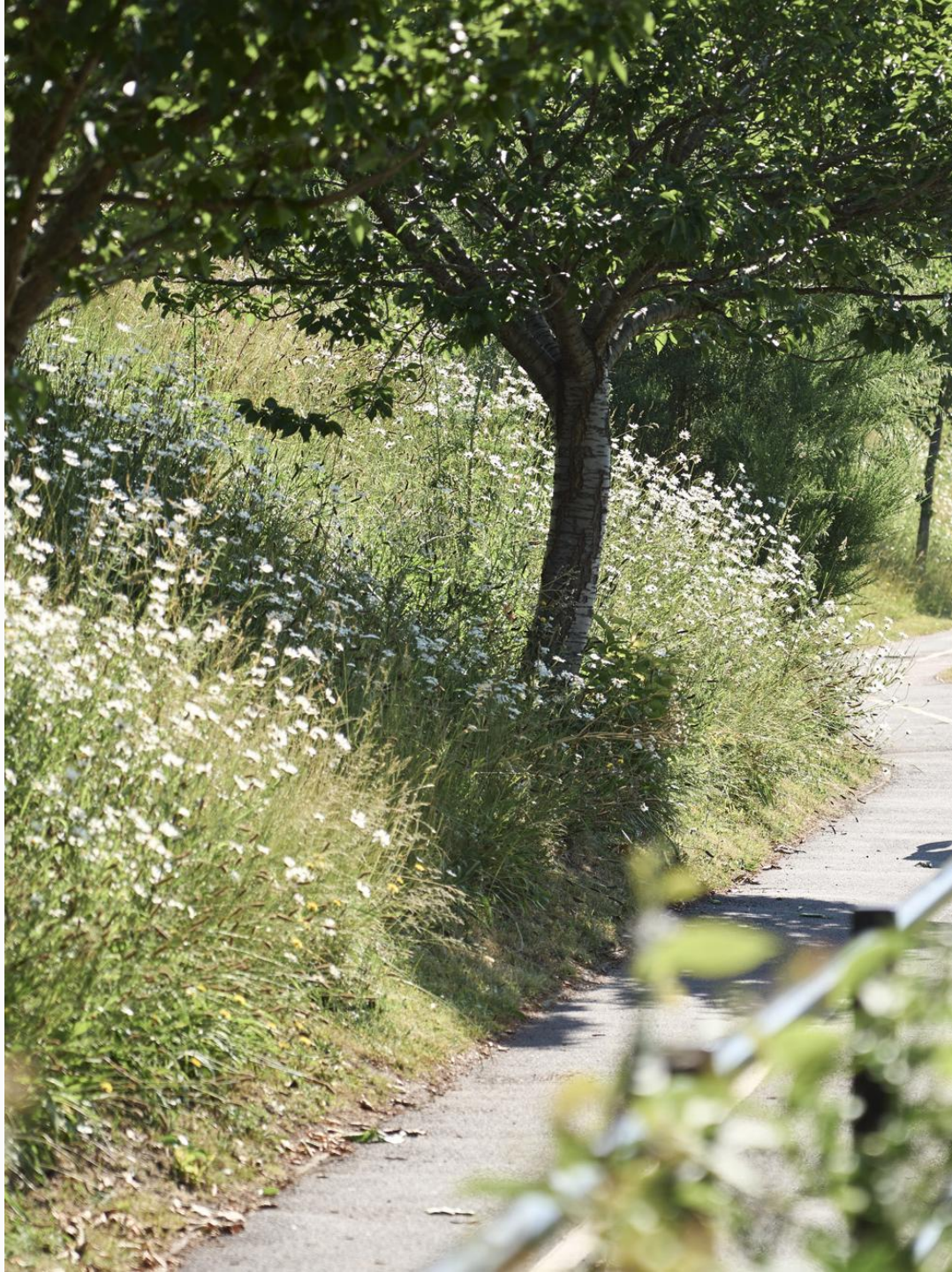
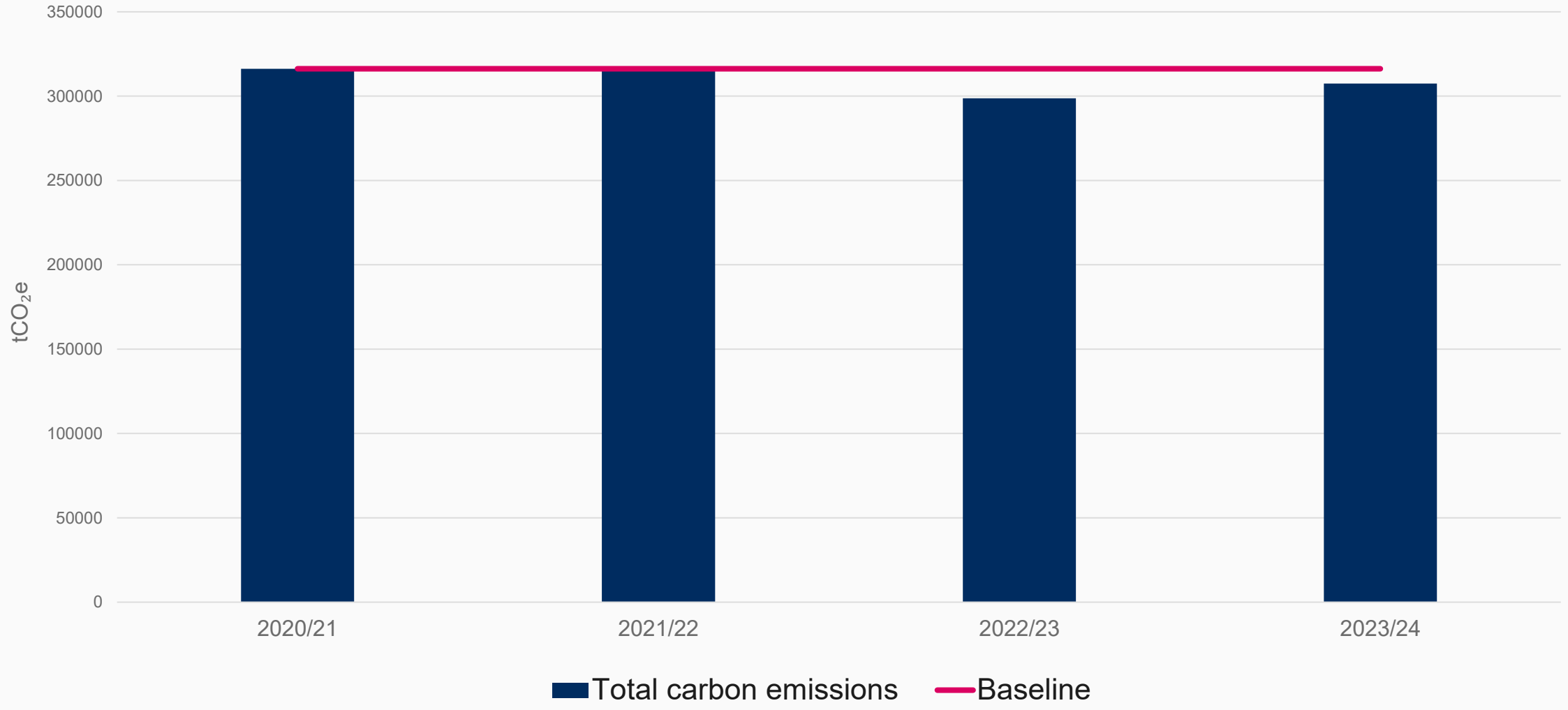


Our Progress

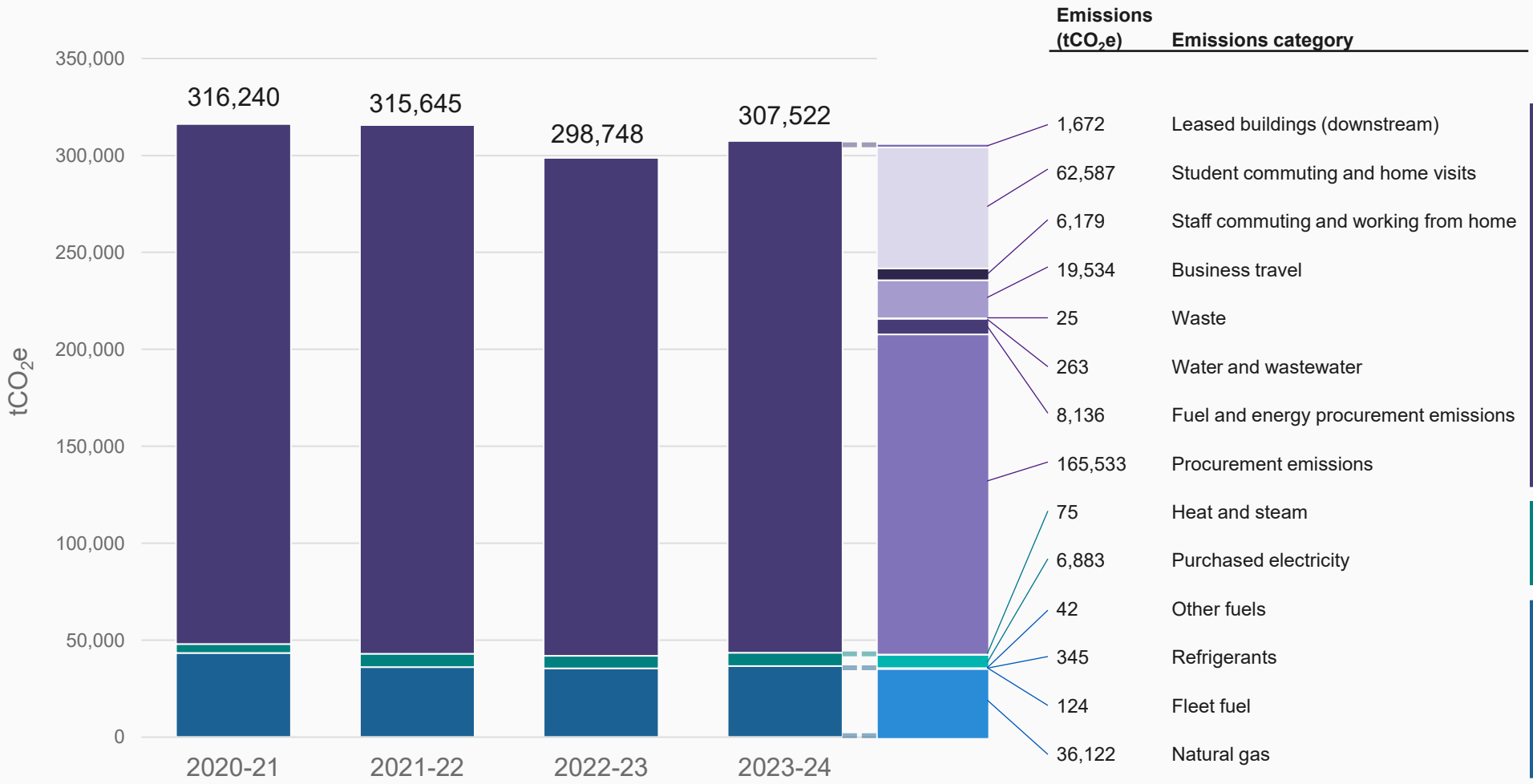
Performance against our baseline, and current carbon-reduction actions

UNIVERSITY OF BIRMINGHAM

Our overall performance 2023/24



Our Carbon Footprint by Scope 2023/24



Emissions (tCO_2e)	Emissions category
1,672	Leased buildings (downstream)
62,587	Student commuting and home visits
6,179	Staff commuting and working from home
19,534	Business travel
25	Waste
263	Water and wastewater
8,136	Fuel and energy procurement emissions
165,533	Procurement emissions
75	Heat and steam
6,883	Purchased electricity
42	Other fuels
345	Refrigerants
124	Fleet fuel
36,122	Natural gas

Scope 3

Indirect emissions that occur because of University activity, from sources we don't own e.g., purchased goods and services, travel, disposal of waste

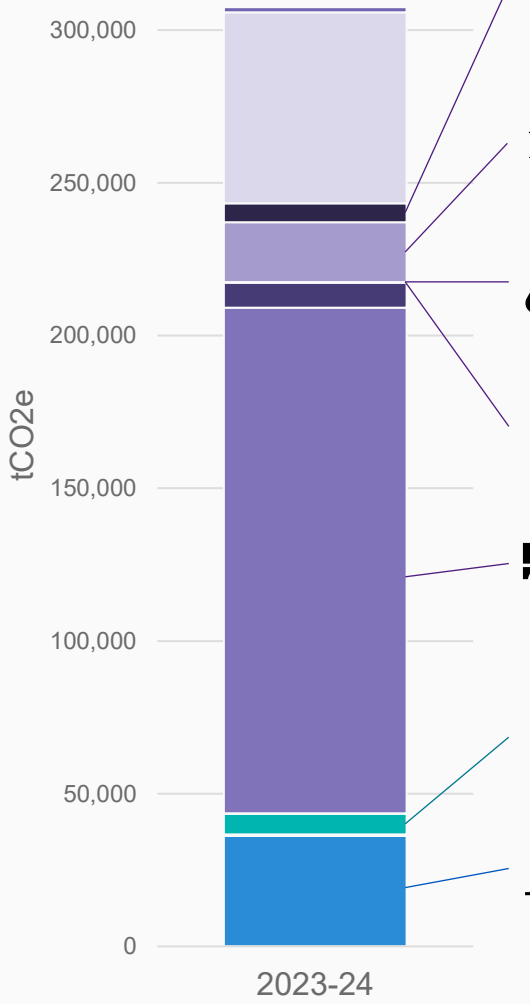
Scope 2

Indirect emissions that result from the generation of purchased energy that we consume, e.g., national grid electricity.

Scope 1

Emissions that come from sources that we directly own and control, e.g., combustion of fuel in boilers, furnaces, laboratory infrastructure, and university-owned vehicles.

What are we doing to reduce our Carbon Footprint?



Staff commuting and working from home
We are improving facilities and services to support staff to choose more sustainable travel, including supporting the redevelopment of University station and providing a low-emission-vehicle scheme. We have installed new electric-vehicle charging points on campus, and we provide cycling classes, an on-site cycle-repair shop, and new, secure bike stores.

Business travel
We have updated our travel guidance encouraging staff to use the most sustainable travel options available for essential travel; work is underway to create detailed travel reports to enable senior leaders to monitor travel in their area.

Waste
We have improved waste segregation across campus (including food waste) aligning with Simpler Recycling legislation. A Sustainability Manager (Circular Economy) has been appointed to implement a new Waste & Circular Economy Strategy and governance.

Water and wastewater
A programme of water audits is underway across campus to identify water efficiencies; a working group is actively looking at water efficiency opportunities in our student accommodation.

Procurement emissions
We have updated our Sustainable Procurement Policy and tender processes and worked to support and encourage more sustainable purchasing. We are working with suppliers to improve the accuracy of our supply-chain carbon reporting and offer them support to reduce their own Carbon Footprint.

Purchased electricity
We are upgrading lighting and controls across our estate; almost two thirds of our buildings have energy-efficient LED lighting installed with three additional projects to be delivered by summer 2026.

Natural gas
We are installing a heat pump to replace fossil-fuel heating and cooling at our Institute for Biomedical Research, due to complete in summer 2026. Work is underway to develop energy performance dashboards for priority buildings to help identify opportunities for improvement. Work is underway to replace outdated building energy management systems to ensure efficient control of heating, ventilation and air conditioning and minimise energy waste.

Our Data

A closer look at our carbon performance: what has changed since our baseline and why?

UNIVERSITY OF BIRMINGHAM

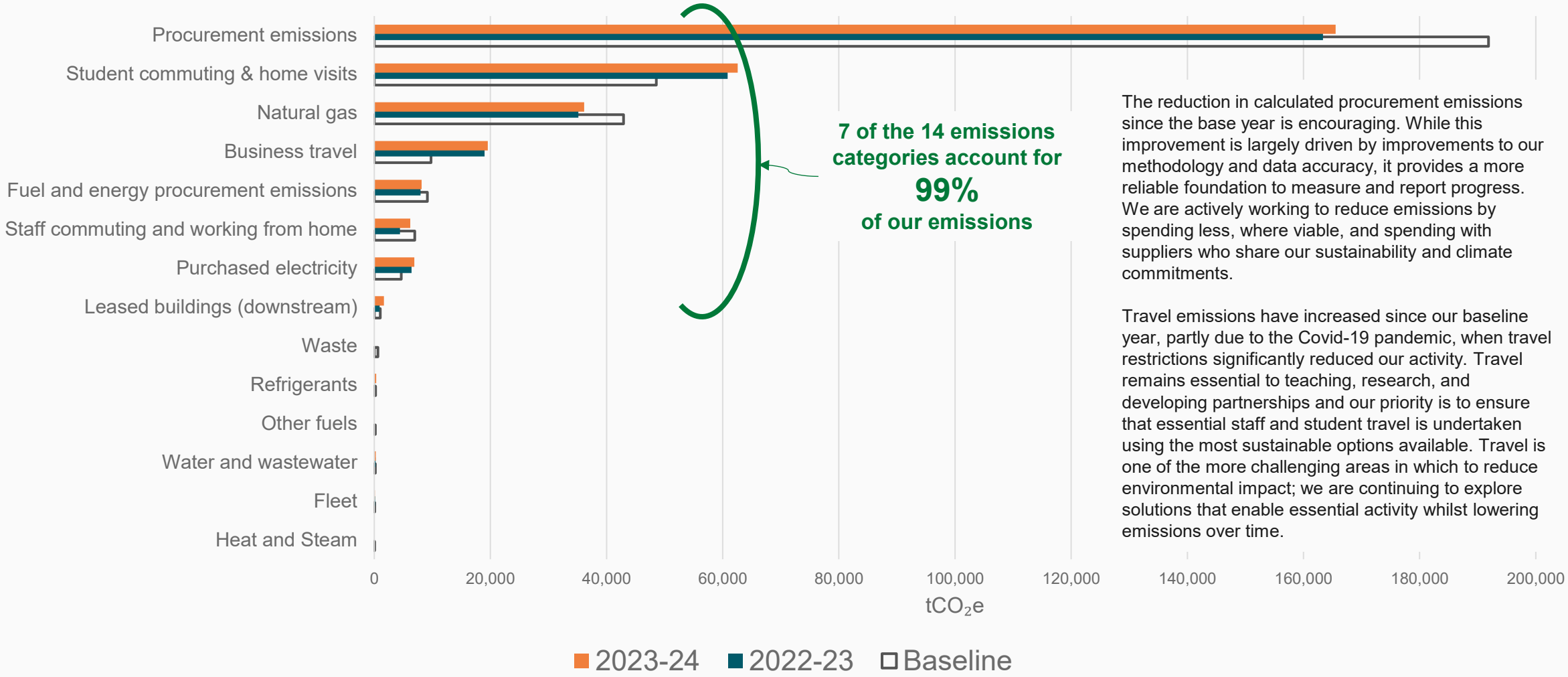
Carbon performance: baseline to 2023/24

UNIVERSITY OF BIRMINGHAM

Scope	Emission category	2020/21 Emissions (tCO_2e)	2021/22 Emissions (tCO_2e)	2022/23 Emissions (tCO_2e)	2023/24 Emissions (tCO_2e)
1	Natural gas	42,923	35,208	35,150	36,122
1	Fleet fuel	75	340	154	124
1	Refrigerants	225	500*	111	345
1	Other fuels	192	17	23	42
2	Purchased electricity	4,652	6,833	6,426	6,883
2	Heat and steam	24	85	93	75
3	Procurement emissions	191,866	202,948	163,336	165,533
3	Fuel and energy procurement emissions	9,145	8,516*	7,974	8,136
3	Water and wastewater	185	168	210	263
3	Waste	628	57	75	25
3	Business travel	9,767	6,555	18,975	19,534
3	Staff commuting and working from home	6,962	4,204*	4,434	6,179
3	Student commuting (term-time and home visits)	48,565	49,532*	60,854	62,587
3	Leased buildings (downstream)	1,031	680	933	1,672
	Total	**316,240**	**315,645**	**298,748**	**307,522**

* We have discovered errors in four of the categories in our 2021/22 carbon accounting report. These figures have been corrected here. The change amounts to a reduction of 15,347 tCO_2e from the previously published total.

Changes over time

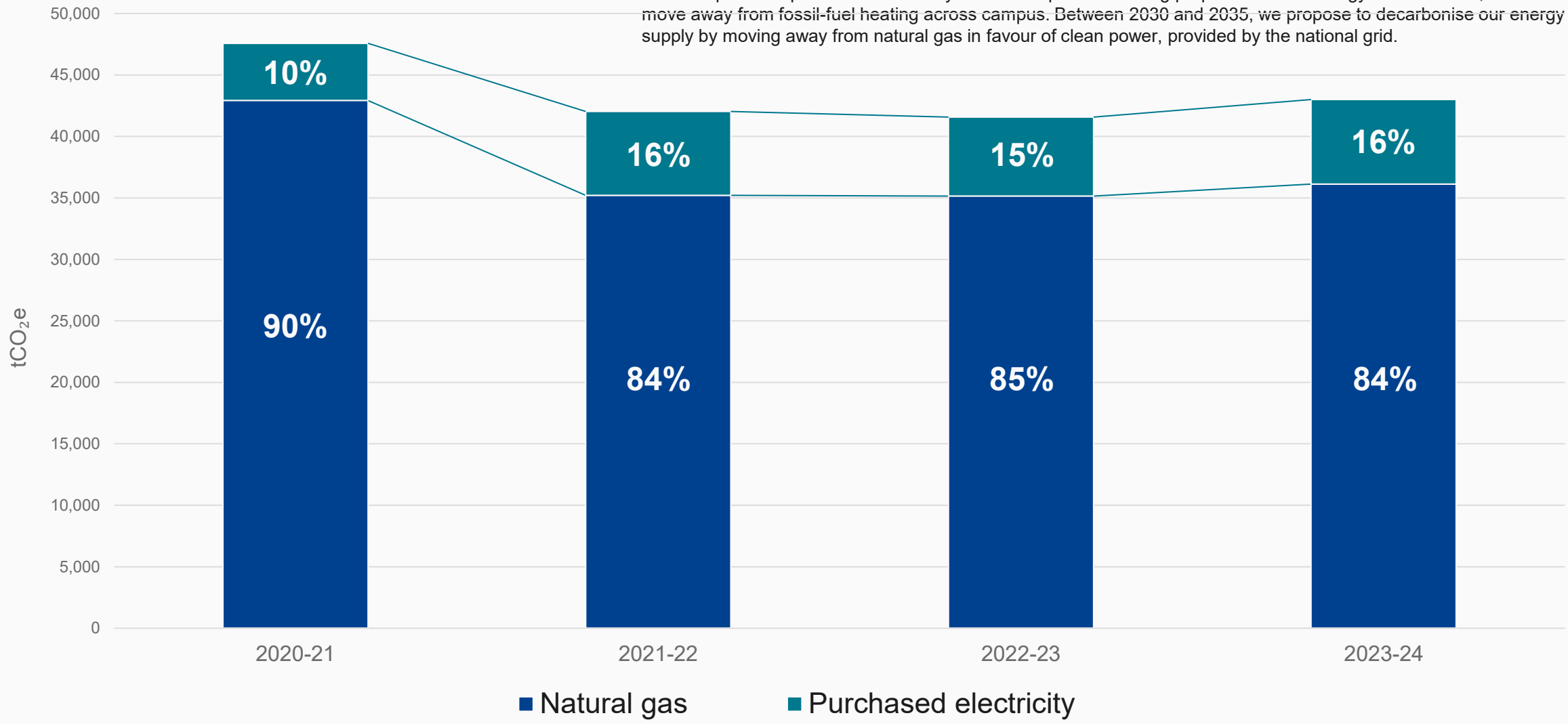


The reduction in calculated procurement emissions since the base year is encouraging. While this improvement is largely driven by improvements to our methodology and data accuracy, it provides a more reliable foundation to measure and report progress. We are actively working to reduce emissions by spending less, where viable, and spending with suppliers who share our sustainability and climate commitments.

Travel emissions have increased since our baseline year, partly due to the Covid-19 pandemic, when travel restrictions significantly reduced our activity. Travel remains essential to teaching, research, and developing partnerships and our priority is to ensure that essential staff and student travel is undertaken using the most sustainable options available. Travel is one of the more challenging areas in which to reduce environmental impact; we are continuing to explore solutions that enable essential activity whilst lowering emissions over time.

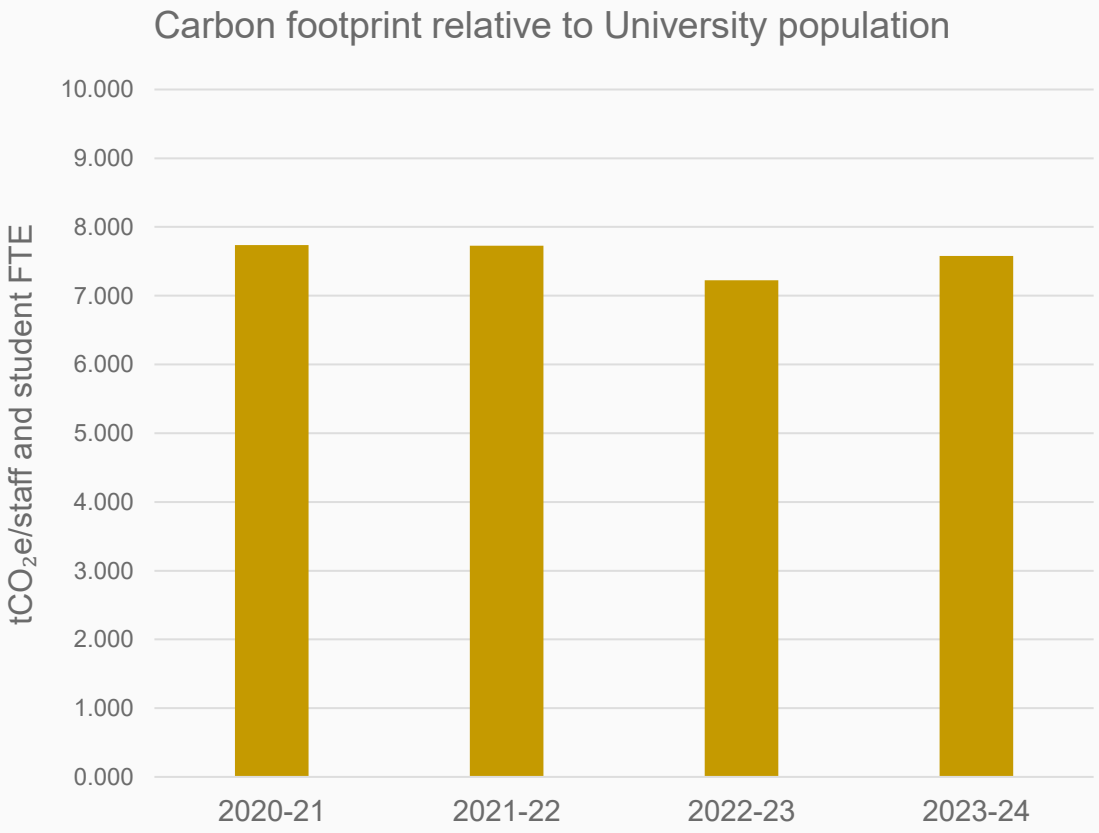
Our energy mix

We anticipate that purchased electricity will make up an increasing proportion of our energy mix over time, as we move away from fossil-fuel heating across campus. Between 2030 and 2035, we propose to decarbonise our energy supply by moving away from natural gas in favour of clean power, provided by the national grid.

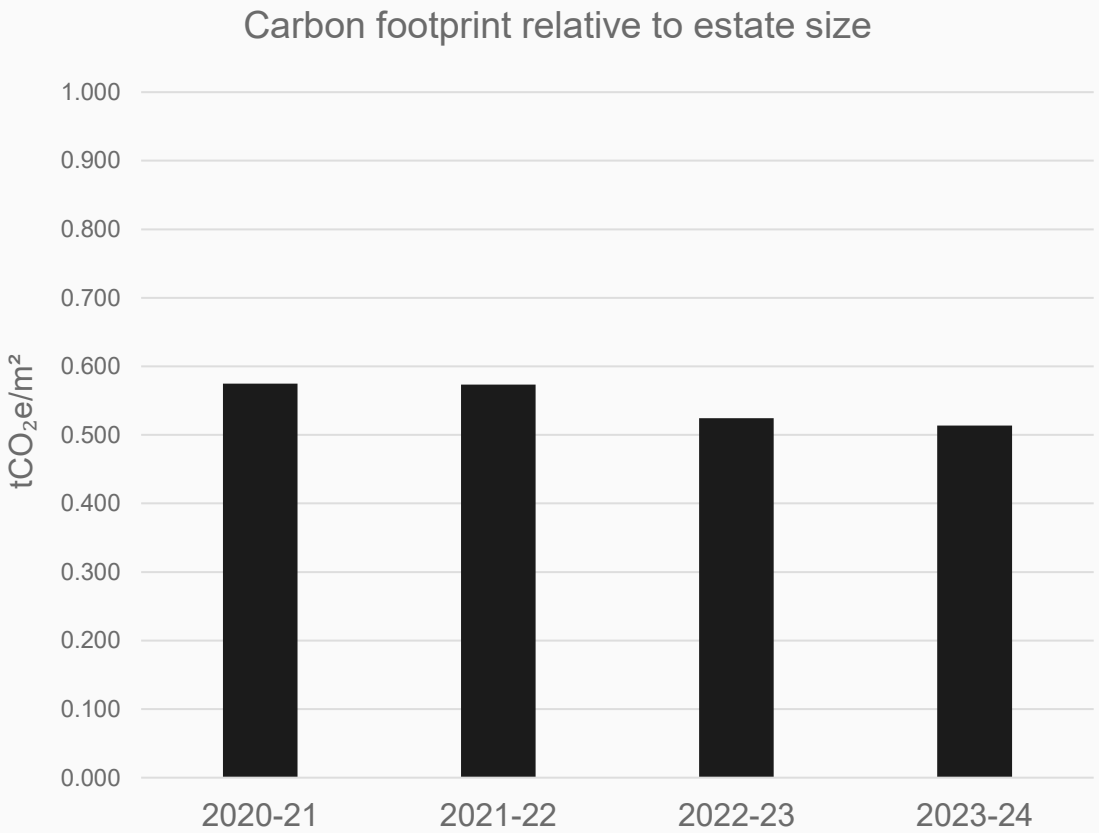


Carbon intensity

Carbon intensity is a measure of our carbon efficiency. Our carbon performance in absolute terms is outlined on slide 10; this slide shows another way of analysing our performance: environmental efficiency. For this we can look at carbon emissions per person and per square metre of our campus buildings. The smaller the number the better – a lower carbon intensity indicates a greater environmental efficiency and smaller climate impact per person or per square metre of our campus buildings.

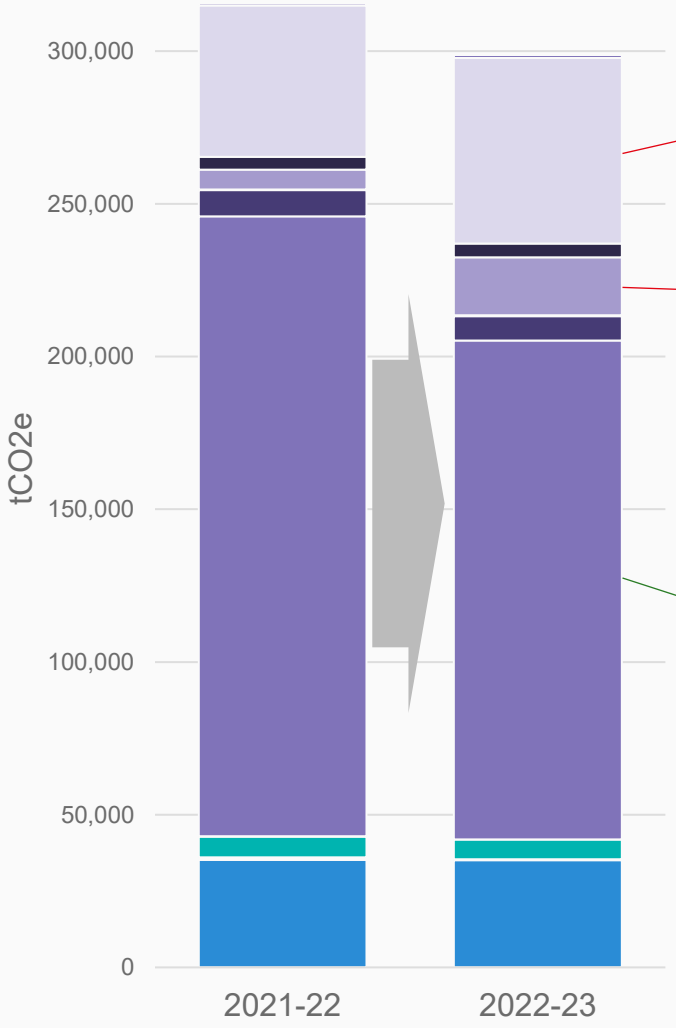


Our environmental efficiency per person is unchanged – our carbon emissions per person have stayed relatively constant

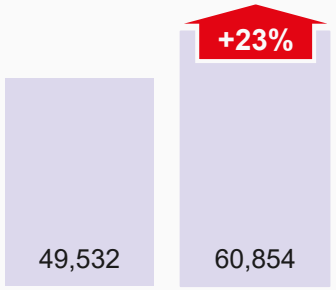


We have improved our environmental efficiency comparative to the size of our estate (buildings), emitting less carbon per square metre despite expanding the campus

Key changes 2022/23



Student commuting & home visits

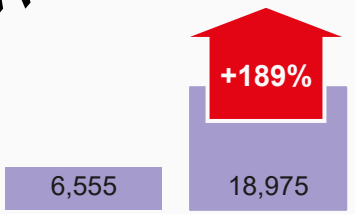


Our student body grew by 10%, and we adopted a new tool for estimating student home- travel emissions more accurately.

The carbon intensity of flying increased in 2023, with the Government's emissions factors for:

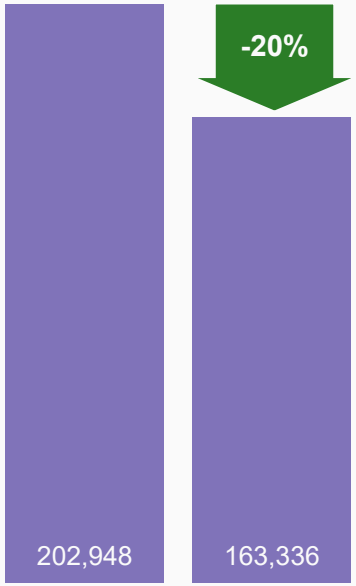
- Short-Haul Economy up 21%
- Long-Haul Economy up 35%

Business travel



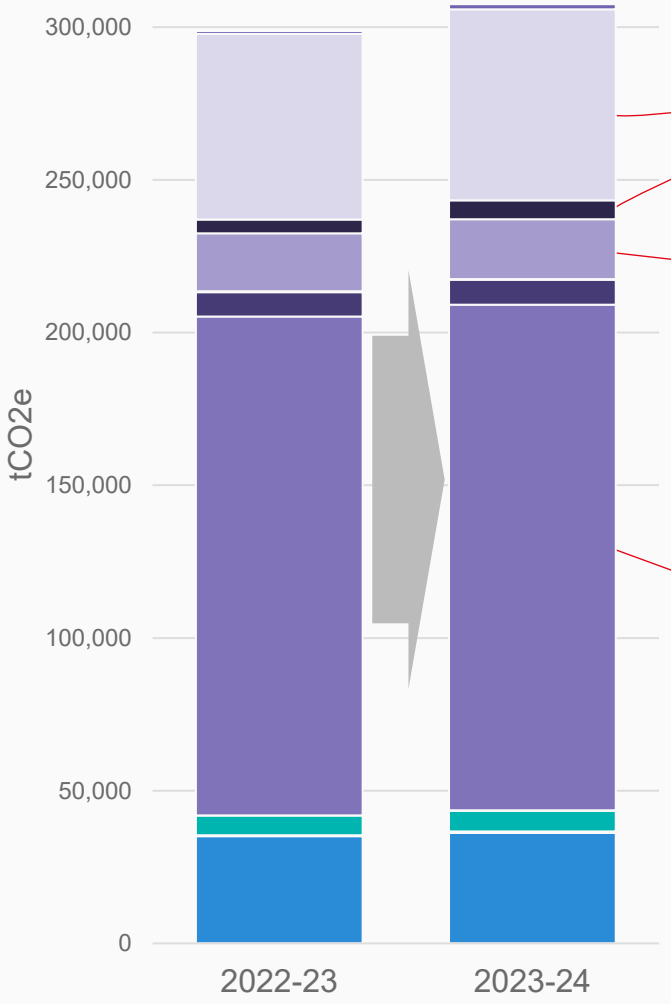
Business travel increased following the Covid-19 pandemic, returning towards previous, 'normal' levels.

Procurement emissions

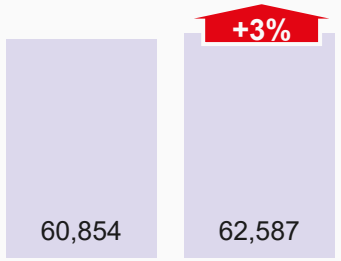


A more accurate, supplier-specific carbon calculation method was applied, to more of our procurement spend in 2022/23 than previously carried out (15%).

Key changes 2023/24



Student commuting & home visits

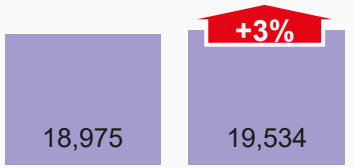


We are getting more mature in our understanding and reporting of student travel.

Staff commuting & WFH

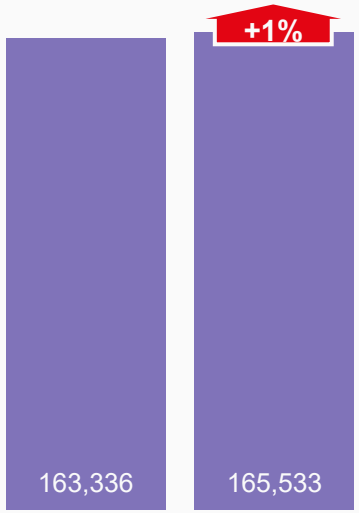
The same improvements raised calculated staff commuting emissions by 39%.

Business travel



Business travel emissions rose by another 3%, due to actual increases in travel.

Procurement emissions



This year we spent less with the suppliers for which we use a supplier-specific method (only 5% of our total expenditure).

Our overall spend went down by 11%, so it is likely that our real emissions decreased (as opposed to reductions derived from data accuracy).