IMPERIAL

Sustainable Imperial

Sharing Imperial's sustainability story

Annual Sustainability Report 2023–24

Foreword

Welcome to Imperial's Annual Sustainability Report, which tells the story of our sustainability journey from August 2023 to July 2024. This isn't just a collection of data and statistics. Here, you'll discover not only the milestones we've reached over the past year, but also the ambitious goals we have for the future. It's all part of our ambition to become a beacon of sustainability and to achieve our target of having a net zero estate by 2040.

Professor Nigel Brandon
OBE FREng FRS
Dean of the Faculty of Engineering, Chair of Sustainability Strategy Committee

Brahmal Vasudevan Institute for Sustainable Aviation, South Kensington Campus

Sustainable Imperial: a strategic initiative

This year we launched our new strategy, Science for Humanity, with Sustainable Imperial embedded as one of the nine strategic initiatives. Sustainable Imperial underpins our commitment to play a leading role in the global fight against climate change, biodiversity loss and pollution. We will set a global benchmark for university sustainability, nurturing graduates who understand and advocate for climate science, supporting our researchers to investigate and respond to planetary challenges and leading by example in our activities and on our campuses.

Sustainability milestones launch

In spring 2024, we launched our latest sustainability milestones. The published suite of materials demonstrates how we will lead by example on sustainability in our operations. These commitments, reports, plans and policies will help to drive practical progress towards our sustainability goals over the months and years to come. This will enable us to improve sustainability across the organisation.

1. We became one of the first universities to sign up to the **Concordat for the Environmental Sustainability of Research and Innovation Practice** in recognition of our ongoing commitment to sustainability. The agreement represents a shared ambition to keep delivering cutting-edge research, in a more environmentally responsible and sustainable way.
2. Following sign-off of our decarbonisation programme by the University Management Board, we published our **journey to a net zero estate by 2040** plan. This outlines our goals to become substantially more energy efficient across our eleven campuses and phase out gas for heat and power by 2040.

> **“Our Sustainability Strategy for 2021–2026 set a goal of reaching net zero without offsets for scope 1 and 2 emissions (energy and campus transport) by 2040 and minimising scope 3 emissions (goods and services we buy) as far as possible.”**

3. We launched our practical plans to help reduce emissions from our supply chain with our **Sustainable Procurement Strategy, Policy and Toolkit**. We will begin by focusing on our biggest suppliers and purchases. We have committed to a 20% sustainability weighting in our major contracts, and 10% in all other procurements.
4. We published our **Sustainable Business Travel Policy**. This was developed through an expert working group and with engagement across Imperial. The policy asks all of us to take a climate-conscious approach to collaboration and travel by reducing the volume of travel and switching to lower-carbon modes of travel wherever we can.
5. And finally, we provided our new guide for staff and students on the **9 things you can do to be more sustainable at Imperial**. We all have a part to play in reducing the impact of our operations and growing the positive impact of our research, teaching and leadership.

These plans and policies build on Imperial’s existing efforts to reduce our carbon footprint. For example, this year, central divisions have worked hard to complete major works to remove the old steam heating and hot water network from South Kensington Campus. The move from steam to a low-temperature hot water system running at 80ºC allows us to use more efficient boilers and Combined Heat and Power (CHP) heat exchangers as an intermediary step towards a net zero estate by 2040.

Electric bikes in use on the streets surrounding South Kensington Campus

Collaboration with colleagues and partners

Imperial is ready to walk the walk on sustainability. Earlier this year we shared our work on decarbonisation and carbon modelling at the annual Environmental Alliance of Universities and Colleges (EAUC) conference. We presented our different approaches to reaching net zero, highlighting the collaboration between our academic and operational colleagues.

With 83% of our emissions being scope 3, everybody has a part to play: from reducing business travel and implementing our sustainable procurement policy, to making workplaces more sustainable, individual and team actions make a big difference. The uptake of the Laboratory Efficiency Assessment Framework (LEAF) scheme is now at 30% and rising. For those who are office-based, the Green Impact programme provides a toolkit for teams to improve sustainability across Imperial and at home. To mobilise these sustainable practices across the university, we have our staff Sustainability Champions Network. With over 100 staff members across all divisions and campuses, our Champions promote awareness and identify and implement sustainability initiatives.

Looking forward to a sustainable future

With the new plans and policies in place, we continue to make tangible progress towards our net zero goal for Imperial's estate. Beyond internal efforts, such as switching to LED lighting and implementing building upgrades, we are committed to growing the positive impact of our research, partnerships and education on sustainability.

It has been a fantastic year for Imperial's sustainability efforts and our recent ranking of sixth in the world for 'Sustainability' in the QS World University Rankings 2025 is testament to our achievements so far. Thank you to all those who have helped us make huge progress towards a more sustainable Imperial and we look forward to realising more of our ambitions together in the year ahead.

Professor Nigel Brandon OBE FREng FRS
Dean of the Faculty of Engineering,
Chair of Sustainability Strategy Committee

Executive summary of our carbon footprint

We are driven by a bold mission to achieve net zero for our estate by 2040 without the use of offsetting. This ambitious goal encompasses all scope 1 and 2 emissions, and we are committed to reducing scope 3 emissions wherever possible. For the academic year 2023–24 we have continued to use the EAUC Standardised Carbon Emissions Framework (SCEF) – wherever data availability permits.

The Sir Michael Uren Hub, White City Campus

Figure 1: EAUC SCEF categories and their current application to Imperial College London's carbon emissions report

Scope 1 direct	Scope 2 indirect	Scope 3 indirect	Scope 3 indirect
■ Combustion of fuel in company facilities ■ Company vehicles	■ Purchased electricity for own use	■ Employee and student commuting ■ Employee homeworking ■ Water ■ Business travel ■ Waste ■ Purchased goods and services ■ Fuel and energy related	■ Student accommodation ■ Transport and distribution of goods ■ Investments ■ Franchises
Imperial College London	**Upstream activities**		**Downstream activities**

Data currently unavailable

 Land and livestock	 Refrigerants and volatile organic compounds	 Student residence	 Transport and distribution of goods	 Leased assets	 Investments

Out of scope

 Purchased heat and steam for own use	 Franchises	 End-of-life treatment of sold products	 Processing and use of sold products

Our total carbon emissions for 2023–24 were **ca.244,000 tCO_2e**. This is an ca.4,000 tCO_2e increase compared to 2022–23.

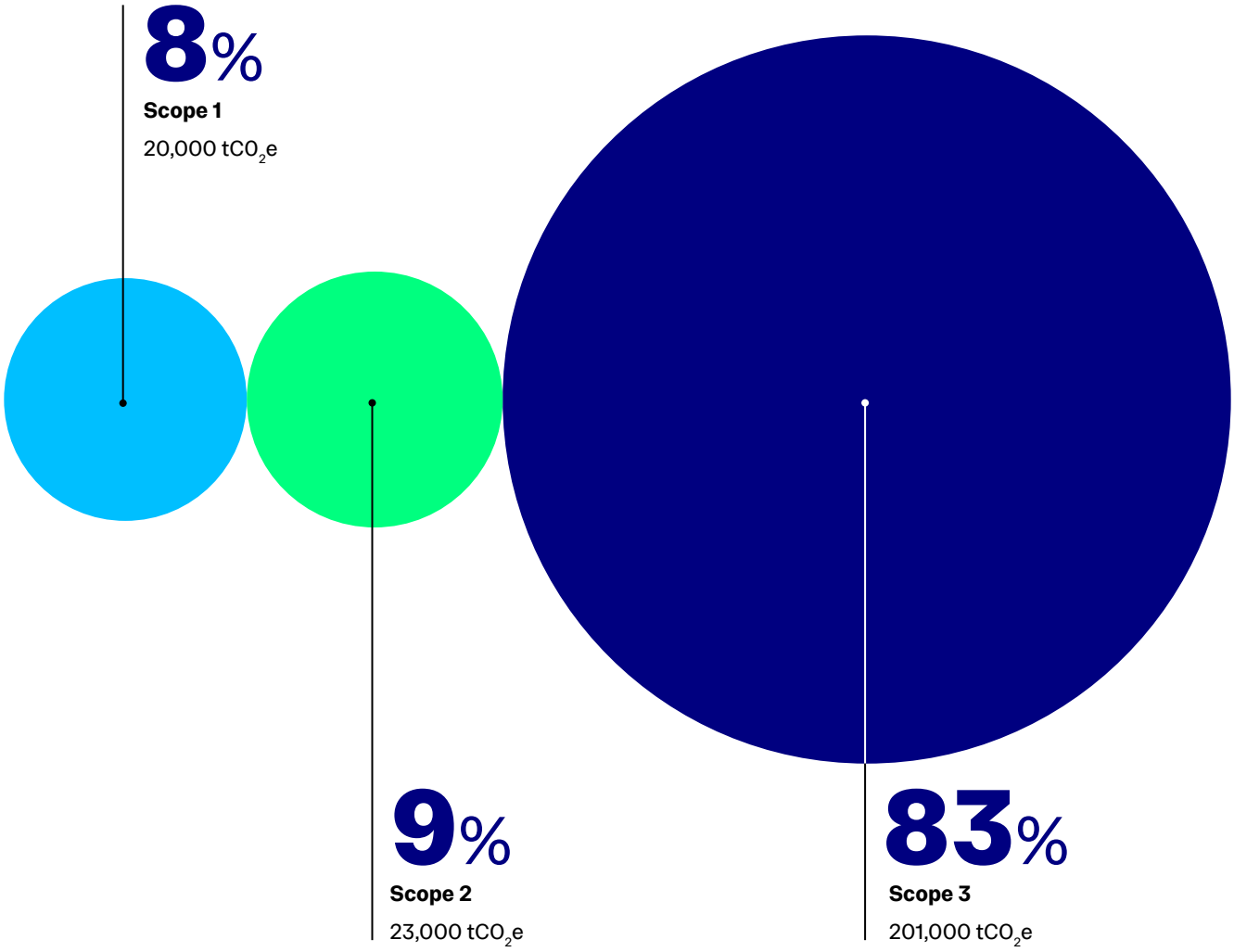
Our overall scope 1 emissions reduced this year due to the temporary shutdown of the Combined Heat and Power (CHP) plant on the South Kensington Campus while the heat exchangers were replaced as part of the programme to remove the steam heating network and move to a hot water network only. This led to a decrease in the use of natural gas by the CHP. During this time, temporary boilers using natural gas and HVO (hydrotreated vegetable oil) diesel were in use. Additional grid electricity was purchased, causing our scope 2 emissions to increase. We expect to see a partial rebound in scope 1 and decreased scope 2 footprint next year as the CHP engines return to use at South Kensington, but an overall benefit from increased CHP efficiency and heating efficiency from the removal of the steam network. The de-steaming project is detailed on page 16.

Illustrated by figures 4 and 5 below, we have seen a decline in our scope 1 and 2 emission intensity, per staff and student and per total income, as the university grows.

Our scope 3 emissions have continued to increase since 2021. Procurement accounts for nearly 50% of these emissions and travel accounts for 48%. Our established sustainable procurement and travel policies will help us build a stronger approach to reducing these emissions, working alongside teams to embed these policies into everyday operations.

Throughout the report, we have broken down the carbon emissions per section to illustrate where our biggest carbon impacts lie.

Figure 2: Imperial's total carbon emissions for 2023–24



Imperial's carbon footprint for 2023–24

Scope 1 emissions are our direct emissions as a result of sources we own and control. This is combustion of fuel in owned and controlled premises and emissions from owned land and livestock. Scope 2 emissions are indirect emissions from the generation of grid-derived electricity and heat by utility providers. Imperial does not purchase heat or steam directly.

Table 1: Overview of Imperial's scope 1 and 2 emissions

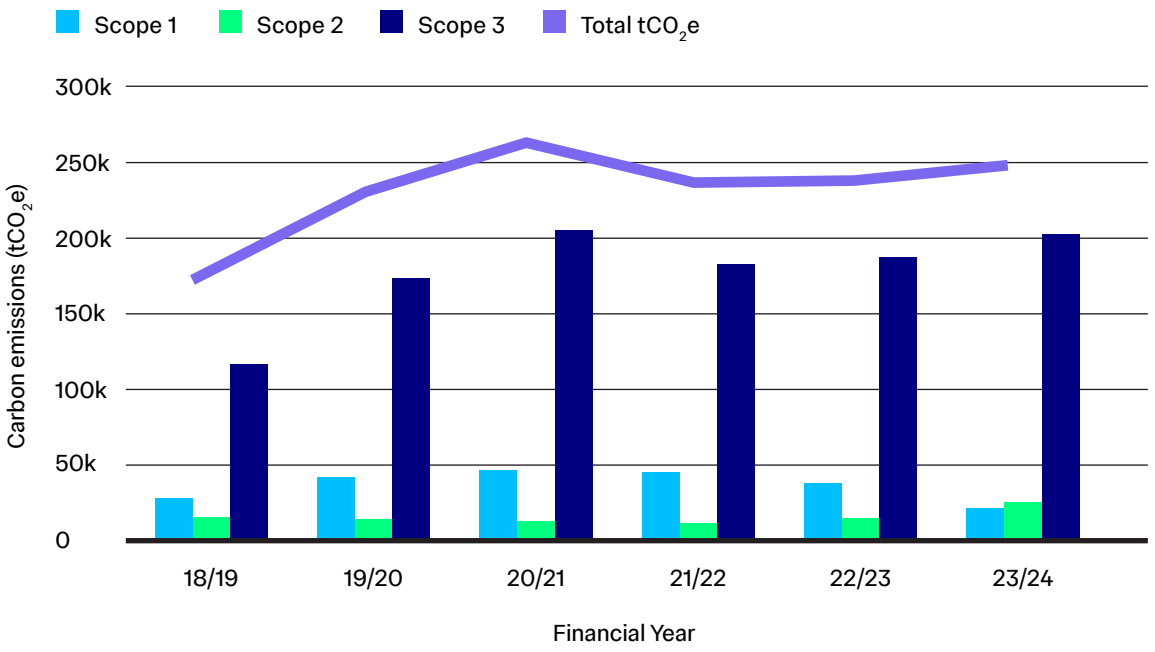
Scope	Source	2023–24 emissions (tCO_2e)	Percentage of total emissions	2022–23 emissions (tCO_2e)	Change in percentage of total emissions	Comments
1	Natural gas	19,492	8%	36,774	–7.24% ↓	Gas consumption has decreased due to ongoing works related to the de-steaming project at South Kensington. This resulted in the CHP units and boilers in the South Kensington Energy Centre being shut down throughout the year, leading to a reduction in gas use but an increase in purchased electricity.
	Vehicle fleet	17	0.01%	17	0.00%	
	Other fuels	29	0.01%	1.34	0.01%	The increase is due to the use of HVO diesel alongside natural gas to power temporary heating boilers that compensated for the shutdown of CHP during the de-steaming work.
2	Purchased electricity	22,874	9.39%	14,192	3.64% ↑	There has been an increase in electricity consumption due to the ongoing works related to the de-steaming project. Additional electricity needed to be purchased to compensate for the shutdown of the CHP plant that usually generates electricity on site.
Total		**42,412**		**50,984**		

Scope 3 covers the widest range of emissions and accounts for 83% of Imperial's total carbon emissions – which is similar to the footprint of many other organisations. It includes all indirect emissions from up and down the value chain, ranging from water and waste to business travel.

Table 2: Overview of Imperial's scope 3 emissions

Scope	Source	2023–24 emissions (tCO_2e)	Percentage of total emissions	2022–23 emissions (tCO_2e)	Change in percentage of total emissions	Comments
3	Procurement and supply chain	99,943	40.13%	91,418	3.57% ↑	The largest categories of emissions are ICT, laboratory and research supplies. Detail available in the appendix (page 45).
	Water	68	0.03%	88	–0.01%	
	Fuel and energy	5,241	2.15%	8,031	–1.17% ↓	Upstream emissions as a result of fuel and energy consumption within scope 1 and 2, such as transmission and transportation of fuel to the point of use.
	Waste	92	0.04%	199	–0.04%	
	Business travel	34,473	13.84%	25,468	3.77% ↑	The upstream emissions as a result of all travel undertaken by staff, students and guests for business purposes.
	Staff commuting	1,904	0.75%	1,904	0%	Figures from 2022–23 have been used. We will have updated numbers for 2024–25.
	Staff homeworking	2,054	1.27%	2,785	–0.31% ↓	
	Student commuting	584	0.23%	584	0%	Figures from 2022–23 have been used. We will have updated numbers for 2024–25.
	Student travel	57,245	22.99%	57,245	0%	Figures from 2022–23 have been used. We will have updated numbers for 2024–25.
4	Offsets (first time reporting)	-430	–0.18%			Negative emissions for offsets purchased through Profs Who Fly for business travel. It is used where funders require offsetting, such as Wellcome Trust, and from those who offset travel on a voluntary basis.
Total		**201,174**		**187,722**		

Figure 3: Imperial's total scope 1, 2 and 3 carbon emissions year on year



Figures 4 and 5: Imperial's scope 1 and 2 emissions per staff and students FTE and per £m total income year on year

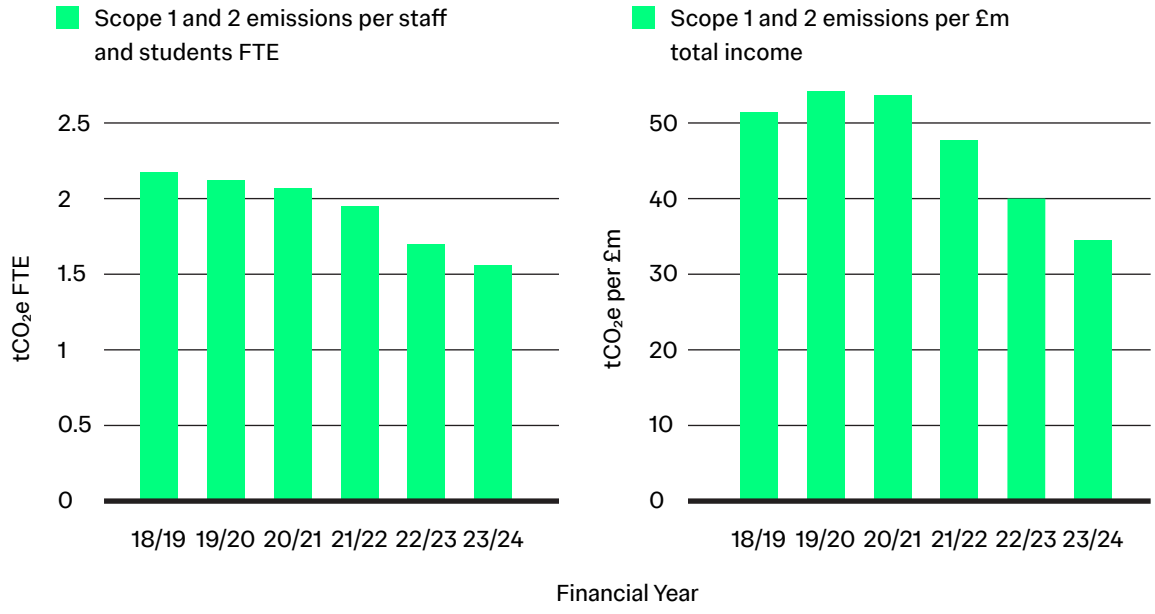
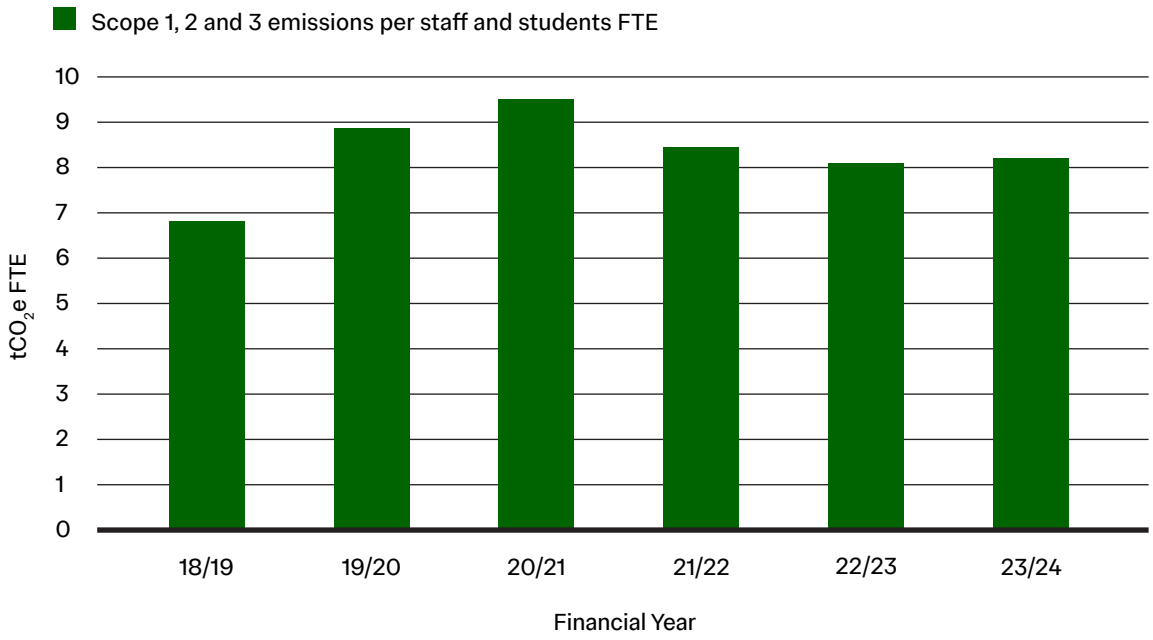


Figure 6: Scopes 1, 2 and 3 emissions per staff and students FTE year on year



Would you like to find out more? Dive into further analysis of this year's carbon footprint at the end of this report.

Contents

Highlights from 2023–24

450+

Number of attendees at the annual Green Careers Fair.

283,842kWh

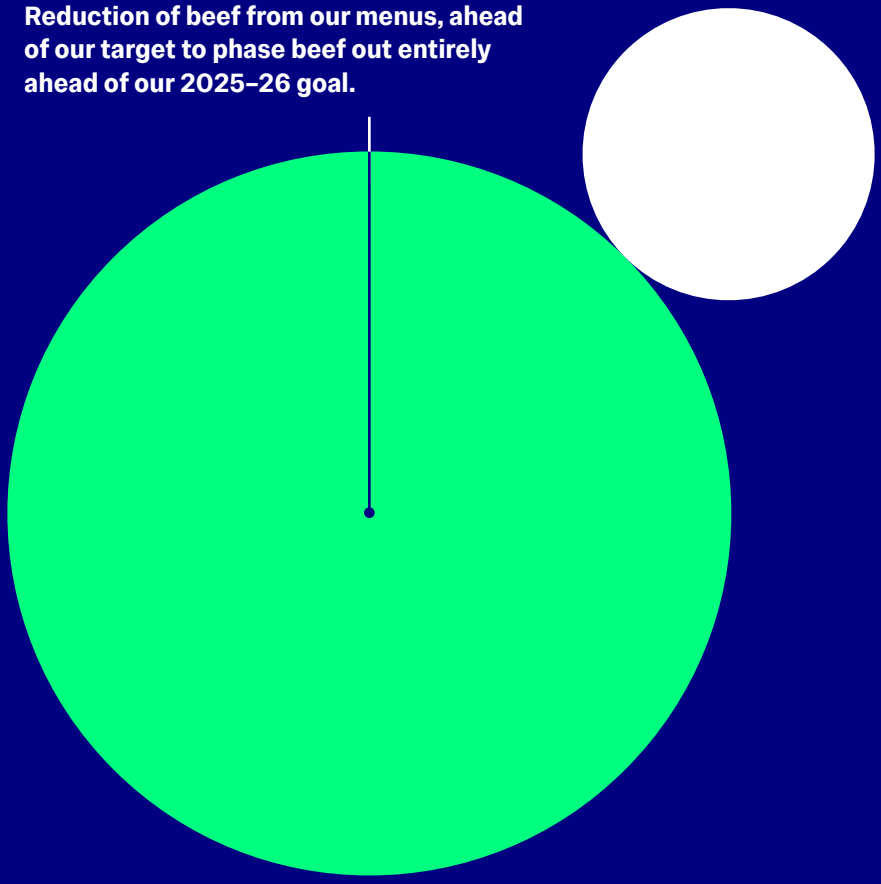
Energy saved from Imperial's My Green Lab 2024 Freezer Challenge submission. Nine departments across three faculties, and Central Biomedical Services, saved 58tCO_2.

25

Events held during Sustainability Fortnight in February, including ten workshops, five panels and two sustainable careers events.

86%

Reduction of beef from our menus, ahead of our target to phase beef out entirely ahead of our 2025–26 goal.



30

Laboratory Efficiency Assessment Framework (LEAF) assessments: 298 labs achieved bronze, 45 achieved silver and 19 achieved gold status. These awards contribute to savings of 227tCO_2 annually (as per the UCL calculator).

Highlights from 2023–24

£50K

We allocated £50,000 to our Sustainable Lab Kit Fund. This fund bridges the financial gap between the initial higher cost for more sustainable and efficient equipment, making it easier for groups to choose environmentally friendly options when replacing lab equipment.

220

Number of attendees at the London Student Sustainability Conference hosted at Imperial.

526

Actions that were completed this year as part of our Green Impact scheme. 130 staff across 27 teams took part in the initiative.

494

Number of students engaged in the SOS-UK Sustainable Halls campaign.

1,110

LED light fitting replacements in Flowers Building over the summer to make our buildings more energy efficient.

125

Members of staff who are part of the Sustainability Champions Network.

Carbon and energy

In May 2024, we published our outline journey to be a net zero estate by 2040 across our 100+ buildings spread over eleven campuses. This sets out our path to becoming substantially more energy efficient and phasing out gas for heat and power by 2040.

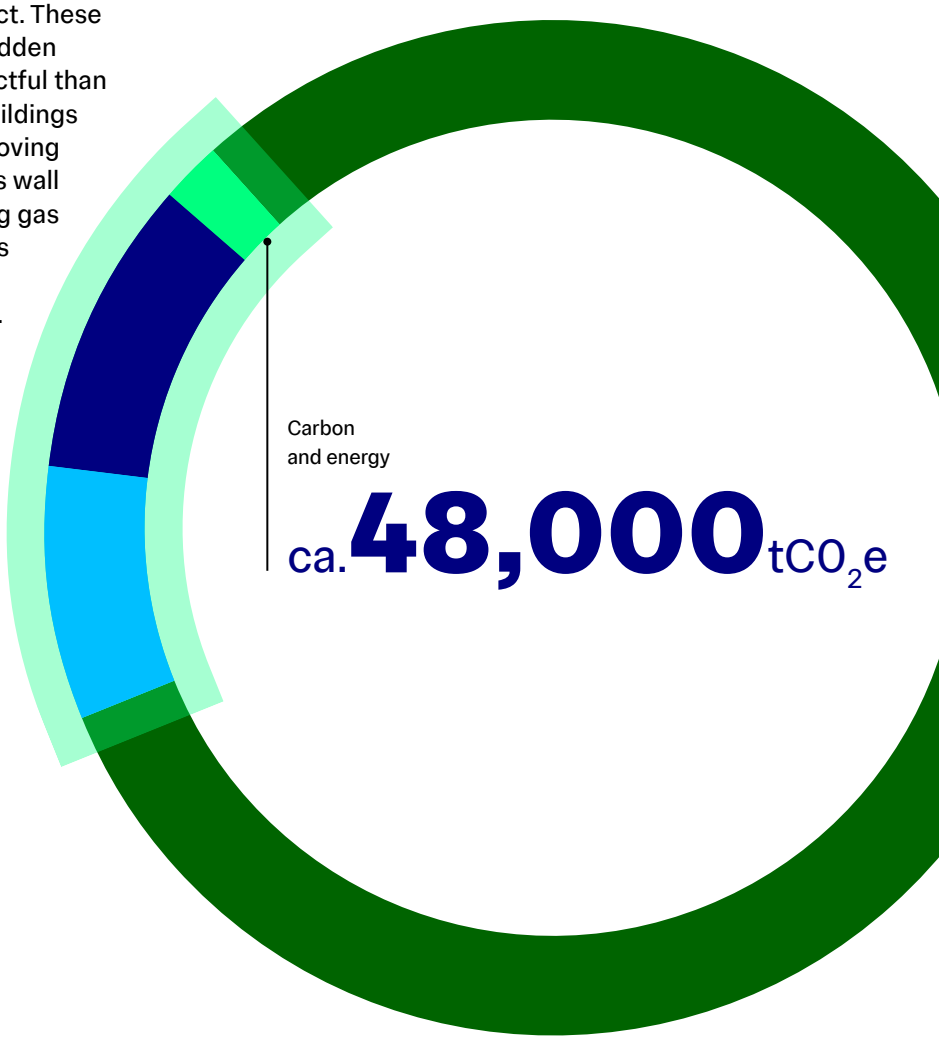
2023–24 achievements

The first phase of our journey to be a net zero estate by 2040 has already begun, with the installation of LED lights, installation for solar where possible, and installation of better building heat and ventilation controls, which will make our buildings more comfortable to work in as well as more energy efficient.

Our priority is to reduce demand for electricity and heat and focus on areas with the most impact. These aren't always visible interventions: largely hidden work on building controls will be more impactful than rooftop solar. For us to reach our net zero buildings goal by 2040, our funds are best spent improving building fabric to reduce energy use, such as wall and roof glazing and insulation, and replacing gas boilers with heat pumps. These interventions will have the biggest impact on reducing electricity demand and our carbon footprint.

Our planned works will be reviewed annually to be re-evaluated and re-costed. This will ensure our work makes sense technically and allows for new innovations to be harnessed.

Figure 7: 2023–24 emissions including fuel and energy



> **Transitioning to net zero is one of the greatest challenges facing the world right now."**
>
> **Professor Hugh Brady**
> President of Imperial

LED lighting upgrades

In July 2024, upgrade works began to switch to low energy, light emitting diode (LED) technology as part of our net zero by 2040 commitment. Our priority is to reduce demand to reduce our carbon emissions and by switching to LED, we can save power on lighting. Any new-builds and refurbishments in recent years have been fitted with LEDs, but this programme is the first series of interventions carried out without being part of other work.

Further lighting surveys will begin to identify the works needed in the next 18 buildings. A survey of the City and Guilds building has been completed. It will become a showcase for the energy reductions that can be achieved including extensive metering systems. Works commenced in autumn 2024.

137,680kWh

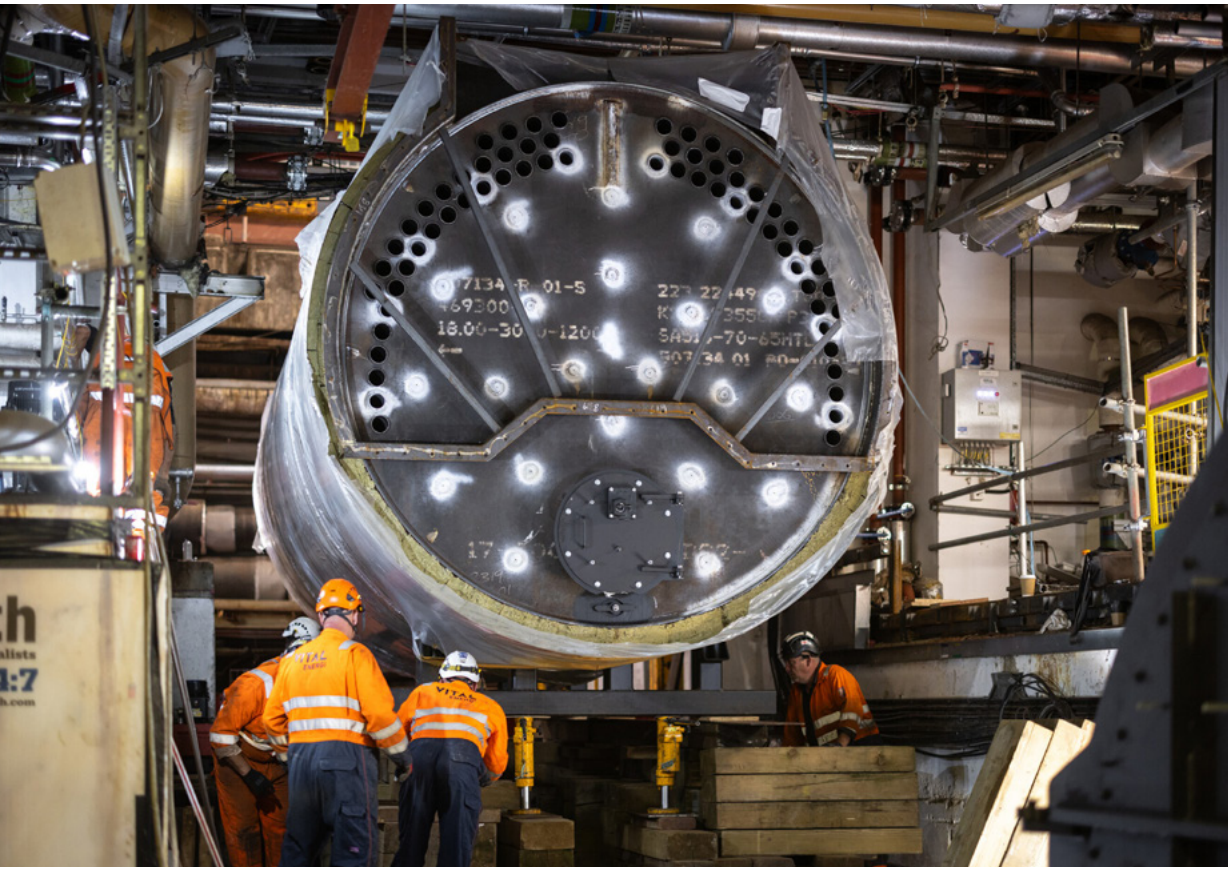
This upgrade will reduce energy consumption by 137,680 kWh per year, reducing Imperial's carbon footprint by 28.5 tonnes per year.

Out of steam

This year, we completed major works to remove the old steam heating network from South Kensington Campus. The move to only use a low-temperature hot water system running at 80°C enables us to run our CHP and top-up boilers more efficiently in the immediate future. This work prepares us for further heat decarbonisation as we reduce our carbon footprint to achieve a net zero estate by 2040. The direct results from the work are:

- Increase efficiency to 87%, from 79%, through extracting more waste heat from CHP engines.
- Significant reduction in NOx emissions, associated with poor air quality and respiratory conditions.
- Projected savings of more than 2,400 tonnes of CO_2 per annum.

One of three boilers being installed in the energy centre, South Kensington Campus



Pilot project with ICT exploring integration of standalone air conditioning units with Building Management System

A pilot project will test the feasibility and advantages of integrating standalone air conditioning (A/C) units with the Building Management System (BMS) environment for optimised control and operational efficiency. It will involve connecting selected A/C units to the existing BMS to enhance centralised control, monitoring and efficiency. The project includes developing hardware and software interfaces, implementing communication protocols for data exchange between the units and the BMS and configuring key data points such as temperature and humidity. The pilot will be rigorously tested to ensure accurate data transmission, effective control and performance improvement.

The findings will be documented, outlining the integration process, performance results, challenges and recommendations for potential full-scale implementation. The project's success could pave the way for broader adoption of BMS-connected A/C units, offering a more efficient and user-friendly building management experience.

Pilot ICTEM Building Management System (BMS) Optimisation Study with ARUP

ARUP's BMS optimisation study, part of our net zero plan, identified 29 potential interventions to improve energy efficiency and reduce carbon emissions by enhancing heating, ventilation and air conditioning control. Imperial's Energy, Engineering and Environment Team is evaluating which actions are practical to implement without disrupting building operations. Early indications suggest that the potential energy savings could exceed those projected in the net zero plan.

Our commitments

Reduce total scope 1 and 2 carbon emissions from energy consumption by 15% by 2025–26 (against the baseline year 2018–19).

We are currently on target due to the work to remove steam from the South Kensington Campus, as well as energy efficiency works including LED installation and solar photo voltaic panels at Silwood Campus.

SPOTLIGHT

Imperial Transition Pathways Explorer developed by the Faculty of Natural Sciences

Over the past two years, Imperial has been developing a carbon calculator to model overall net zero pathways, for us to use as a carbon budget tool as we work towards reaching net zero. The Explorer uses different levers and sub-levers, which can be set at different levels of ambition. The Explorer considers items such as population growth, staff and student travel, building construction and refurbishment, procurement and building energy supply and demand. The application of the Explorer will be as a non-policy prescriptive tool to help with decision-making to help Imperial achieve net zero by 2040.

Development of the Transition Pathways Explorer has been led by Professor Jem Woods (Head of Centre for Environmental Policy), Harriet Wallace (Director of Sustainability), and PhD interns from across Imperial: Victoria Hoare, Qiao Yan Soh, Marcus Annegarn, Emma Richardson, Alperen Yayla and Ali Kawtherani.

Sustainable procurement

This year we have continued our collaboration with our partner consultancy, Action Sustainability, to establish a solid foundation for embedding sustainable procurement practices at Imperial.

2023–24 achievements

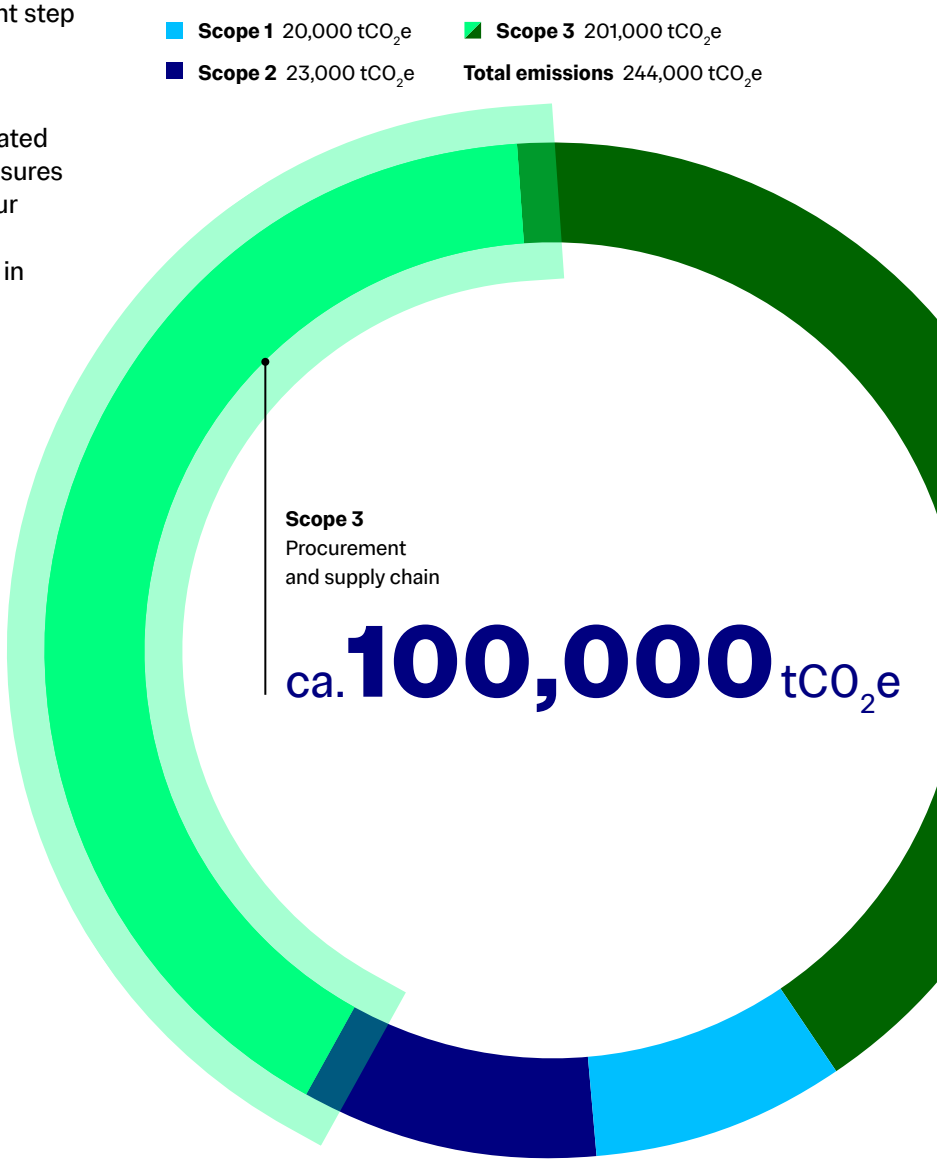
Working with Action Sustainability, we have developed a new sustainable procurement policy, strategy and guidance for all those involved in procurement across the organisation. These new documents were published in spring 2024, marking a significant step forward in our commitment to sustainability.

With the support of Action Sustainability, we have worked on refining the sustainability-related questions in our tendering processes. This ensures our procurement activities are aligned with our sustainability goals, and we are consistently considering environmental and social factors in our decision making.

As part of our new sustainable procurement policy, we have increased the sustainability weighting on all new major contracts to 20% and to 10% for all minor contracts. This adjustment reflects our ongoing commitment to prioritising sustainability in our procurement processes and ensuring that our supply chain aligns with our broader environmental objectives.

In spring, we hosted our first set of sustainable procurement training workshops for staff involved in procurement. These workshops are designed to provide the necessary knowledge and tools to implement our sustainable procurement practices effectively across all levels of spend.

Figure 8: 2023–24 emissions including procurement and supply chain – with ICT, construction and refurbishment, and laboratories



Our commitments

- Major suppliers assessed on environmental policies by September 2024.
- Where policies are weaker, engage with major suppliers by August 2025 to encourage them to put in place a credible net zero plan and more sustainable products and services.
- All suppliers assessed based on environmental policies by August 2026.

Progress on our targets

With the support of the consultancy Action Sustainability and the publication of the new sustainable procurement policy, strategy and guidance, real progress has been made in embedding sustainability into our procurement practices. As a result, we are on course for meeting our 2024, 2025 and 2026 targets.

Looking towards 2024–25

We aim to engage with all our suppliers to better understand their ambitions for reducing carbon emissions and improving other sustainability metrics, and the opportunities to work together to make progress. This initiative will encompass several key projects:

- Directly survey all our major suppliers to gather detailed information on their sustainability programmes and initiatives.
- Collaborate with NETPositive Futures, utilising their Net-Zero Supplier Tool (developed with Nottingham Trent University) to assess the environmental policies of all remaining suppliers at Imperial and support those suppliers to develop their transition plans where needed.
- Create a sustainable procurement specialist role to drive these initiatives and support procurement teams across the university to embed sustainability into their daily work.

This year Imperial will be launching its internal Imperial Carbon Emission Analysis Tool, developed by ICT, which will provide a detailed overview of our procurement activities and associated emissions by department and faculty. This tool will enable colleagues to better understand the carbon impact of their decisions and think strategically about how to reduce it.

Construction and refurbishment

This year we have taken significant steps to define our environmental and social ambitions for our White City Campus development.

Spotlight on White City's 2023–24 achievements

A comprehensive Sustainability Brief was developed and approved and is now being implemented and shared with potential partners and contractors working with us on the site. The brief outlines key performance indicators (KPIs) that the White City Campus programme aims to meet throughout its campus development, setting out clear minimum levels while aiming for more ambitious levels wherever possible. The brief serves as a roadmap, guiding the programme's efforts to embed sustainability into every aspect of the development.

Our commitments include all White City Campus buildings achieving at least Building Research Establishment Environmental Assessment Method (BREEAM) Excellent rating, as well as exploring other sustainability building standards depending on building type such as Passivhaus, Home Quality Mark (HQM), National Australian Built Environment Rating System (NABERS) and the WELL Building Standard. This is to ensure that new developments are not only cutting edge in design and functionality but also set a high standard for environmental performance.

To monitor progress the programme team has implemented a Sustainability Tracker centred around four key themes: climate change mitigation and resilience; health, wellbeing and community; biodiversity and ecology; and sustainability accreditations. The tracker allows for the ongoing assessment of sustainability metrics, real-time adjustments and improvements, ensuring that the projects remain on target to meet the KPIs outlined in the Sustainability Brief.

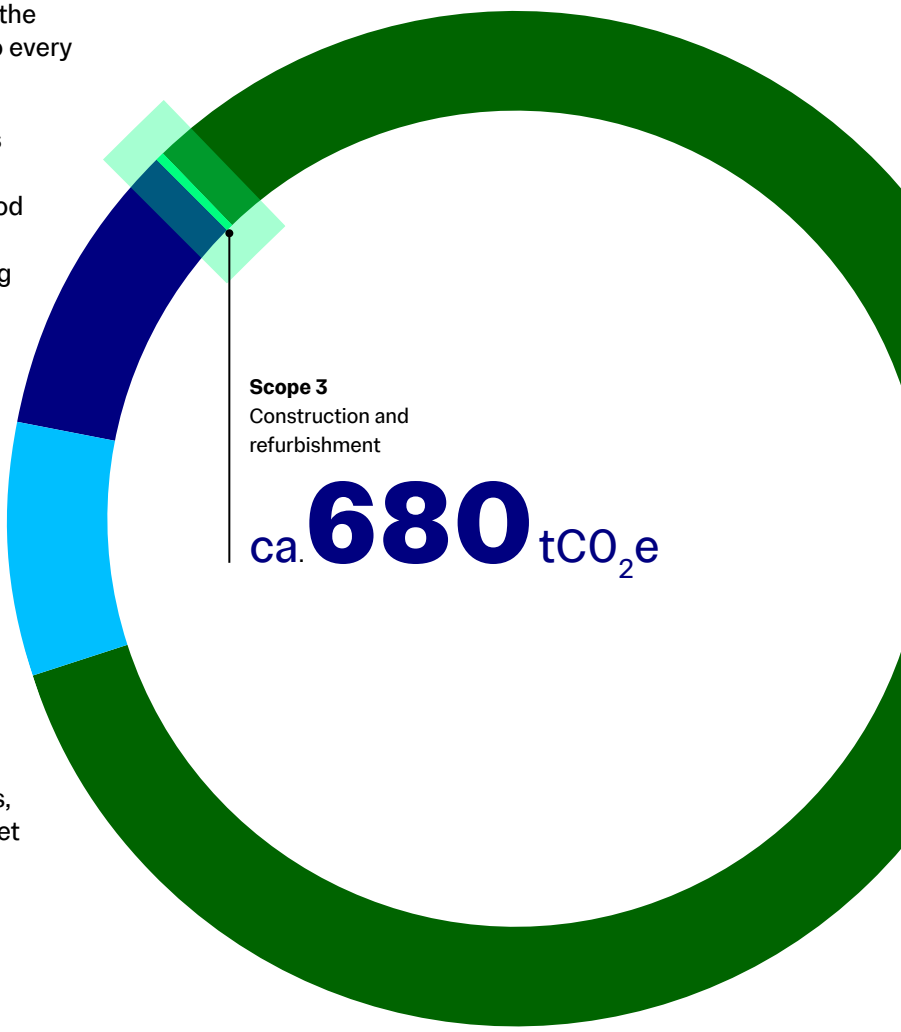
Figure 9: 2023–24 emissions including construction and refurbishment

Scope 1 20,000 tCO_2e

Scope 2 23,000 tCO_2e

Scope 3 201,000 tCO_2e

Total emissions 244,000 tCO_2e



The North Square Garden, White City

White City's carbon pricing and budgeting

Alongside the commitment for new buildings at White City to be fossil free, the team has developed a proposed internal carbon pricing (ICP) framework, along with a masterplan carbon budget to manage residual emissions. This framework will be refined as more plot-specific details become available, enabling the calculation of anticipated carbon offsetting payments and setting precise targets for carbon reduction across the campus. The development of ICP reflects the programme's forward-thinking approach to achieving net zero and supports our ambition for net zero academic buildings.

Our commitments

- All properties in Imperial's investment portfolio to have an Energy Performance Certificate rating of B by December 2030.
- Reduce carbon consumption of properties by 20%.
- All new buildings and major refurbishments (over £5 million) to be BREEAM rated or awarded other certificates from 2023–24 onwards.
- All White City Campus buildings to achieve at least Building Research Establishment Environmental Assessment Method (BREEAM) Excellent rating.

Sustainable labs

With more laboratories getting involved in the Laboratory Efficiency Assessment Framework (LEAF), two labs achieving the highest certification from My Green Lab, and more than 200 lab groups across all Imperial faculties participating in the International Freezer Challenge, it has been a busy and productive year for lab sustainability. We also launched our Sustainable Lab Kit Fund this year.

2023–24 achievements

This year more laboratories were involved in the LEAF scheme, with a total of 30% of Imperial labs now accredited. In 2023–24, 362 labs received a LEAF award compared to 89 accredited last academic year. 298 of those labs achieved bronze, 45 received silver and 19 labs achieved gold status. These awards have contributed to savings of 227tCO_2 annually, utilising the LEAF tool developed by UCL.

LEAF is an environmental accreditation scheme designed to improve sustainability within higher education teaching and research. Participating laboratories are given environmental actions to carry out including across waste, energy and procurement.

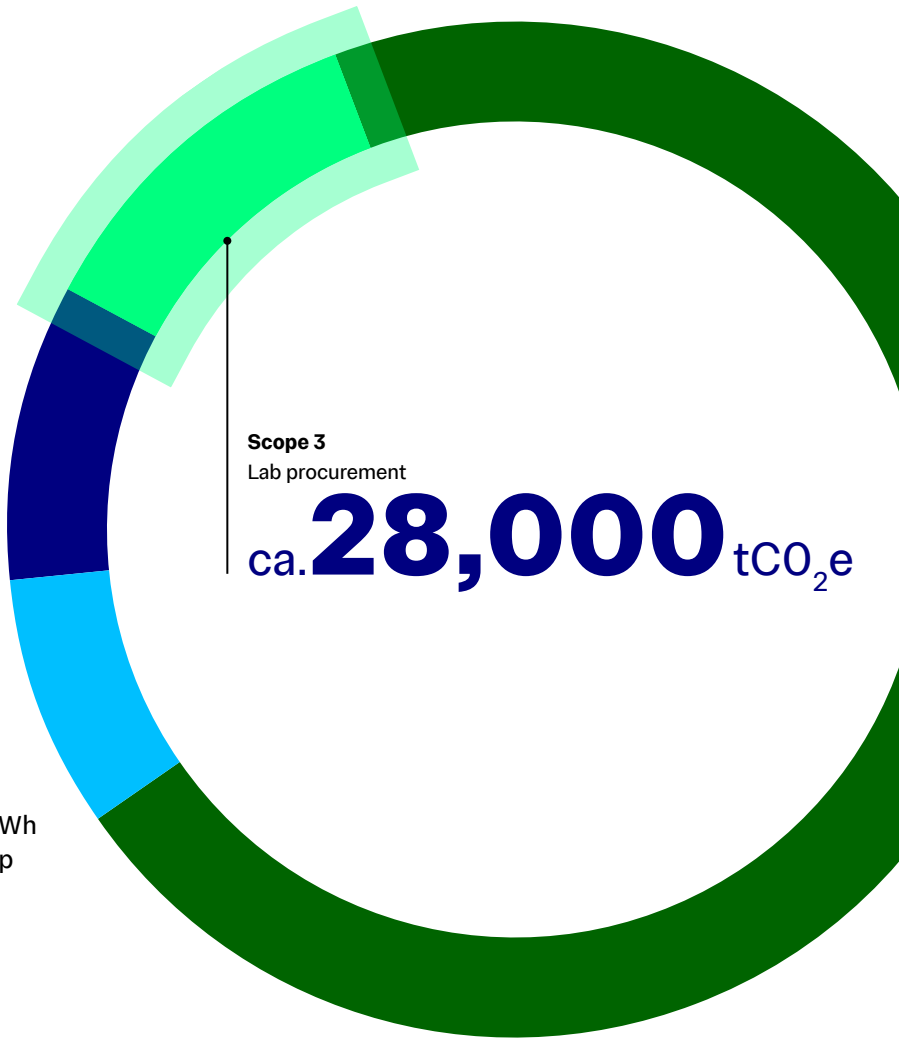
Two labs, one in Medicine and one in Chemical Engineering have achieved the highest Green certification status from My Green Lab with scores of 84% and 99% respectively.

A full energy, condition and usage audit for all laboratory equipment was conducted across seven buildings in South Kensington and Royal Brompton. Following last year's survey across three buildings in Hammersmith and White City labs, all inefficient drying cabinets found in the audit have been replaced and electricity demand has been reduced by 75% for some units.

228 lab groups at Imperial across all faculties participated in the My Green Lab International Freezer Challenge making savings of 283,842 kWh and 58tCO_2 with many submitting labs in the top 20% scores.

Figure 10: 2023–24 emissions including laboratory and research

Scope 1 20,000 tCO_2e
Scope 2 23,000 tCO_2e
Scope 3 201,000 tCO_2e
Total emissions 244,000 tCO_2e



We launched our Sustainable Lab Kit Fund this year, to bridge the financial gap towards buying more sustainable and efficient laboratory equipment. Applications were open to any groups looking to purchase, replace or repair equipment conditional on signing up to lab sustainability schemes. We allocated £50,000 which was distributed to energy, water and waste-saving initiatives.

Progress on our targets

- Increase laboratories engaged in a lab efficiency programme to 50% by summer 2025 and 100% by summer 2026.
- Achieve 10% decrease in energy consumption, water usage and wastage by August 2026.

Looking towards 2024–25

We will continue to raise the profile of our sustainable lab accreditation schemes to encourage more labs to take part. Additionally, we will:

- Relaunch the Sustainable Lab Kit Fund with an increased budget to help drive the shift to sustainable lab equipment as more sustainable and efficient equipment tends to come with a higher initial price tag.
- Utilise the LEAF community of practice for case studies, peer-to-peer learning and faculty updates via the Sustainability Champions Network and the Sustainable Lab newsletter.
- For computational laboratories, trial the new Green DiSC initiative where LEAF is not applicable.
- Utilise the new MyGreenLab app for our Engineering and Life Sciences laboratories.
- Host the first Pathways to a Sustainable Laboratory Supply Chain symposium, an action-oriented workshop seeking to implement plans to minimise scope 3 emissions from the lab supply chain. In collaboration with the Responsible Procurement Group, the workshop will bring together key figures from the higher education research system, funders, suppliers, purchasers, lab sustainability schemes, industry and the NHS to discuss making lab purchasing and supply chains more sustainable.

SPOTLIGHT

Your sustainable lab stories from Engineering and Medicine

Zuzanna Rydz, Structural Laboratory Technician and Sustainability Manager at the Skempton Building's Structures Laboratory, received the first LEAF award within Civil and Environmental Engineering. The award is the latest in a dry lab and workshop setting. Zuzanna implemented key sustainability measures, such as ensuring hydrolytic pumps are only switched on when needed and adjusting IT systems to reduce energy consumption. This achievement highlights the potential for all labs at Imperial to effectively integrate sustainability into lab operations, setting a strong example for sustainable practices across the university.

The Centre for Inflammatory Disease (CID) in the Department of Immunology and Inflammation has become the first lab in the Faculty of Medicine to receive a Gold LEAF Award. After securing a Silver LEAF award earlier this year, CID's ongoing sustainability efforts led to their Gold status including increased reuse of lab materials, reducing work-related travel, working with Estates to optimise ventilation in non-critical areas, better cataloguing of samples and chemicals and promoting the use of existing samples and data in favour of generating new samples. The team has since gone on to achieve a Green My Green Lab award, the highest achievement in the scheme and the first to do so at Imperial. The CID Green Team is led by Dr Kerry Rostron-Barrett, Laboratory Manager and Section Safety Coordinator.

ICT

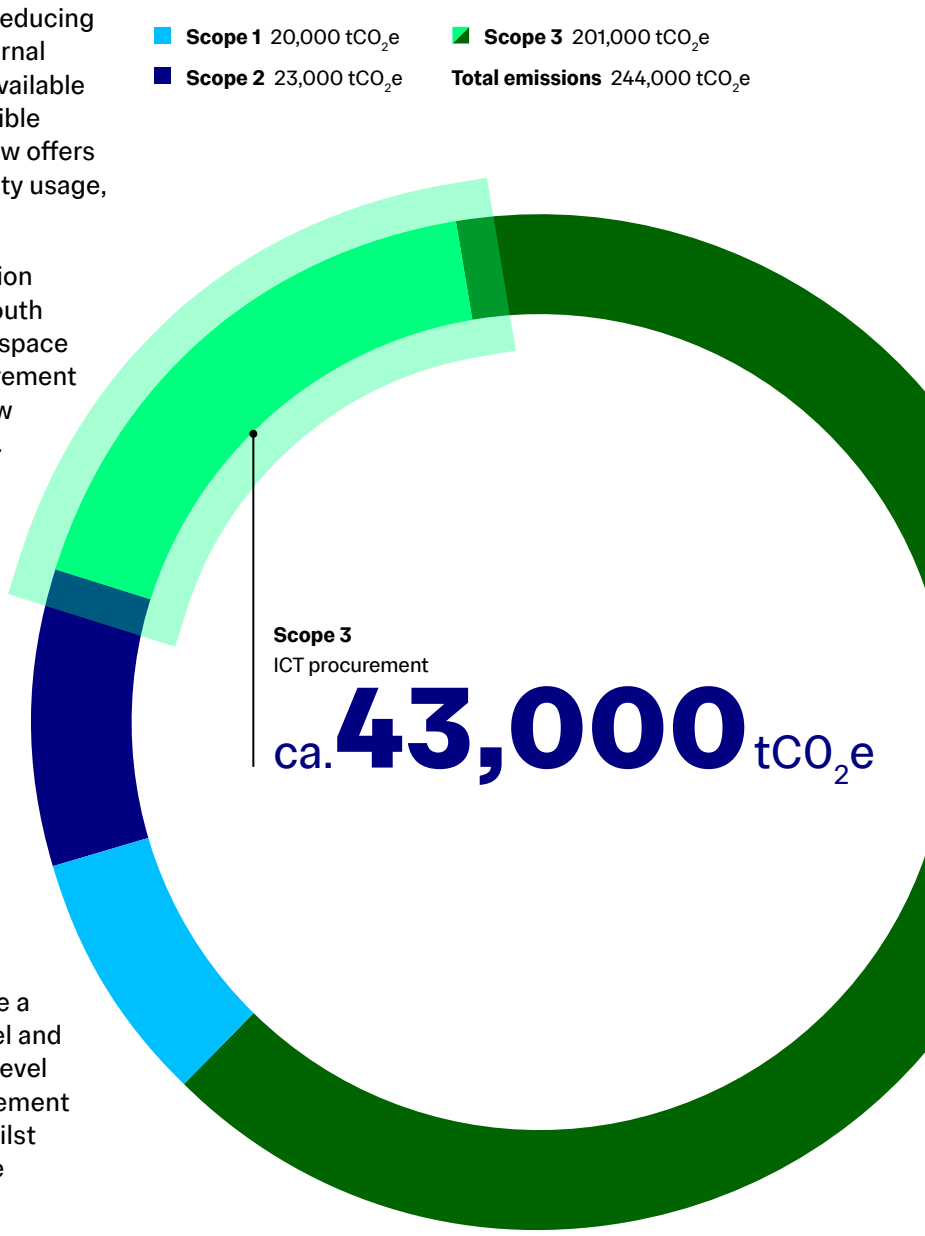
Building on last year's work on the energy consumption dashboards, the team has further developed the internal tool as Imperial's Carbon Emissions Analysis Tool. This will be rolled out across the university next year. A trial energy smart meter initiative is planned, and these two exciting ICT initiatives will help us understand where we can drive down carbon emissions centrally, and help staff make more sustainable decisions.

2023–24 achievements

The Carbon Emissions Analysis Tool is designed to empower staff across faculties and departments to make informed strategic decisions aimed at reducing carbon emissions within our internal and external operations. This will be achieved by making available localised emissions footprints wherever possible using our currently available data. The tool now offers detailed reporting in three key areas: electricity usage, procurement and spend, and business travel.

The electricity usage breaks down consumption by building, faculty and department on our South Kensington Campus apportioned by building space and consumption impact. The scope 3 procurement and spend reporting offers an annual overview of emissions linked to procurement activities. This highlights emissions by faculty and department, using local cost codes to identify where spend has taken place. The tool also ranks suppliers with the highest CO_2 emissions. For travel, the tool outlines business travel-related emissions from bookings made through Imperial's travel management company, Egencia, and expenses – providing both overview and detailed analysis of air and travel emissions.

Figure 11: 2023–24 emissions including ICT



Looking towards 2024–25

We will be rolling out the Carbon Emissions Analysis Tool across the university. This will be a staggered approach, beginning at faculty level and then cascading the tool to the departmental level to review local energy use, travel and procurement habits and associated carbon emissions. Whilst the data give a good indicative picture of the

carbon emissions associated with electricity usage, procurement and business travel, this coming year work will continue to further refine the data inputted to improve the data categorisation with Imperial's Carbon Emissions Analysis Tool.

Next year we will be rolling out a trial energy smart meter initiative in collaboration with Chemical Engineering and Life Sciences. The meters will record the energy consumption of computers and laboratory equipment, returning this information to a centrally managed database. This was set up by ICT to be safe to use over Imperial's Wi-Fi with meters made by TP-Link. Once the system is fully configured and live, further tests will allow the departments to compare energy consumption across different manufacturers of the same equipment to inform more sustainable purchasing decisions.

SPOTLIGHT

Transforming research through computing with ICICLE partnership between Imperial, Intel and Lenovo

Imperial has launched a new supercomputing facility and ICICLE partnership enabling next generation High Performance Computers (HPC) for researchers. It will provide early access to emerging technologies to support all faculties. This will give researchers and their industry partners access to next-generation HPC to help tackle global challenges, with sustainability in mind. Imperial's future high-density computing systems will be water cooled, consuming less power and producing fewer carbon emissions.

Travel

In spring this year, we launched our Sustainable Business Travel Policy. This has now been rolled out, with the Policy in effect for all new travel bookings across the university. Moving forwards, air travel will be monitored every six months to help us work towards a substantial reduction in carbon emissions from air travel, and we will procure a new travel management company in 2024–25.

2023–24 achievements

Our Sustainable Business Travel Policy was launched in an all-staff 'In Conversation' with our President, Hugh Brady. Business travel makes up nearly 10% of the university's carbon footprint and there are realistic changes that could be made to reduce that figure significantly.

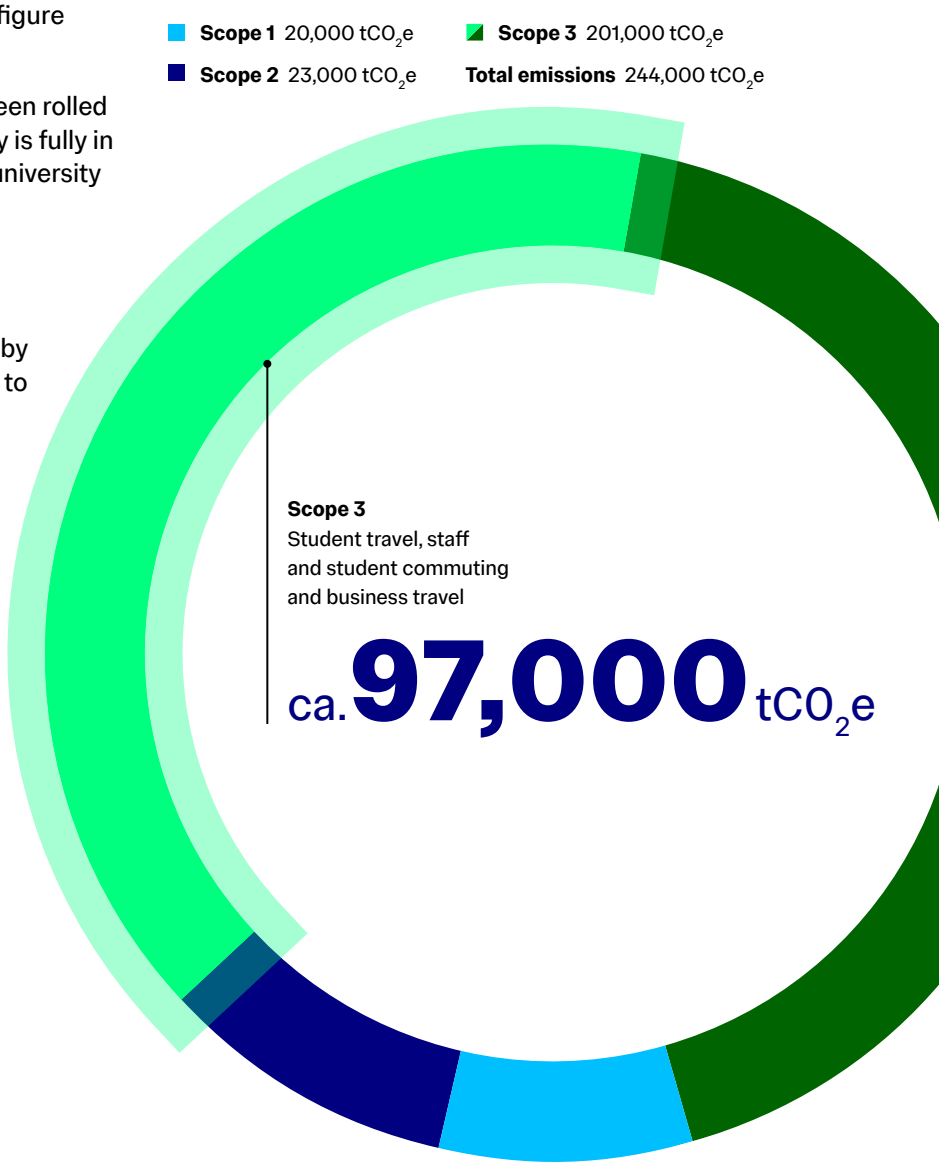
The Sustainable Business Travel Policy has been rolled out with the expectation that the Travel Policy is fully in effect for all new travel bookings across the university by September 2024.

Progress on our targets

- Carbon emissions from air travel reduced by 25% per staff FTE by 2025–26, compared to 2017–18 baseline.

  Our Travel Policy commits to monitoring our air travel every six months to review our position and whether our carbon emissions have been reduced. We will start monitoring the uptake of the travel policy in early 2025, with KPIs set out by the Sustainable Travel Working Group.

Figure 12: 2023–24 emissions including student travel, staff and student commuting and business travel



Looking towards 2024–25

The tender process for procuring a new Travel Management Company for the university will commence in October 2024. Sustainability is one of the three core pillars to ensure the new supplier can incorporate the travel policy principles. The tender process aims to be completed by early 2025.

The Sustainable Travel Working Group monitor the Sustainable Business Travel Policy take up across all faculties and divisions. There are plans to engage with faculties and troubleshoot any problems that arise from implementing the travel policy, from the travel booker, traveller and travel approver perspective.

We will continue to review the Active Travel Action Plan, led by Move Imperial, tracking progress every six months. Priority actions include developing more engagement and communications around active travel to boost take-up of existing campaigns.

The Sustainable Business Travel Policy is now in effect for all new travel bookings across the university

Catering

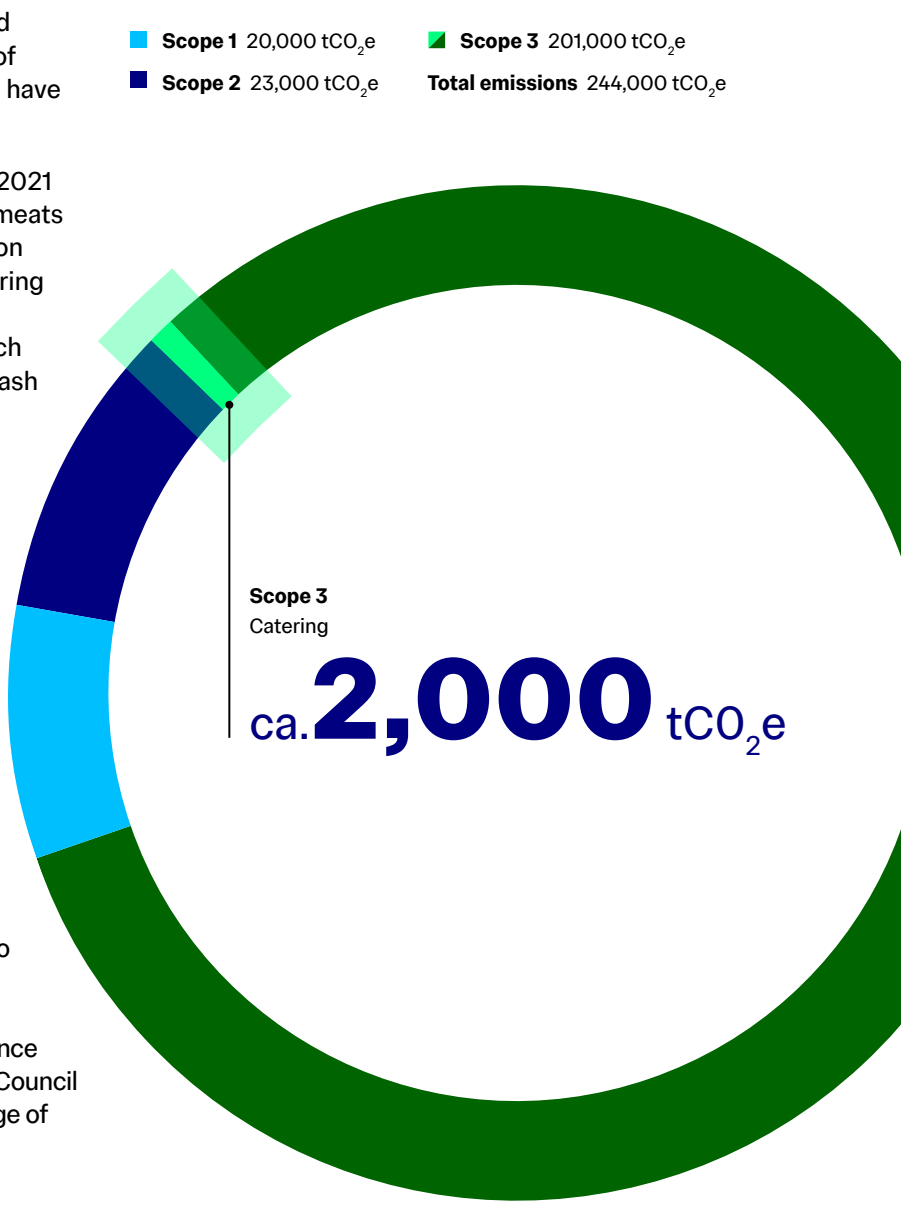
This year the Catering team has been focusing on implementing the Sustainable Food and Drink Policy, in the kitchen and across our wider operations. The team's progress has not been limited to the points within the Policy. Due to the success of embedding sustainability in every part of the process and team, some of the biggest successes have been new ideas coming from every level.

2023–24 achievements

Imperial College London was a finalist for the Sustainability Award at The University Caterers Organisation (TUCO) awards 2024, and a 2024 Green Gown Awards finalist in the Campus Health, Food & Drink Category. This recognised a wide range of sustainability initiatives that Campus Operations have achieved, including:

- An 86% reduction in beef from our menus (a 2021 report found that a complete removal of red meats from our menus could provide a 20% reduction in total carbon emissions against 2019's catering carbon footprint).
- New plate wash and pot wash machines, which use less energy and water. The Meiko plate wash is up to 38% more energy efficient, while the Granuldisk pot wash is projected to save 825,000 litres of water per year.
- Increased visibility on our more sustainable food and drink offerings with a sustainability roundel on screens and posters across campus.
- Procured new napkins and dispensers, which are made from recycled tetrapaks. The dispensers have also led to a 40% decrease in napkin consumption.
- Swapped most of our cleaning products to Biovate, a plant-based supplier for their ingredients and packaging.
- Replaced jugs of oat milk with small cartons in events to reduce wastage, resulting in a 35% reduction in use from 96 litres in 2023 to 62 litres in 2024 in the same period.
- Embedding sustainability into the day-to-day procurement choices such as a Rainforest Alliance certified banana provider, Marine Stewardship Council (MSC) certified fish and an increased percentage of meat coming from higher welfare suppliers.

Figure 13: 2023–24 emissions including food and catering



Progress on our targets

- Elimination of beef: we are ahead of our target of complete removal by 2025–26. Beef is on track to be removed entirely from our menus by October 2024.
- Kitchen operations: we are currently exploring how we can reduce the footprint of our catering operations, looking at feasibility in terms of scale and location.
- Sustainably sourced food: we are continuously reviewing our suppliers and are exploring MSC certification for the Senior Common Room outlet.

Looking towards 2024–25

- By the end of 2024, we aim to increase the plant-based alternatives in our overall catering offer by at least 50%.
- Our event catering will become 'vegetarian by default'.
- Continue working on supplier changes which are discrete but effective such as replacing plastic coffee cup lids with compostable lids, offering seaweed-based packaging as an option at some outlets and replacing wooden serving trays with recyclable cardboard ones for events.
- Install new bins to allow recycling of coffee cups.
- Explore how to make our Senior Common Room outlet fully MSC certified.
- Investigate feasibility of carbon labelling our menus to increase visibility for customers to make informed choices.

Waste and recycling

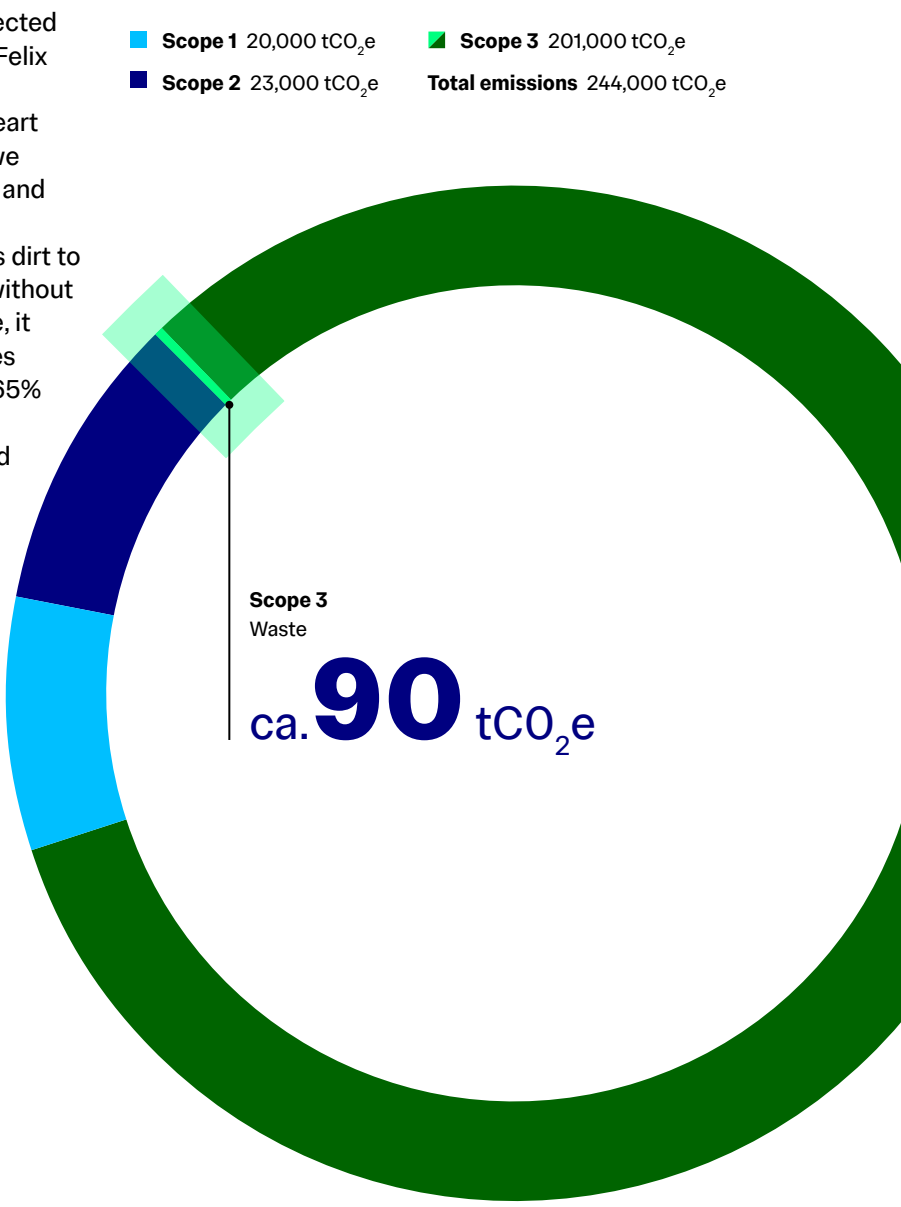
Over the past year, the Waste and Recycling team has built on the trial schemes introduced in 2022–23 and continued to develop SMART targets across Imperial's 18 different waste streams.

2023–24 achievements

Achievements include:

- In July 2024, the team supported student departures from halls of residence. They collected a record 3.1 tonnes of food donations for the Felix Project, a London-based foodbank, as part of their student kitchens scheme. The British Heart Foundation received clothes donations and we worked with Better Reuse, who take bedding and similar, which would otherwise go to landfill.
- Purex Water (a destabilised water which traps dirt to become stable) has enabled some cleaning without the use of chemical products. Created on site, it reduces deliveries and packaging and reduces cleaning operatives' exposure to chemicals. 65% of all buildings now use this process with a rollout plan that is due to complete by the end of 2024.
- Warp-It gets the best value out of waste resources from large organisations, by finding new owners for items that would otherwise need disposal. Imperial's data from Warp-It to date are 170,011kg CO_2 saved, equivalent of 73 cars taken off the road, 46,279kg of waste has been avoided, which is the equivalent to 232 trees, and total savings of £365,227.
- In January 2024, we introduced new general and recyclable waste bins across Dalby Court and Sherfield Walkway which have helped segregate waste properly.

Figure 14: 2023–24 emissions including waste and recycling



Our commitments

- Reduce annual total waste sent to landfill.
- Reduce annual emissions from waste-related activity.
- Increase annual percentage of waste recycled and reused.
- Increase percentage of total waste recycled to 75% by August 2030.

Progress on our targets

- Our recycling levels for waste streams: paper/cardboard, mixed recycling, glass, food, general waste and other is recorded at 85%, exceeding our 75% target.
- Segregated glass collection has increased to 284 tonnes annually across Imperial's campuses.
- We've increased our waste electrical and electronic equipment collection by 17% compared to last year due to increased awareness.

Looking towards 2024–25

- Consolidation of waste suppliers for all the various waste streams to avoid any duplication of supplier and their services, benchmarking and evaluation of services to ensure best value for money and review of new technology initiatives. Action review to be completed by early 2025.
- Support further segregation of waste streams to maximise circular economy and minimise disposal costs. For example, glass collections versus dry mixed recycling.
- Continue to work with our suppliers to move up the waste hierarchy by reducing the volume of packaging which comes onto the campus.

SPOTLIGHT

Imperial food recycling efforts

Our in-house catering operations operate a lean supply chain which closely matches demand. This means that the amount of plate waste and end-of-day waste is very small. The little that is generated at the South Kensington Campus is taken to the Rothenburg Unit located on Aryton Road to the rear of the Sherfield Building. The Rothenburg Unit is a food storage tank that macerates the food into a liquid and then stores it. Once full, the food waste is taken to an anaerobic digestion plant where electricity is generated. Sending food waste for anaerobic digestion contributes to reducing the amount of waste sent to incineration and lowers our carbon footprint. Energy is produced from the food waste sent for anaerobic digestion. Introduced in late 2022, food volumes to anaerobic digestion has increased by 15%.

Biodiversity

Building on the baseline biodiversity audit, which was conducted as a student project for all campuses, the team is working towards developing SMART targets and a biodiversity action plan. We will be working with our new Head Gardener, our partners and our community to make our campuses better environments.

2023–24 achievements

The team is working towards developing SMART targets and a biodiversity action plan. This is supported by establishing a Biodiversity Working Group to advance this. The Working Group comprises a mix of academic experts and operational team members to create an ambitious and realistic project plan. Our contracted landscape gardener, Nurture Landscapes, has submitted some modest suggestions to support biodiversity at South Kensington.

We have begun to develop key partnerships to improve our position on biodiversity with short- and medium-term interventions to approach biodiversity net gain and explore opportunities to create outstanding natural spaces.

We expect to recruit our first permanent, in-house Head Gardener in autumn 2024. The key purpose of the post is to set and agree ambitious but achievable projects and targets to improve biodiversity, and deliver a greener urban environment, starting with the South Kensington Campus. The role will develop, manage, protect and enhance biodiversity at Imperial.

Our commitments

- Increase area of roof, walls and spaces with improved biodiversity.
- Increase number and variety of wildlife species recorded on our campuses.
- Increase number of trees and drought-resistant plants on campuses.

Our target for 2025–26 is to implement a Biodiversity Action Plan with our partners, with progress verified independently. The Action Plan is currently running behind schedule but will be developed by the end of 2024.

Looking towards 2024–25

With the new Head Gardener, Biodiversity Working Group and contractors, we will apply our academic and operational strength to develop a baseline assessment, Biodiversity Action Plan and introduce sensible interventions to make our campuses better environments that are more biodiverse and resilient.

We aim to deliver five tactical ‘grey to green’ interventions with the partnership support at South Kensington this year. We intend to work with our partners and our community to uncover opportunities for Prince’s Gate Garden (‘the Secret Garden’) space. The aim is to develop a better amenity for all, centred in biophilic principles.

An ornamental pond in Silwood Park Campus has been restored to attract insects and wildlife

Case study: Silwood Park Campus restores ornamental pond

A neglected ornamental pond on Silwood Park Campus has been brought back to life thanks to a collaborative effort championed by Emma Sharp, Project Manager for the Faculty of Natural Sciences.

Noticing the pond's deteriorating state, Emma enlisted the help of her colleagues. The Building Operations and Maintenance team quickly repaired leaks by relining and repointing the pond, which immediately began to show signs of improvement.

Emma then consulted with colleagues in the Department of Life Sciences at Silwood Park, whose specialism is monitoring biodiversity, and they have conducted successful monitoring on the campus for decades. They provided a list of native plants that would thrive in the pond. With the help of Pete, the campus gardener, they planted tall species of Flowering Rush, Common Mare's Tail, Yellow Iris and Lesser Bullrush, and floating species White Waterlily and Floating Heart. The pond soon became a vibrant habitat, attracting various insects and wildlife.

Emma praised the project as "a lovely little team effort," expressing her gratitude to all involved. This initiative is one of many ongoing efforts to enhance the campus environment this year.

Water

We are committed to reducing our water consumption and have made significant steps to improve water conservation and ensure sustainable water supplies. We will complete our water benchmarking work and will implement SMART water targets across Imperial campuses.

2023–24 achievements

To improve our water sustainability, we have been working with ADSM's AquaFund scheme from 2018 to 2023. Through the scheme, the university installed smart devices on water meters, fixed leaks, addressed maintenance issues, introduced water-saving technologies, and updated its water billing systems, all of which have reduced water costs. These efforts have provided more detailed data on water usage, allowing us to identify further opportunities for savings.

This data-driven approach has led to timely investigations into high water consumption, enabling the swift resolution of faults and leaks, which has helped to keep both consumption and costs low.

Our commitments

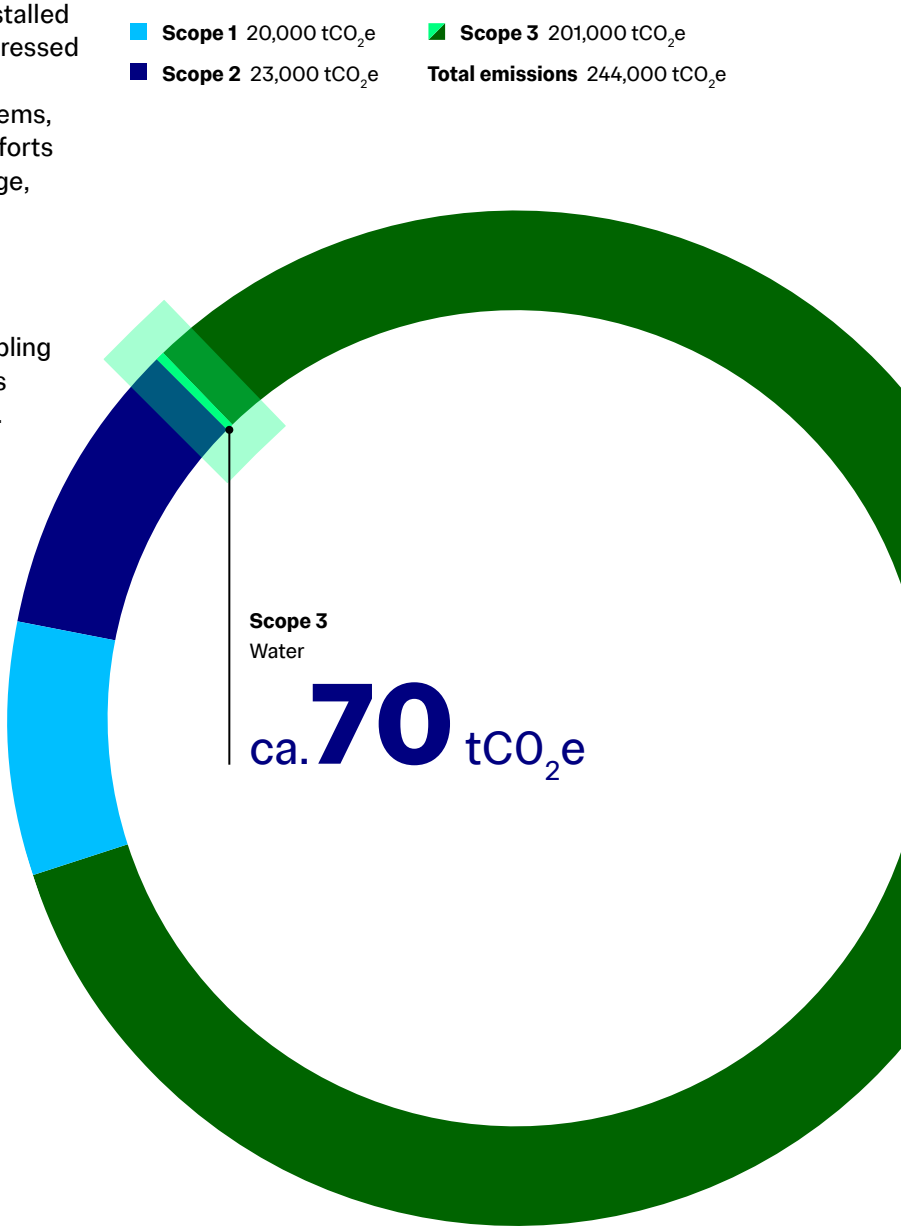
- Reduce annual water consumption per person.

Looking towards 2024–25

Over the next year, the Estates team will:

- Complete water benchmarking for a STEM university.
- Establish SMART targets for water use across the Imperial estate.

Figure 15: 2023–24 emissions including water



Engagement

This year we've launched our Staff Sustainability Champions Network, Green Impact – an office-based sustainability initiative – and doubled our annual Sustainability Week to a Sustainability Fortnight.

2023–24 achievements

Sustainability Fortnight

Imperial's annual celebration of Sustainability took place from 19 February to 1 March 2024. Organised by the Sustainability Hub, Imperial College Union and the Global Challenge Institutes, this year's Sustainability Fortnight centred on the themes of climate action and justice, sustainable campuses, consumption, and the impacts on climate.

During the fortnight, staff and students joined in exciting workshops and interactive events, as well as attending lectures and learning about what Imperial is doing to reduce its own environmental impacts and how people can get involved.

Green Impact

We launched the Green Impact programme in November 2023. A toolkit with actions to complete, staff take part in teams to improve sustainability at Imperial and at home. The initiative is run by SOS-UK. Since our launch, we've had 27 teams participate across all seven campuses. 3 teams have achieved Bronze, 4 Silver and 4 teams achieved a Gold award. 526 actions were taken, with projects on travel, energy, procurement, waste and more.

Staff Sustainability Champions Network

In February 2024, we launched our Sustainability Champions Network with socials taking place in South Kensington, White City and Silwood Park Campuses.

As part of the Sustainability Champions Network, members are active participants in mobilising sustainable practice across the university. They promote awareness and understanding of sustainability practices in their faculty, departments and teams; work with department members to identify and implement sustainable initiatives; and share successful sustainability practice to inspire positive change across the university.

SPOTLIGHT

Fighting fast fashion: swap event

After a successful Clothes Swap during Sustainability Fortnight, where the team managed to collect over 300 clothing items, the team hosted a second swap event. Donation bins were set up around campus to accumulate credit to be used on the day, as well as on-the-day donations. All leftover stock and profits were donated to Traid.

Climate and Sustainability Youth Summit

In the middle of COP28, on 2 December 2023, Imperial hosted the Climate and Sustainability Youth Summit. The Summit showcased the 2023 Youth Proposal, documenting potential solutions to net zero in the UK. Attendees shared their views in thought-provoking discussions and interactive workshops and had the opportunity to connect with like-minded individuals passionate about climate action and sustainability.

Sustainable Halls campaign

This year, the Sustainable Halls campaign, run by Students Organising Sustainability-UK (SOS-UK), engaged Imperial students on environmental and social sustainability, introduced life-long sustainable living habits and reduced energy usage in our halls of residence.

The campaign builds students' foundation of sustainability knowledge and carbon literacy, focusing on enhancing their skills and experience, mobilising them to lead on sustainability initiatives. Throughout the year, engagement activities communicated practical advice to achieve quantifiable energy, waste and water reductions.

For 2023–24, Imperial achieved:

- 494 students engaged in the campaign (15.6% of total residents)
- 63 students entered our climate quizzes
- 114 participated in our online competitions, masterclasses and webinars
- 310 engaged in our campus visits

President's Award for Excellence in Sustainability

The Staff Recognition Awards provide an opportunity to recognise and celebrate Imperial's staff and students for their vital contributions to the university's community.

This year saw the introduction of the President's Award for Excellence in Sustainability. The award recognises an individual or team who has delivered a specific project or initiative, or embedded everyday good practice that significantly contributes to the enhancement of sustainability at the university, whilst demonstrating commitment to Imperial's values and behaviours: Respect, Collaboration, Integrity, Innovation and Excellence.

This year's individual winner was Sharron Stubbs, Faculty of Medicine, while the team award went to the CID Green Team, Centre of Inflammatory Disease (made up of: Kerry Rostron-Barrett, Lyndon Costa, Alice Denton, Neil Galloway-Phillips, Christina Malaktou, Stacey McIntyre and Kassandra Vezyrgianni).

Winners of the President's Award for Excellence in Sustainability at the 2024 Staff Recognition Awards, CID Green Team

Our commitments

- Increase the number of staff and students attending sustainability training and events.
- Monitor staff and student perception of Imperial's sustainability practices and plan to increase in satisfaction.
- Monitor the impact of staff and students actively participating in sustainability networks and initiatives to create more environmentally friendly campuses.

Dr Sharron Stubbs accepting her Award for Excellence in Sustainability at the 2024 Staff Recognition Awards

Progress on our targets

- **Green Impact**

The programme will restart in October 2024 with the toolkit aligning to our Net Zero plan, Business Travel Policy, Procurement Policy and the Concordat for the Environmental Sustainability of Research and Innovation Practice. We aim to have all academic departments engaged with a team, as well as an increase in Professional Services teams.

- **Sustainability Week/Fortnight**

We continue to host annual Sustainability Weeks to engage our staff and student community in sustainability initiatives and amplify Imperial research.

- **Sustainable Halls campaign**

We currently do not set engagement targets for the Sustainable Halls campaign but are performing well in the national league. This is being reviewed this year by our Sustainability Initiatives Coordinator.

- **Climate literacy staff training**

In Spring Term 2024 we continued to run staff climate literacy sessions, with PhD students delivering the course content. Next year we plan to continue to run the in-person course which covers a background to climate science, climate change and mental health, mobilising individual action as well as what Imperial is doing and how staff can get involved to make change.

Looking towards 2024–25

Staff mandatory sustainability induction course

Next year we aim to launch Imperial's staff sustainability induction module, using the course content from the climate literacy course.

Engagement events

Alongside delivering Sustainability Week 2025 and running SOS-UK's Sustainable Halls campaign for another year, we are planning to provide further opportunities for staff and students to get involved in sustainability initiatives. This will be through training, local competitions and events to share best practice, enable peer-to-peer learning and tackle larger-scale challenges.

Imperial College Union (ICU)

London Student Sustainability Conference (LSSC)

In February 2024, Imperial hosted the London Student Sustainability Conference, led by Stephanie Yeung (ICU Deputy President Finance & Services). This event featured keynote speeches from Harriet Wallace (Imperial's Director of Sustainability) and Omnia El Omrani (Climate Change & Health Junior Policy Fellow at Imperial). There were three student presentations from Imperial at the conference, with PhD student Yasmin Baghdadi winning 'Most Effective Visuals' in the Poster category.

Students by Dangoor Plaza, South Kensington Campus

Approximately 220 people attended the event in person with almost 120 joining online. The event also included 40 volunteers and 14 staff members from various London universities, who formed the steering group organising the conference.

Looking towards 2024–25

In 2025, the seventh LSSC will take place at another London host university and ICU will continue to collaborate in its delivery. We have been expanding to run idea-based hackathon events to gather and share student ideas around sustainability. ICU supported the first session at Kingston University in June 2024, which focused on the theme of e-waste, and a second event on the same theme is planned for Autumn 2024.

Union Sustainability Strategy

In 2023–24, ICU has worked on developing the Union Sustainability Strategy 2024–28, setting out how ICU will contribute to a more sustainable and resilient future. The strategy process involved a consultation with staff and students, and engagement with Imperial's Director of Sustainability. Over the next four years, the strategy will be implemented with established implementation principles set out for annual review to allow for opportunities for review, assessment and action.

Looking towards 2024–25

In Autumn 2024, ICU will launch its Union Sustainability Strategy, focusing on the university, Union and students. The strategy aims to hold Imperial accountable for sustainability commitments, deliver Union services with sustainability at its core, and empower students to engage with sustainability at all levels.

This year's actions include conducting a carbon emissions audit to assess our baseline and participating in the SOS-UK Green Impact Students' Unions programme to benchmark progress against the sector. Christian Cooper, ICU Deputy President Clubs & Societies, will lead the development of a sustainability framework for student groups. Additionally, sustainability will be integrated into volunteer training, with potential funding for student sustainability projects.

Green Careers Fair

Following the success of the inaugural Green Careers Fair in 2023, in February 2024 more than 450 people attended the second annual Green Careers Fair, organised by student societies. The event brought together 25 companies from across the sustainability industry to showcase

the range of green career opportunities available to students. This event was sponsored by Sustainable Imperial and led by a number of student groups including Environmental Society, Climate Entrepreneurs Club, Engineers without Borders, Chemical Engineering Society and Imperial+.

Looking towards 2024–25

ICU will continue to support our student groups to run a third Green Careers Fair. The event is planned to take place in autumn 2024 and our student groups are planning engagement with students across Imperial and companies.

Union Awards – Sustainability Award

In May 2024, ICU's Union Awards introduced a Sustainability Award to recognise student efforts in sustainability. Notable nominees included the Green Careers Fair event, student campaign groups Imperial Climate Action and Plant Based Universities, and individual contribution Simran Patel, as Felix Environment Editor and Ethics & Environment Campaigns officer 2023–24. The award went to the Green Careers Fair for their successful event and broad engagement with students and companies.

Environment and Sustainability Forums

ICU held three Environment and Sustainability Forums, chaired by Stephanie Yeung; to facilitate conversation and ensure ICU represents students' views on sustainability. The October session introduced sustainability at the Union and gathered feedback on the Union Sustainability Strategy. The November forum focused on green careers and necessary skills, while January's session centred on Veganuary, with input from Plant Based Universities. Starting next year, these forums will be held monthly to discuss curated themes and update on sustainability efforts with the incoming strategy.

Imperial College Road, South Kensington Campus

Research and education

This year saw the launch of the postgraduate Pioneer Awards, and the Laidlaw Scholars Leadership and Research Programme for undergraduate ethical leaders. Our sustainability research and partnerships portfolio has continued to thrive in 2023–24, with both community and worldwide impact.

Imperial Zero Pollution launched a new **postgraduate student awards scheme** for 2024: **the Pioneer Awards.** The scheme is for postgraduate student (PG Taught, MRes and PhD) innovators, researchers and pioneers who are pushing the boundaries of the Transition to Zero Pollution (TZP) at Imperial College London. The Awards included an £800 prize, one for each submission category, and presentation in a research showcase event on 9 July 2024.

There were five submission categories for the awards, corresponding to the five main research themes of the TZP initiative: Zero Pollution Mobility, Urban Ecosystems People & Planet, Sustainable Resources & Zero Waste, Resilient, Regenerative & Restorative Systems, and Emerging Environmental Hazards & Health.

This year saw the launch of a new undergraduate opportunity: the **Laidlaw Scholars Leadership and Research Programme**. This fully funded sustainability leadership and research programme is designed to train the next generation of ethical leaders and equip participants with the necessary skills and perspectives to excel in their chosen fields and make a meaningful impact on society's most pressing social and environmental challenges.

The selected 25 scholars from all faculties will benefit from a unique combination of hands-on research and leadership experiences, mentoring and personal development opportunities. The programme is focused on the Sustainable Development Goals, and starts with summer research projects related to sustainability, where scholars are supervised by academics.

Our sustainability research portfolio

Through our partnerships, we are using our expertise and research to accelerate a sustainable transformation for industry and society.

The **Bezos Centre for Sustainable Protein** launched in June 2024. The centre will develop innovative and evidence-based solutions through the design, delivery and commercialisation of alternative food products that are economically and environmentally friendly, nutritious, affordable and tasty. The centre, spanning seven Imperial academic departments, will advance research into precision fermentation, cultivated meat, bioprocessing and automation, nutrition, and AI and machine learning.

Students walking across Dangoor Plaza, South Kensington Campus

The **Hitachi Centre for Decarbonisation and Natural Climate Solutions**, launched in 2023, published its first public output in March 2024 on biodiversity and ecosystem function. The briefing note found that UK policy needs to focus on growing ecosystems, not just planting trees, by increasing the area of diverse forest, incorporating priority species into its environmental plans and designing metrics that reward connected, resilient, self-sustaining ecosystems.

The **Rio Tinto Centre for Future Materials** will develop sustainable routes to transform current mineral extraction approaches to support the global transition from fossil fuels to renewable energy. The centre has started work with two workshops with international partners to determine the first research grand challenge and work programme to address that challenge. The centre will officially launch later in 2024.

The **Tata Steel Centre for Innovation in Sustainable Design and Manufacturing** will develop innovative new manufacturing processes to help decarbonise steel production.

Partnerships

Imperial has designed a framework, the **Imperial Zero Index**, to assess annually how its energy industry collaborators are performing in their commitment, strategy and operational efforts towards net zero. We expect to disengage from academic and research collaborations with companies that score poorly against these criteria. The Index will also be used to inform our investment decisions.

We have implemented an 'Engagement for Change' approach and pledged to only carry out research with fossil fuel companies where: that research is strongly aligned to the decarbonisation of their business; and only if the company demonstrates a credible strategic commitment to achieving net zero by 2050. The ambition of the Index is to increase accountability and ensure academic engagements at Imperial and beyond are with partners who want to enact a genuine transition, preventing potential 'greenwashing'.

SPOTLIGHT

New health and wellbeing research partnership

The Environmental Research Group (ERG), home to Imperial's air pollution research, Hammersmith & Fulham Council and Imperial College Healthcare are launching a three-year partnership to collaborate on research aimed at improving the health and wellbeing of residents in the Borough of Hammersmith & Fulham, and beyond. Imperial's researchers will provide expertise in air quality research, modelling and analysis for the partnership and contribute to the development of air quality improvement plans and policies. The collaboration will include public engagement work (such as educational campaigns and citizen science initiatives), seminars, joint funding bids and workshops and training sessions for H&F staff, residents and stakeholders.

Get involved

Be part of our Sustainability Champions Network

Join a Green Impact team and make real environmental change in your department.

Keep up to date with the latest sustainability news and events across Imperial with our Sustainability Bulletin newsletter.

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Appendix

The appendix outlines further information on Imperial's 2023–24 carbon footprint, analysis and year-on-year trends. **You can read our full methodology and data sources on our website**.

Figure 16: Imperial's total scope 1 and 2 emissions per year

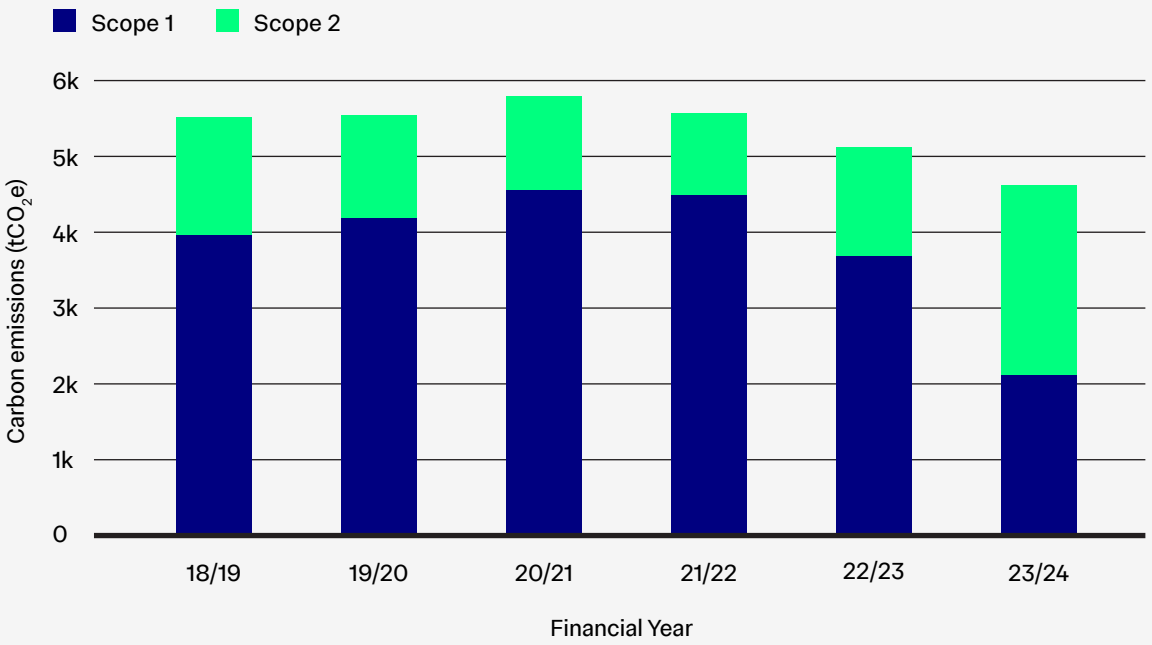
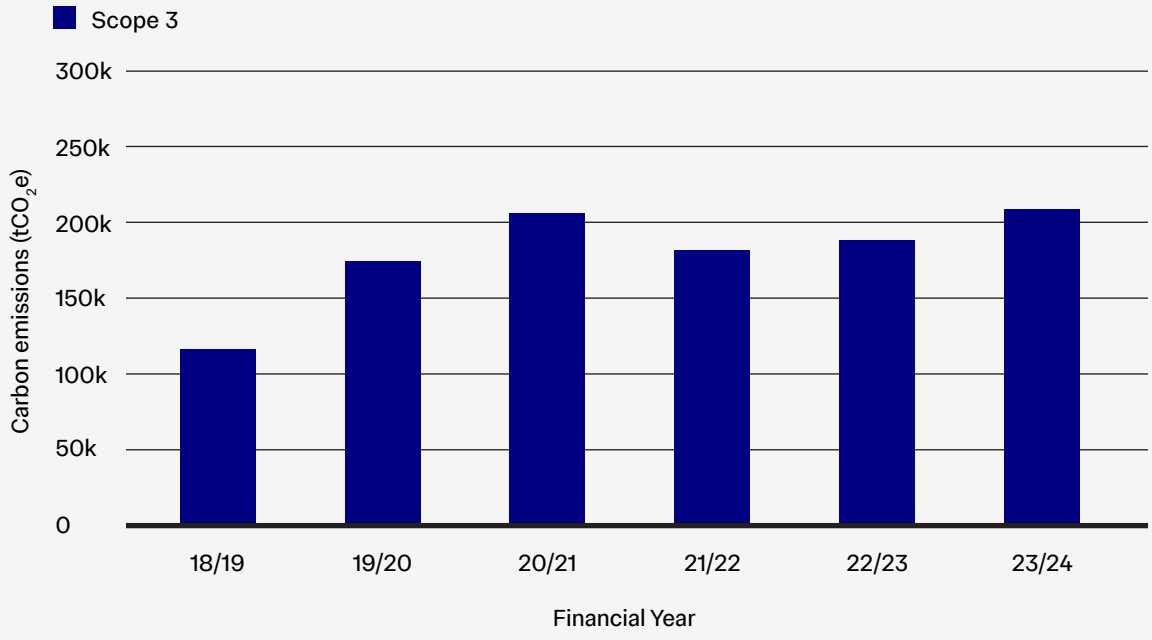


Figure 17: Imperial's total scope 3 emissions per year



Scope 3
Procurement and supply chain

Procurement and supply chain includes all upstream emissions as a result of goods and services purchased.

Table 3: Breakdown of Imperial's 2023–24 procurement and supply chain categories and their CO_2 emissions.

Category	Subcategory	Emissions 23/24 (tonnes CO_2e)	Percentage of total emissions (%)	Emissions 22/23 (tonnes CO_2e)	Percentage increase/ decrease	
IT services	Audio visual and multimedia supplies and services	683	0.68%	873	-22%	
	Library services	9,287	9.29%	9,072	2%	
	Computer supplies and services	32,647	32.67%	33,934	-4%	
	Printing, reprographics and photocopying	17	0.02%	24	-31%	
	Telecommunications	104	0.10%	177	-41%	
	Stationery and office supplies	0.00	0.00	0.00	0.00	
Laboratory/research	Materials	3,719	3.72%	775	380%	
	Equipment	24,596	24.61%	23,390	5%	
	Services	0.00	0.00	0.00	0.00	
Business services	Library services	609	0.61%	678	-10%	
	Technical services	11,915	11.92%	8,484	40%	
	Insurance and legal services	684	0.68%	451	52%	
	Financial services	76	0.08%	123	–38%	
	Education services	782	0.78%	769	2%	
	Miscellaneous services	931	0.93%	860	8%	
Estates	Health, safety and security	607	0.61%	503	21%	
	Estates and facilities operations	5,947	5.95%	7,006	-15%	
	Fees	2,825	2.83%	1,713	65%	
Food and catering	Food	729	0.73%	673	8%	
	Beverages	38	0.04%	42	-9%	
	Equipment and services	1,330	1.33%	1,664	-20%	
Construction		681	0.68%	469	45%	

Category	Subcategory	Emissions 23/24 (tonnes CO_2e)	Percentage of total emissions (%)	Emissions 22/23 (tonnes CO_2e)	Percentage increase/ decrease	
Furniture		622	0.62%	448	39%	
Other products		671	0.67%	411	63%	
Paper products		349	0.35%	285	22%	
Medical supplies		40	0.04%	44	-8%	
Capex		54	0.05%	36	50%	
Unclassified		0.00	0.00	0.00		

Business travel

Business travel refers to the upstream emissions as a result of all travel undertaken by staff, students and guests for business purposes. We found a total of **ca.34,473 tCO_2e** were emitted. This is an increase of 9,000 tCO_2e or 35% compared to 2022–23.

Figure 18: 2023–24 business travel emissions per mode of travel

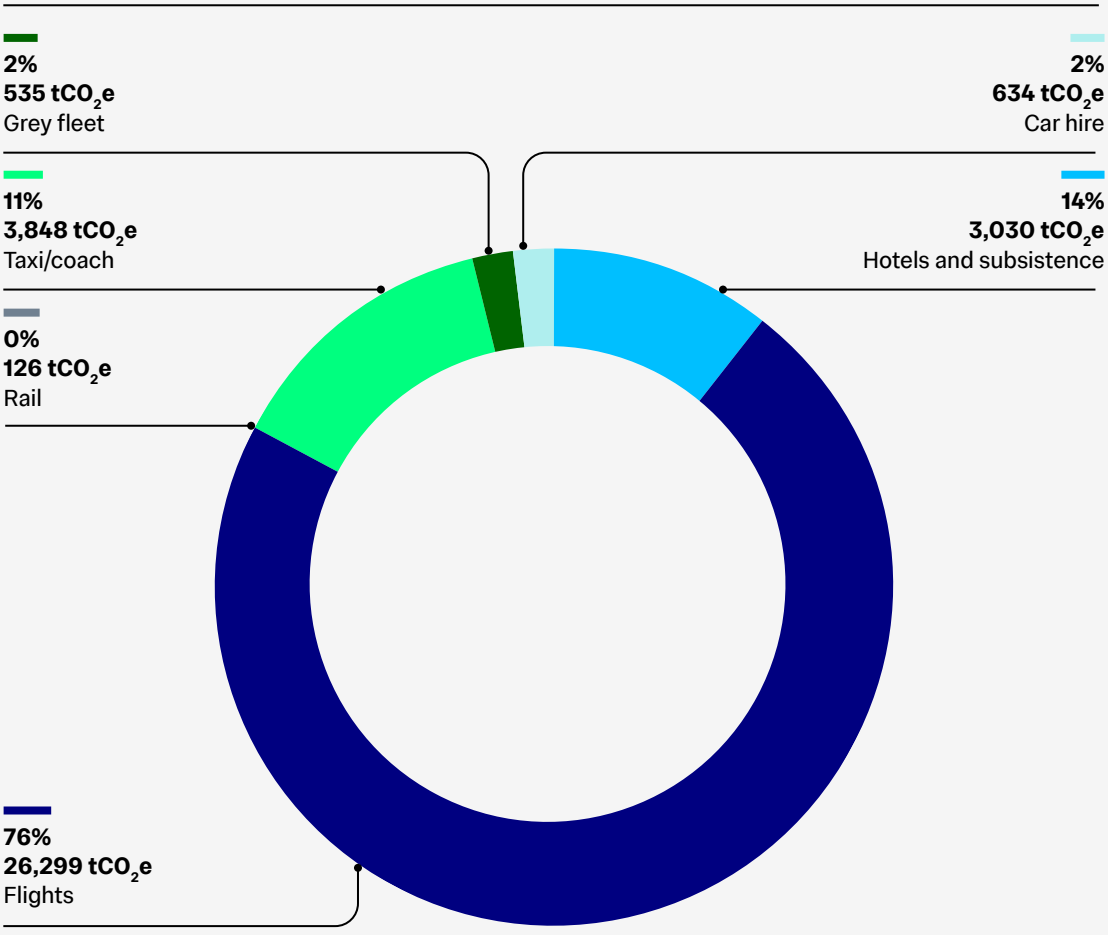


Figure 19: Comparison of 2022–23 and 2023–24 business travel emissions per mode of travel