NOTTINGHAM TRENT STUDENTS' UNION

Carbon Report

2023 - 2024

Carbon Emissions Report

This is Nottingham Trent Students' Union (NTSU) annual carbon emissions report, covering all aspects of NTSUs carbon footprint across scopes 1, 2 and 3.

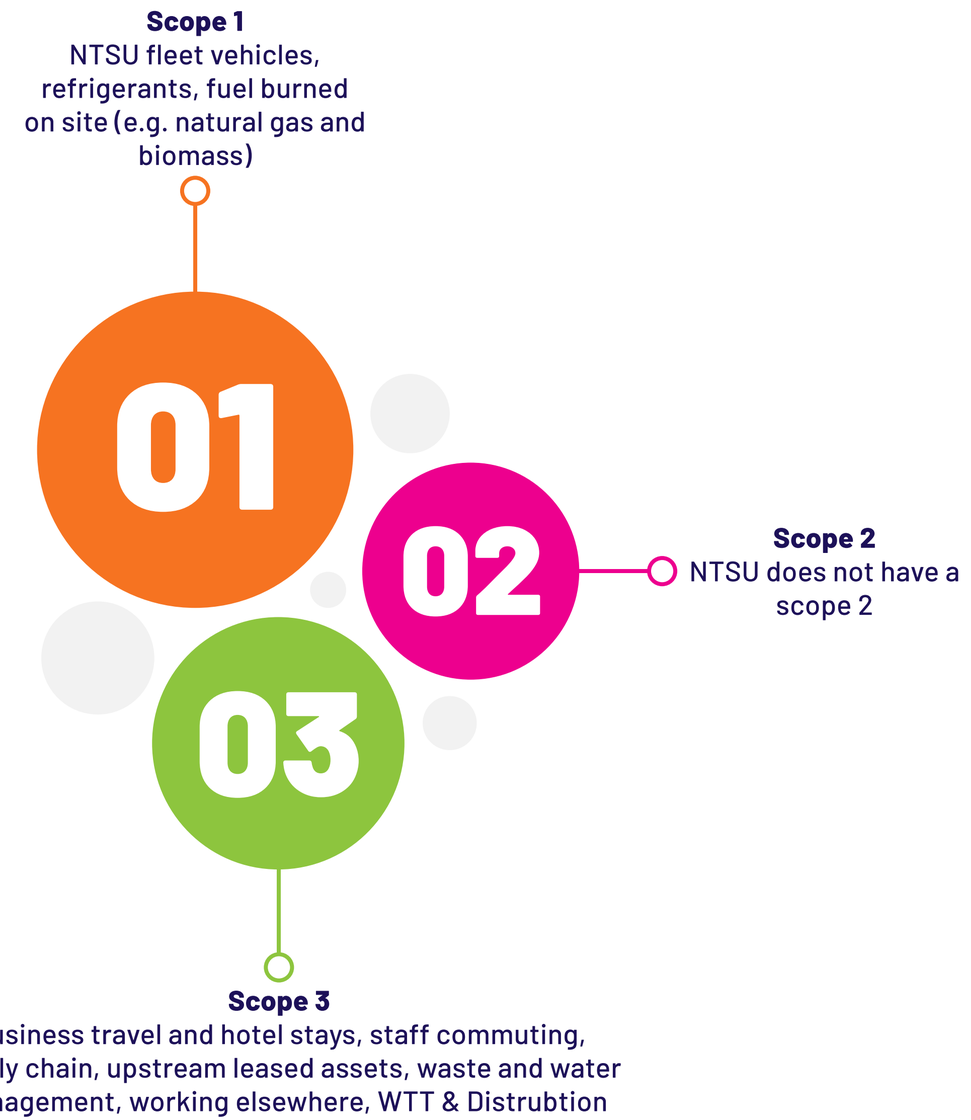
Carbon Emissions Breakdown

Scope 1 – direct emissions
This includes emissions from an organisations vehicle fleet and fuel burnt on site.

Scope 2 – indirect emissions of 'purchased' energy
These are emissions such as electricity and district heat.

Scope 3 – indirect 'other' emissions.
These arise from sources outside of an organisations control, but that are associated with their activities.

**Unlike other organisations, NTSU does not have a 'Scope 2'. Our buildings are leased from our partner organisations, Nottingham Trent University (NTU) and United Partnerships Programme (UPP), so although we use energy and heat on a daily basis, we don't have direct control over the emissions sources. As a result, these fall into our scope 3.*



Our Net Zero Target

NTSU has a target of achieving net-zero carbon across all three scopes by 2040, as committed to in our sustainability strategy. 2023/24 is our third year of carbon reporting and builds upon findings from our baseline year (2021/22) and following reporting year. We have not implemented any reduction activities, so this footprint represents another "business as usual" year of operations.

It should also be noted that our baseline year (2021/22) was still functioning under the restriction of the Covid-19 Pandemic and therefore we were not operating under "business as usual" activities, therefore it is assumed our baseline data is lower than what would have been recorded in a usual year. When considering our progress and trends that are visible this should be taken into account.

We are currently in the process of setting interim reduction targets on our journey to net-zero. We are conscious to support towards global targets during this process, such as those set in the Paris Agreement, as well as national targets within GOV UK's Net Zero Strategy, and local targets within Nottingham City Council's Net Zero Framework. We are also taking time to consult with our stakeholders and interested parties to gauge what wider support is available for us. Our net zero pathways have not yet been developed however this will be built into our Sustainability Strategy and Strategic Plan. As we are still early in our reporting journey, we are also early in our reduction pathways, updates and progress will be witnessed in future reports.

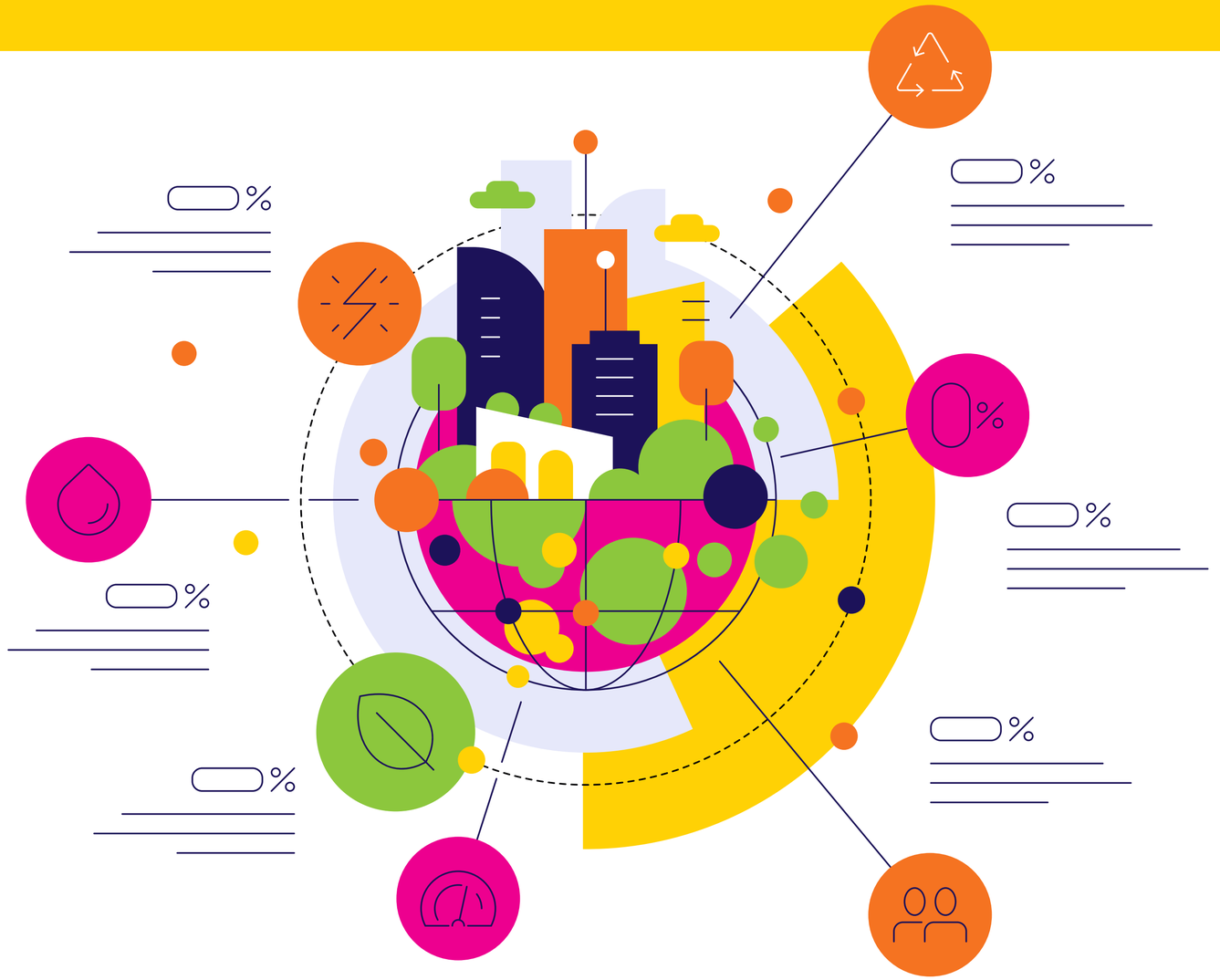
Our carbon footprint is one way of expressing our negative environmental impacts and demonstrates our commitment to reducing this impact. In addition to the development of reduction aims, we work with our staff and students to embed good practice and attitudes into our work.

Joe Cormack
NTSU VP Community & Welfare
2025 - 2026

Methodological Changes

As we navigate our net zero and reporting journey, changes in methodology arise due to changes in legislation, better practice, and more knowledge from our team on how we can make our data more accurate. We review and incorporate these changes each year.

It is noted that all changes in methodology from this year have been applied to previous years reporting, data has been backdated and all of the data displayed in this report is from the updated version with the correct measurable methodology. This is to ensure our data is comparable throughout the years, as well as ensuring all reporting years data is as accurate as possible. Previous reports have not been altered but all data comparison in this report is using the corrected data.



4 Changes In Our Methodology

This year has been 4 notable changes in our methodology:

Supply Chain

In previous years, 'cost of sales' purchases were excluded from supply chain footprint calculations, meaning a significant portion of purchases was not captured and data was not fully representative. This has now been corrected so all purchases, including those through our purchasing consortium, are fully accounted for. Previous footprints have also been adjusted accordingly.

Water

Two issues were identified this year. Previously, carbon conversion factors were applied only to water supply, omitting water treatment and resulting in underreported emissions. Additionally, best practice assumes a 5% loss from water usage. Both methodological changes have been applied this year and backdated to all previous reporting years.

Waste

Two issues were identified this year. Previously, carbon conversion factors were applied only to water supply, omitting water treatment and resulting in underreported emissions. Additionally, best practice assumes a 5% loss from water usage. Both methodological changes have been applied this year and backdated to all previous reporting years.

Working Elsewhere

It was previously assumed that 'heating weeks' needed to be excluded when calculating emissions for staff working elsewhere. This year it was confirmed that this adjustment is already included in the carbon conversion factor, so the approach has been corrected, backdated, and 'heating weeks' are no longer applied.

Our Footprint

Our total emissions for the 2023/24 academic year are 1850.62 tonnes CO_2 equivalent (tCO_2e). That's equivalent to...

Driving around the circumference of the globe

278 Times

In a diesel car (that's 11,140,850km)

OR

1090 Return Flights

From London to New York (average emissions, one passenger)

OR

88,839 Fully Grown Trees

Growing and absorbing carbon for a year

OR

The weight of

1,851 Great White Sharks

Our Baseline

As we continue to report on our footprint, we compare our current position to our baseline year which is 2021-22.

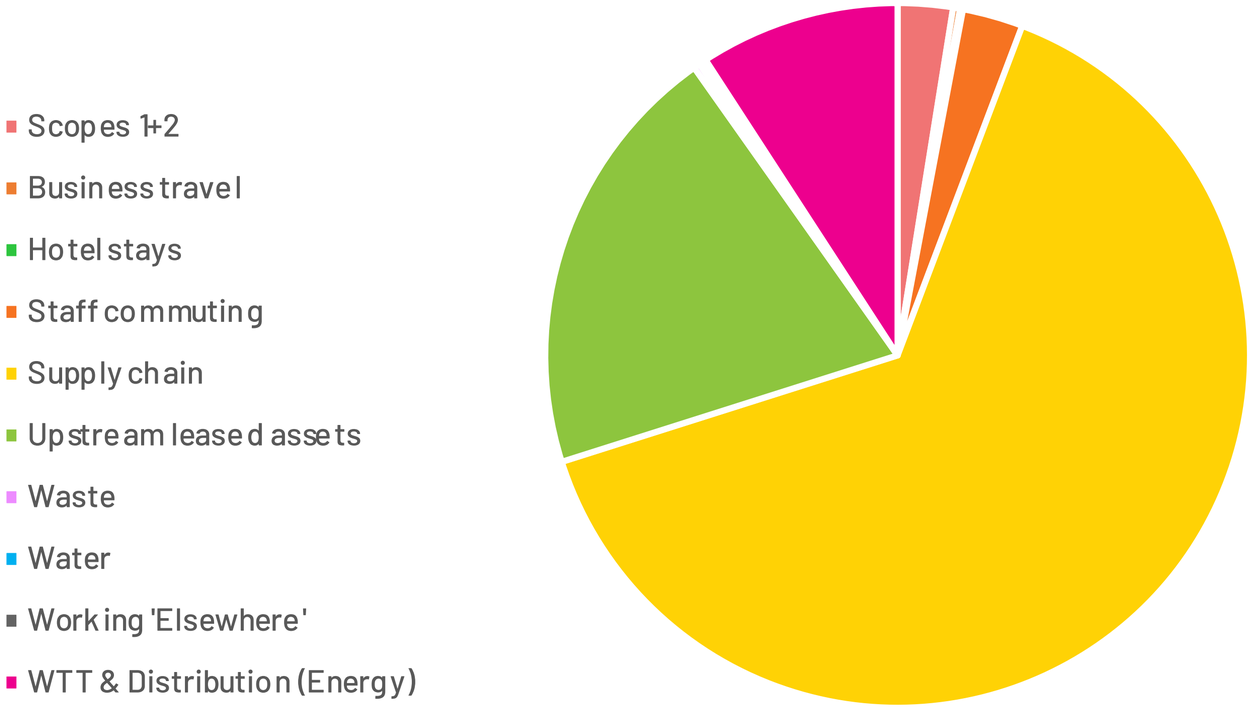


Figure 1. NTSUs Carbon Footprint (tCO_2e) Baseline Year 2021-22

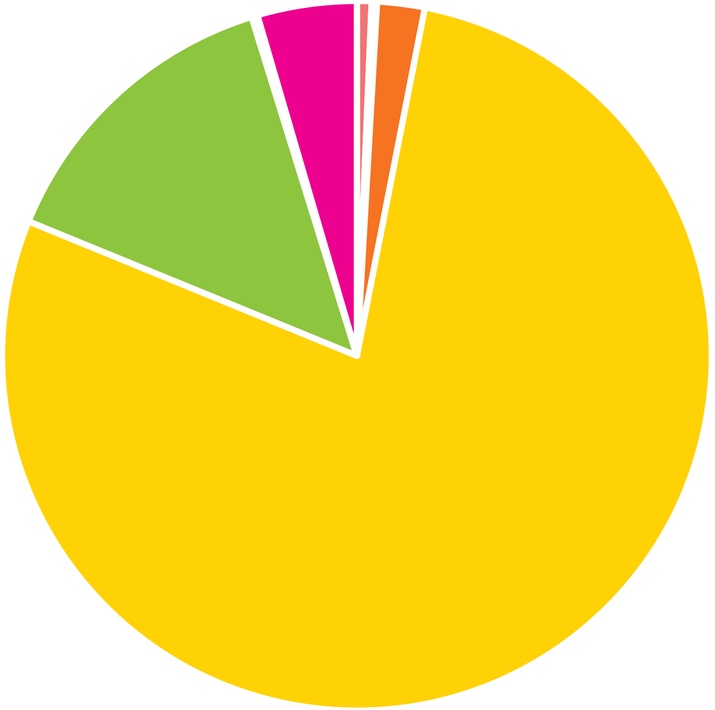


Figure 2. NTSUs Carbon Footprint (tCO_2e) 2023-24

Our Reporting Year

We continue to track our progress towards our Net Zero 2040 target. Due to reduced staff capacity and our baseline year not being ‘business as usual’ our data is slightly unrepresentative as our business activity has increased following 2021/22. As we implement our decarbonisation pathways we hope to see the beginning of our reduction journey.

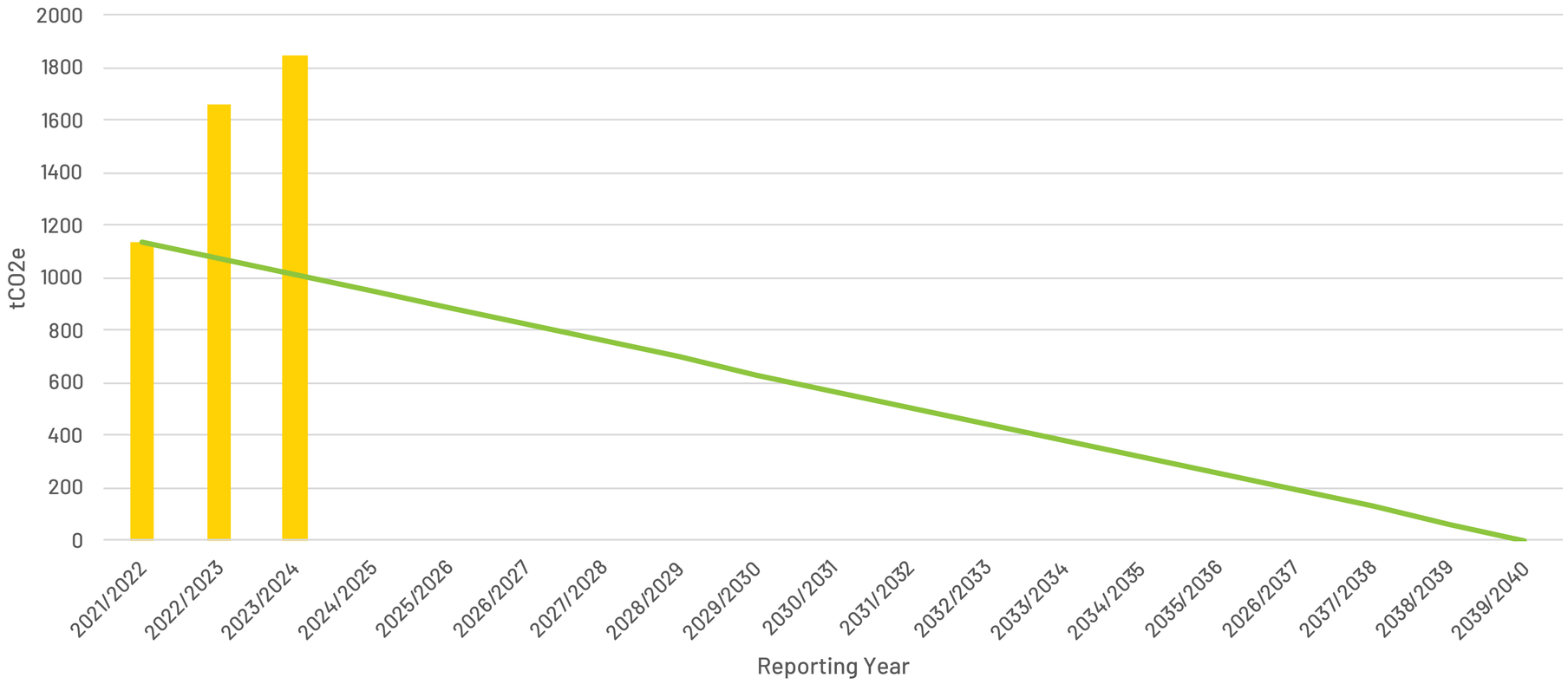


Figure 3. NTSUs pathway to net-zero, assuming a linear progression from our baseline in 2021/22 to net-zero by 2040.

Scope 1

Our scope 1 emissions are formed of emissions from our fleet vehicles and refrigerant usage.

Our absolute emissions for these were 12.29 tCO_2e, contributing 0.7% of our total carbon footprint.

Our scope 1 emissions have decreased by 57.2% compared to our baseline, however have increase by 23.8% from the previous year. This is due to the use of an extra van and higher mileage of all vehicles because of increased student activity and business activity, an increase also attributed to the bounce back post Covid-19.

Fleet (Fuel)

NTSUs fleet vehicles are used each year by NTSU staff, societies, and NTU Sports Clubs for moving goods and transport to/from events. For our footprint calculations, NTUs percentage use of our fleet is calculated, and their usage is deducted from our total emissions.

Total fuel consumption (litres): 5312.98 (13.35tCO_2e)
NTSU fuel consumption (litres): 2497.1006 (6.27 tCO_2e)

Vehicle	Total Number of Miles	NTU Mileage	NTSU Mileage	Percentage NTSU Use
9-seater (1)	7870	7083	787	10%
9-seater (2)	5949	5354.1	594.9	10%
12-seater mini-bus	6472	5177.6	1294.4	20%
Large Van	6091	3654.6	2436.4	40%
Small Van	20106	0	20106	100%
Van	884	0	884	100%
Average NTSU Use				47%

Fuel consumption has increased by 1143.47 litres from last year, however this can be explained by the following. NTSU usage of vehicles has increased by 11% compared to 2022/23, as well as increased business activity and NTSU use requiring the fleet vehicles. An extra van has been used this year and this has been solely by NTSU, contributing to a higher split of average use. These factors have led to a 3.4 tCO_2e increase in emissions from the previous year and 2.55 tCO_2e increase from the baseline year.

Refrigerants

NTSU uses refrigerants in our retail cooling units (fridges and freezers) and air conditioning units at City Campus (Byron building). Emissions are calculated according to the top-up amount.

In 2023/24, there were no recorded f-gas leaks from our retail cooling units.

Refrigerant Location / Type	Top-Up Amount	Total (tCO_2e)
Byron Air-Con	10% Assumed Loss	6.02

0.08% decrease from the previous year and baseline year. Data for both 2022/23 and 2023/24 reporting years was unavailable therefore it is not an accurate representation of reduction from the previous year. 10% assumed loss is likely an overestimation and we are working closely with NTU and UPP to address this issue and create a more accurate measurement of air-con refrigerants.

Scope 3

**Our scope 3 emissions all come from sources outside of our direct control.
They are wide-ranging and help to quantify the impact of our broader activities at NTSU.**

Staff Commuting

We are a multi-campus organisation and staff are encouraged to work across all sites. A recent staff travel survey (May 2024) showed that staff travel to City campus more than any other site (95% travel to City, 78% to Clifton and 60% to Brackenhurst). Overall, car travel is the primary method of commute used by full-time staff.

Recent survey data has been calculated based on recent staff travel survey results. It has been assumed that 67% staff travel to work 5-days a week. The remaining 23%, on average, work from home 1 and a half days a week. This information has been taken into account when calculating the staff commuting carbon footprint data.

Staff travel emissions have increased by 22% from the previous year, this is due to the average number of days staff worked from home decreasing. In 2022/23 staff worked from home an average of 2.13 days, whereas in 2023/24 it was only 1.6.

Staff travel to/from home for work contributes 40.06tCO2e, 2.2% of our total emissions.

Staff Commuting

Our data shows that most of our staff commute either by car or on foot.

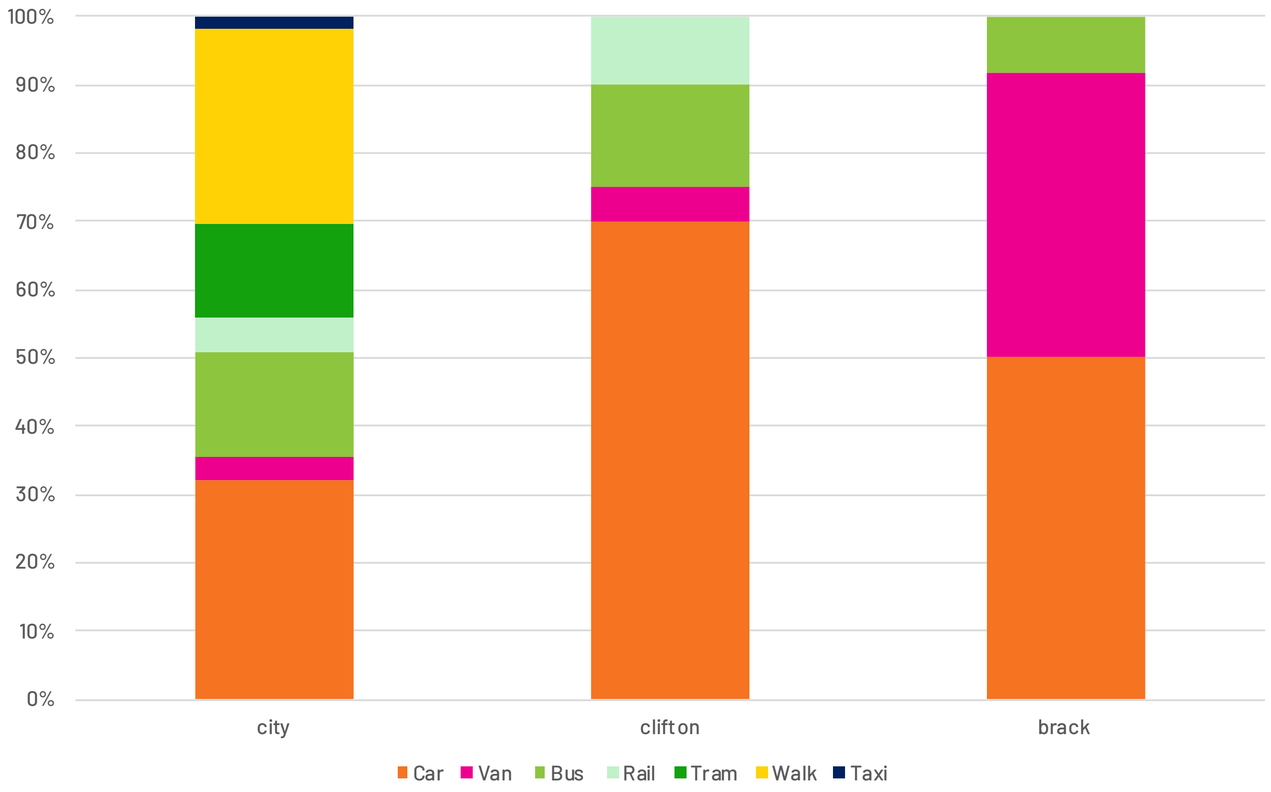


Figure 4. mode of staff commuting, by campus (%)

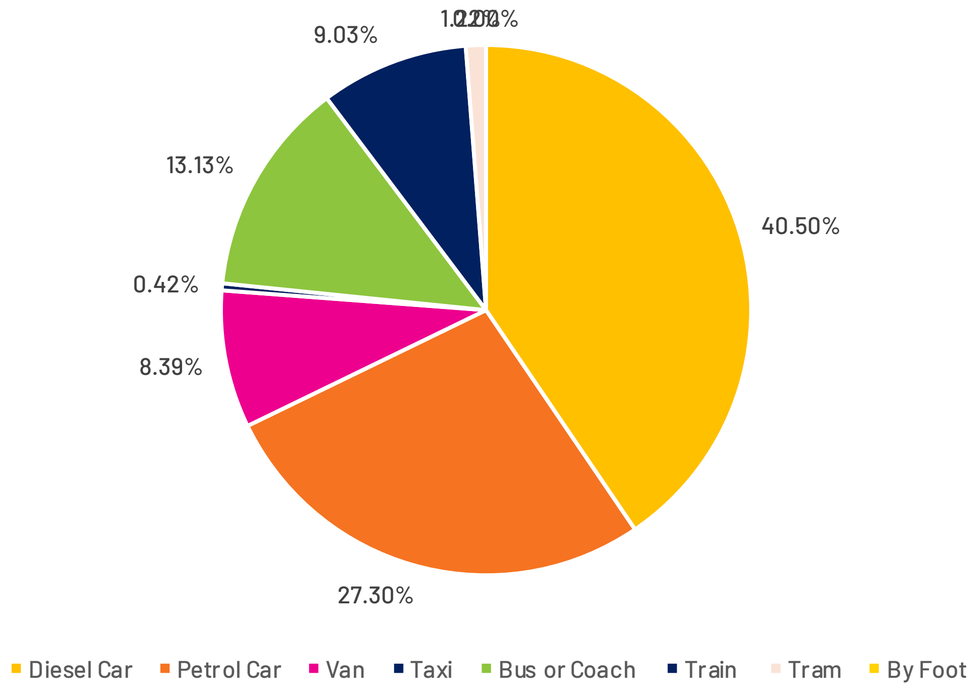


Figure 5. Staff Commuting (tCO_2e)

Transport

Our business travel includes all journeys made by staff for work-related reasons (i.e. cross-campus travel, travel to/from an event, and late-night taxi reimbursements (covering the cost of safe travel home when public transport is not running)). Our business travel also covers any contracted coach bookings, i.e., those used during Freshers to transport students to events.

Our business travel has decreased by 10% relative to our baseline. This is likely still attributed to a reduction in contracted coaches, however it has increased by 78% from the previous year which is largely accounted for in taxi's and coach hire during Freshers.

Our business travel emitted 13.24 tCO_2e and contributed 0.2% of our total carbon footprint.

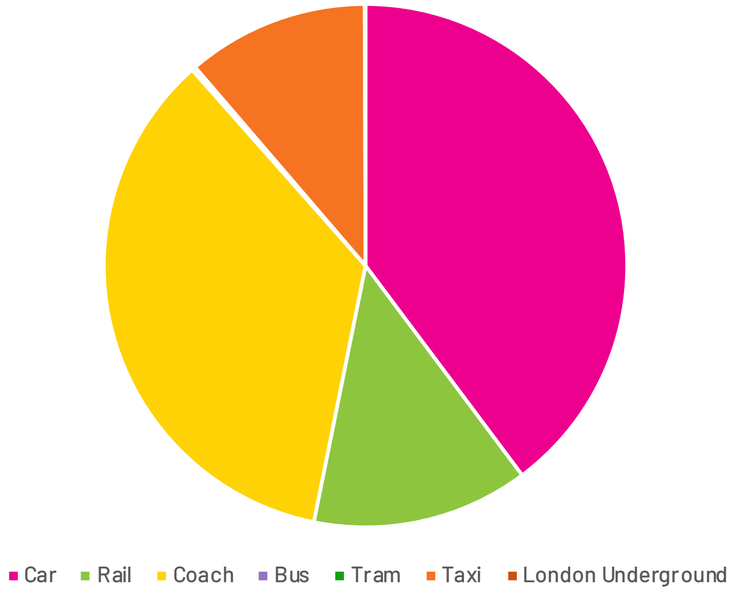


Figure 6. Business Travel

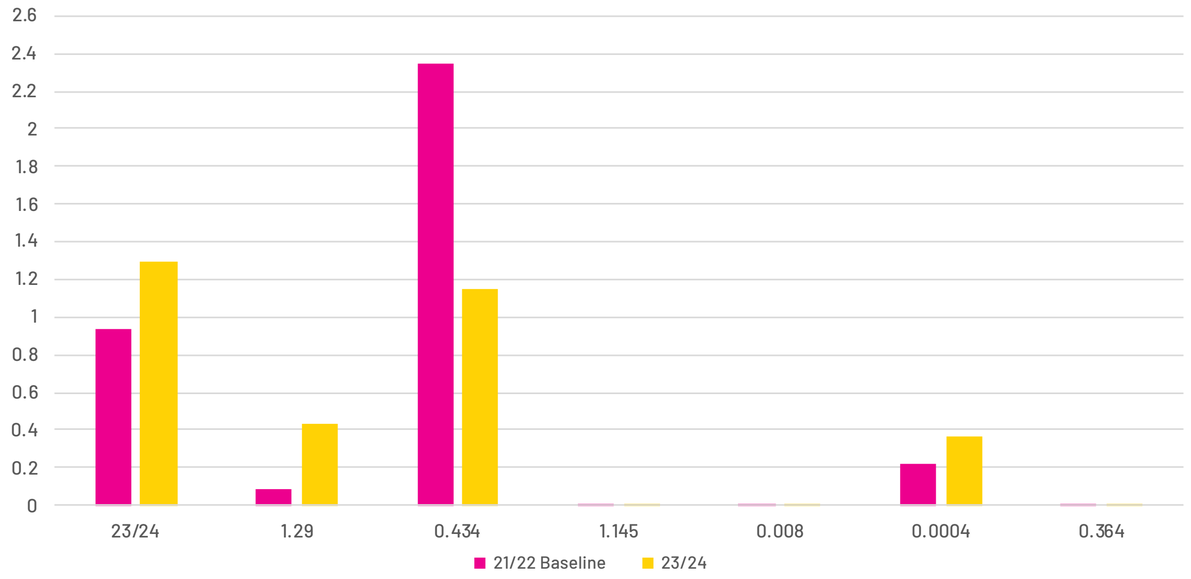


Figure 7. Business Travel in 2023 / 24 compared to our baseline year 2021 / 22

Hotel Stays

Hotel stay emissions are calculated by multiplying number of rooms x number of nights x conversion factor. Conversion factors vary by country. In the UK, all locations except London have the same conversion factor.

Hotel stays for business purposes contribute 1.26 tCO_2e; 0.1% of our total emissions. This is a 55.7% increase compared to the previous year, attributed to the fact that the number of hotel stays have more than doubled, with only 11 stays in 2022/23 and 30 stays in 2023/24. This is due to increased business activity, the attendance of more conferences, and more trips to the campus in London.

Upstream Leased Assets

We lease our buildings from NTU and UPP across three campuses and four buildings. Within these spaces, utilities are managed independently from NTSU.

NTSU does not have sole occupancy within these buildings. Our emissions are calculated according to percentage occupancy.

Emissions related to our upstream leased assets have increased by 13.4% since our baseline year. Within this, gas (kWh) usage has increased by 23%. Meanwhile, Electricity (kWh), district heat (kWh), and biomass (kWh) have all decreased in usage by 8%, 16% and 88% respectively. This is also attributed to increased activity following Covid-19 as 'business as usual' return, the differences between resources could be due to our landlords choice of preference for source of energy.

This category contributes 259.48 tCO_2e to our total carbon footprint and remains our second largest contributor at 14%.

Vehicle	Total Building Area (m^2)	SU Occupancy (m^2)	SU Occupancy (%)
Byron (City)	6095.50	3050.99	50
Benenson (Clifton)	1841.90	1397.45	76
DH Lawrence (Clifton)	951.70	323.94	34
Main Hall (Brack)	2028.72	359.18	18

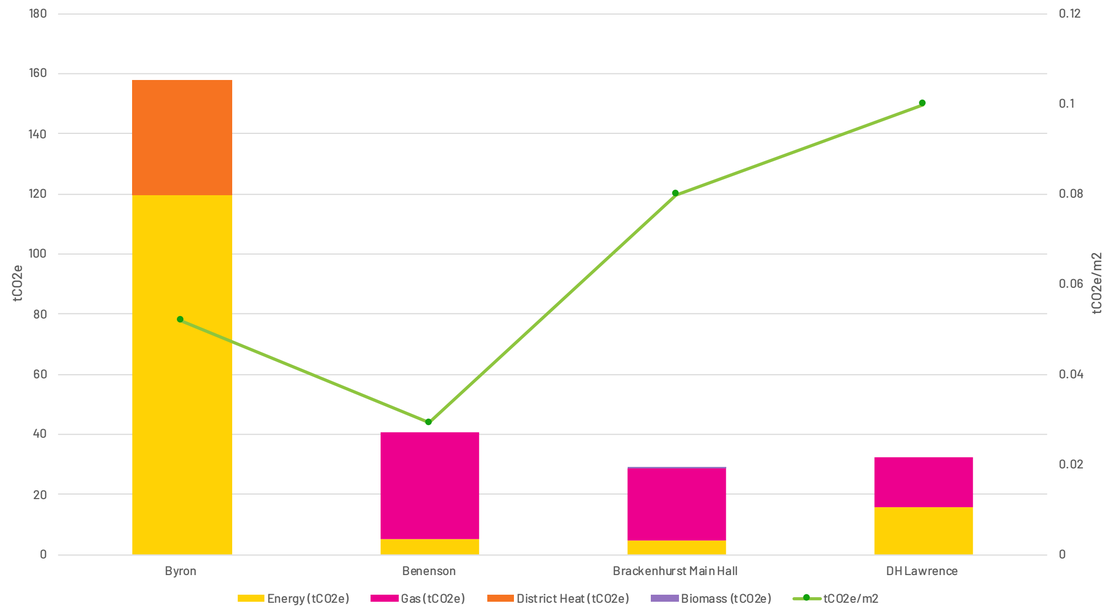


Figure 8. NTSU's Upstream Leased (tCO_2e and tCO_2e/m^2) for NTSU buildings across City, Clifton, and Brackenhurst campus.

Supply Chain

NTSUs supply chain is the biggest contributor of our emissions throughout our footprint, at 78.1%.The total emissions from our procurement activities are 1445.54 tCO_2e.

This is a 97.2% increase compared to our baseline, however in 2023/24, NTSU spent approximately £3 million on goods and services – over £600,000 more than in our baseline year. This rapid increase in business activity, coupled with our baseline year being a low activity and low cost year due to Covid-19 has resulted in the large emissions increase. Although the increase in emissions is large, when acknowledging spending has also increased by 25% this is expected.

The increase in purchasing has led to increased carbon emissions across multiple categories, including in 'Cost of Sales and Alcohol', 'Subscriptions and Affiliations', and 'Staff Costs'. Meanwhile, emissions and expenditure have decreased in 'Advertising & Promotion' and 'Cleaning and Repairs'. Cost of Sales and Alcohol remains the greatest contributor at 75% despite consistent expenditure between years.

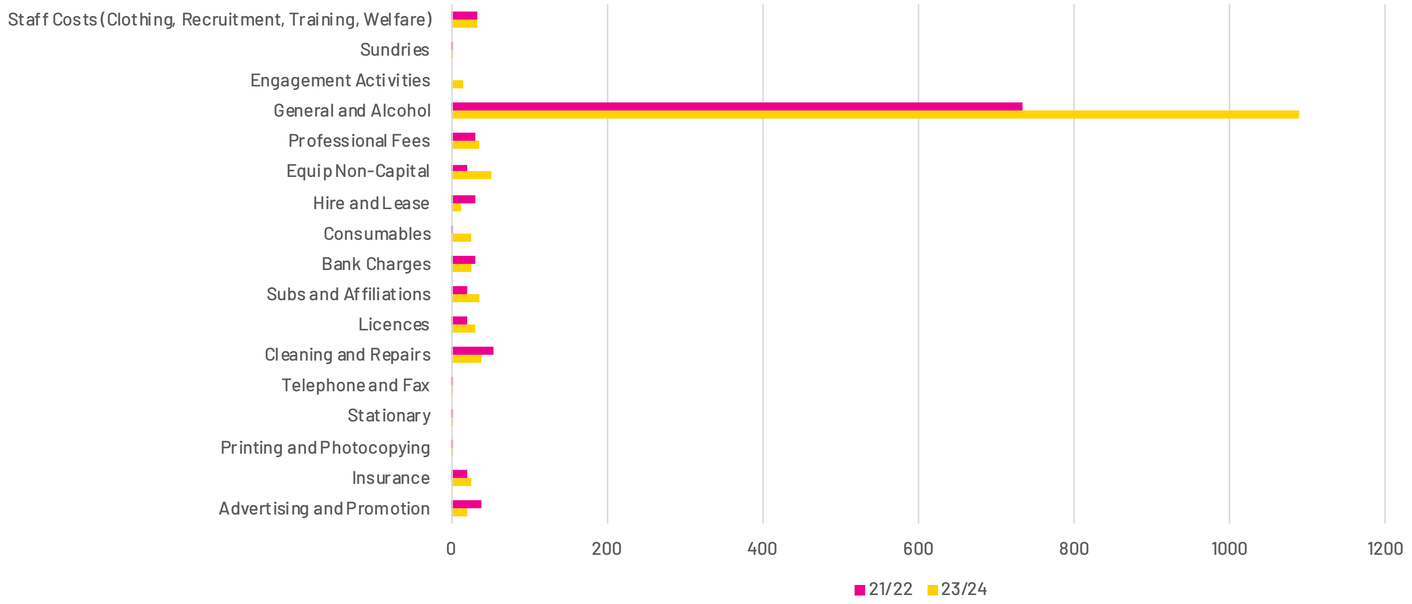


Figure 9. supply chain (tCO_2e) comparing current year vs baseline

Waste

In 2023/24, NTSU produced 68.22 tonnes of waste through our activities, accounting to 1.149 tCO_2e, 0.1% of our total emissions; this is a 65% reduction from our baseline year and a 70% reduction from 2022/23. .

Our overall amount of waste produced has reduced drastically, however part of this has been attributed to assumed lost data. Although we have been making conscious efforts to reduce our waste, we believe due to our shared compounds with NTU some of our data may have been accounted for in their calculations, we are working with NTU and Enva to improve on the reporting process going forward to reduce inaccuracies in the data.

There has also been a large change in the carbon conversion factor this year, the change in factor attributes less carbon emissions per tonne of waste, therefore if our production weight had remained the same we would have still seen a reduction.

Our waste contractor successfully diverted up to 98% of waste from landfill through on-site and off-site recycling processes. This is the same as our baseline year (Enva's national average) and 1% more than our previous year.

	City	Clifton	Brackenhurst
Landfill	2%	3%	5%
Recycled	98%	97%	95%

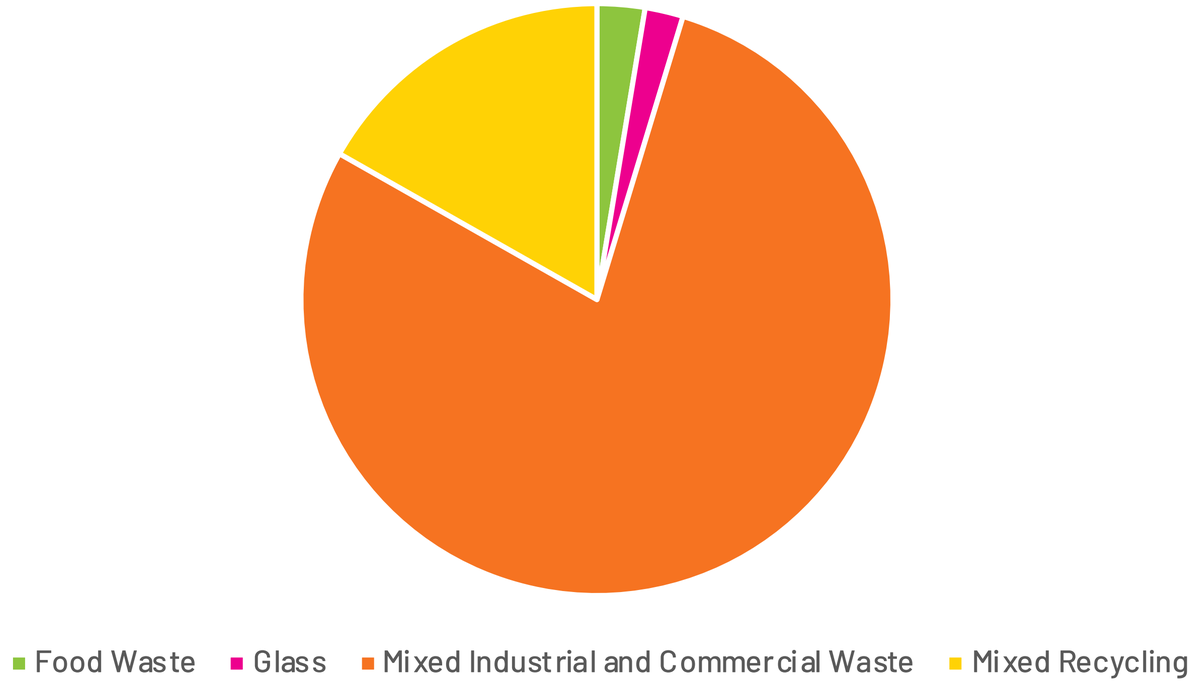


Figure 10. Waste (tCO_2e)

Water

In 2023/24, NTSU used 2681 m^3 water in our buildings, which is equal to 0.88 tCO_2e. This contributes 0.05% of our total carbon emissions.

Building	Water Supply tCO_2e	Water Treatment tCO_2e
Byron SU (City)	0.27	0.32
Benenson (Clifton)	0.12	0.14
DH Lawrence (Clifton)	0.00	0.00
Main Hall (Brackenhurst)	0.01	0.01

As mentioned there was a change in methodology, previously we had not accounted for NTSU usage of water when receiving the data from NTU, therefore previous footprints were incorrect and were over reporting. We have now accounted for the percentage occupancy of our buildings and applied this to our data, so our overall usage has decreased from original records. Although our usage is less than we thought, our carbon output has increased as we were not accounting for the carbon associated with the treatment of the water. It is important to apply the carbon factor for supply and treatment of water to get a full view of emissions associated to water.

We have made a 5% reduction on our water emissions from our baseline year, however a 23% increase from the previous year due to a higher supply, this is likely down to increased activity within the past year.

Working Elsewhere

NTSU is a cross-campus organisation and staff are encouraged to work from each location within their role. Some non-student facing staff members in the organisation have options to work from home where appropriate. According to our May 2024 travel survey, 20% of full-time staff work from home an average of 1.6 days a week.

Although staff are working from home on average less days a week, the number of staff working from home has increased by 30% from both our baseline year and previous reporting year, this has resulted in a minimal increased in emissions of only 4.4%.

The electricity and heating associated with working from home for NTSU staff contributes 3 tCO_2e - 0.2% of our total emissions. This method has changed from previous years to consider 'heating weeks' already being accounted for within the carbon conversion factor, this has been adjusted in previous footprints also.

Well-To-Tank and Transmission & Distribution

Well-to-Tank (WTT) and Transmission & Distribution emissions account for the emissions related to the production of fuels and energy purchased and consumed by the Students' Union that are not included in our scope 1 and upstream leased assets.

In 2023/24, this category was responsible for 83.72 tCO_2e, which contributes 4.5% of our total emissions. There has been a 19.8% decrease in WTT emissions compared to our baseline.

		tCO_2e
Scope 1 and U.L.A Emissions	WTT (scope 1)	16.49
	WTT and T&D	57.01
Transport Emissions	Business Travel	0.87
	Staff Commuting	9.35

Next Steps

NTSU are committed to reporting our carbon footprint annually and developing carbon reduction strategies in line with our activity and global, national, and local targets.

What We Hope To Achieve

I'm pleased to present our 2023-24 Carbon Report, thank you to everyone who helped in the production of this work. Despite significantly increased activities and events for students, the rise in our overall footprint was smaller than anticipated, which is encouraging

Our supply chain emissions naturally grew alongside this activity, however when considering the level of increase in activties for students, the increase was relatively modest. Importantly, we've made significant improvements to the accuracy of our reporting, introducing methodological changes that reflect our commitment to doing things the right way.

Looking ahead, we will continue working closely with our staff, students, and stakeholders to enhance both our reporting processes and our carbon reduction strategies as part of our journey to net zero.

Phil Kynaston
NTSU CEO
2022 - Present

Business As Usual

The 2023/24 academic year represented another ‘business as usual’ year in terms of activity and carbon, however staff resource was limited due to the Sustainability Officer post not being filled for 6 months.

This has impacted the organisations net zero journey but this report aims to provide continued transparency for our members and stakeholders about our environmental impact.

We are continuing on our journey to develop net zero pathways that will aid our development to continue in a way that protects the environment and reduces our carbon emissions. Staff and students are continuingly being encouraged to make every effort to improve their behaviour and we will remain reporting on this to the highest level of accuracy. We understand there is still room for improvement, and the changes in methodology from this year has shown us this is an ever evolving and improving space that we intend to keep up with the times with.

We are excited to start exploring carbon reduction opportunities, and improve on our reporting processes to ensure continued data accuracy.

We hope you’re as invested in this carbon reduction journey as we are. If you have any questions about the process, don’t hesitate to get in touch sustainability@su.ntu.ac.uk

Abby King
Sustainability Officer
2024 - Present

Data Sources & Calculations

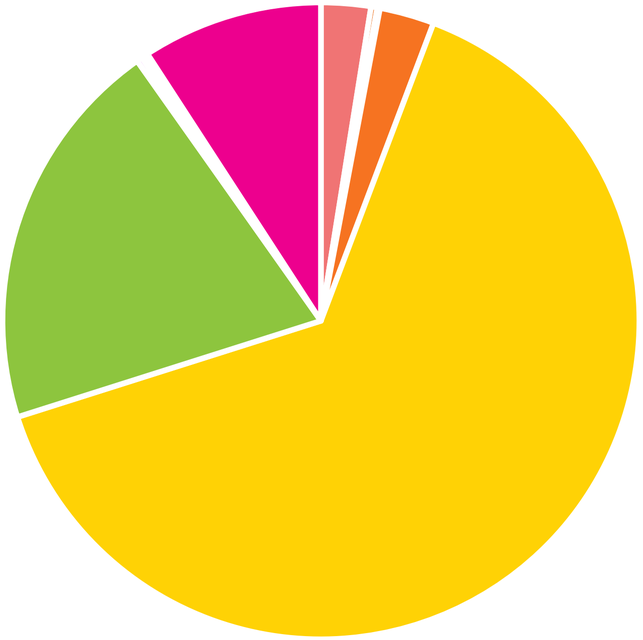
Emissions Category	Sources of Data
Scope 1 (Fuel and Refrigerants)	• Fuel consumption (litres) supplied by AllStar Business portal & reporting team. • 2024 BEIS conversion factors applied.
Business Travel	• Calculated using data from NTSU Financial reports (milage claims) and contracted coach and taxi accounts. • 2024 BEIS conversion factors used for each mode of transport.
Hotel Stays	• Calculated using data from NTSU Financial reports (accommodation claims). • 2024 BEIS conversion factors applied based on hotel location.
Staff Commuting	• Modal split for travel from the May 2024 staff travel survey adjusted to account for staff numbers in 2023/24. • 2024 BEIS carbon conversion factors applied for each mode of transport.
Supply Chain	• NUS Services Ltd. Purchasing Body, and all other cost of sales purchases. • Emissions (tCO_2e) calculated using HESCET tool, associated with institutional procurement spend.
Upstream Leased Assets (Energy Use)	• Electricity, gas and district heat consumption retrieved by NTUs Energy Team. • 2024 BEIS carbon conversion factors applied.
Waste	• Waste composition and disposal methods from ENVA – NTSUs waste contractor, and occupancy percentage applied for NTSU space. • 2024 BEIS carbon conversion factors applied for each waste type.
Water	• Water consumption in m^3 provided by NTU Energy Team, and occupancy percentage applied for NTSU space. • 2024 BEIS carbon conversion factors applied for both supply and treatment.
Well-To-Tank, Transmission & Distribution	• Electricity, gas, district heating, fuel & biomass consumption for managed estate retrieved. • Travel emissions for business travel and staff commuting. • 2024 BEIS carbon conversion factors applied.
Working Elsewhere	• Staff working from home calculated based on May 2024 Staff Travel Survey and adjusted to the number of full-time staff employed for the 2023/24 academic year. • 2024 BEIS carbon conversion factors applied, with heating weeks accounted for in conversion factor.

For more information on how our emissions are calculated, please refer to the NTSU Carbon Reporting Process document.

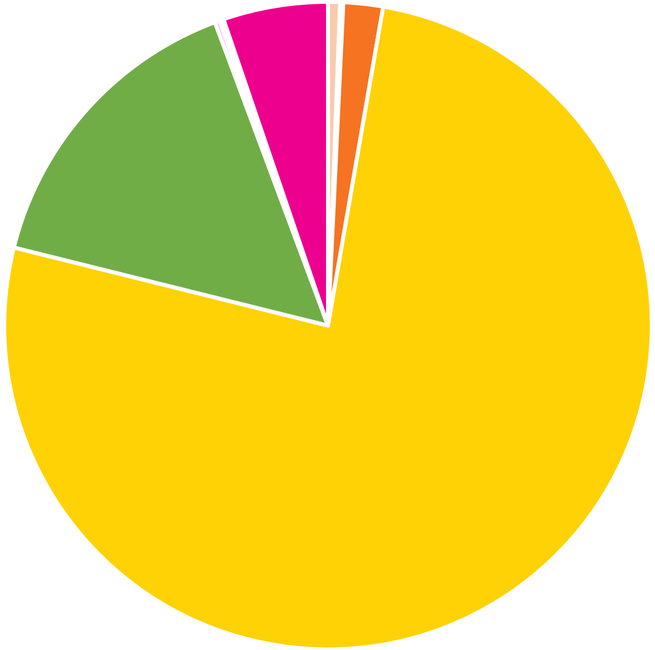
Appendix

Appendix 1

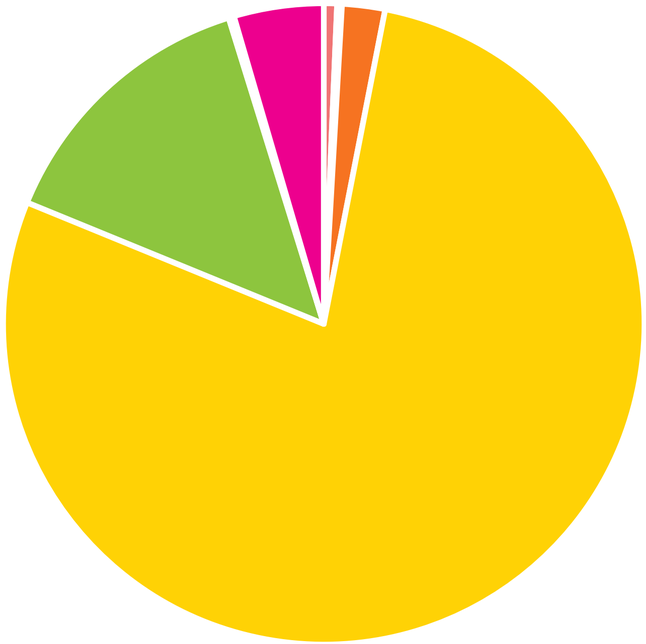
All reporting years total carbon footprint



NTSUs Carbon Footprint (tCO_2e)
Baseline Year 2021-22



NTSUs Carbon Footprint (tCO_2e)
2022-23

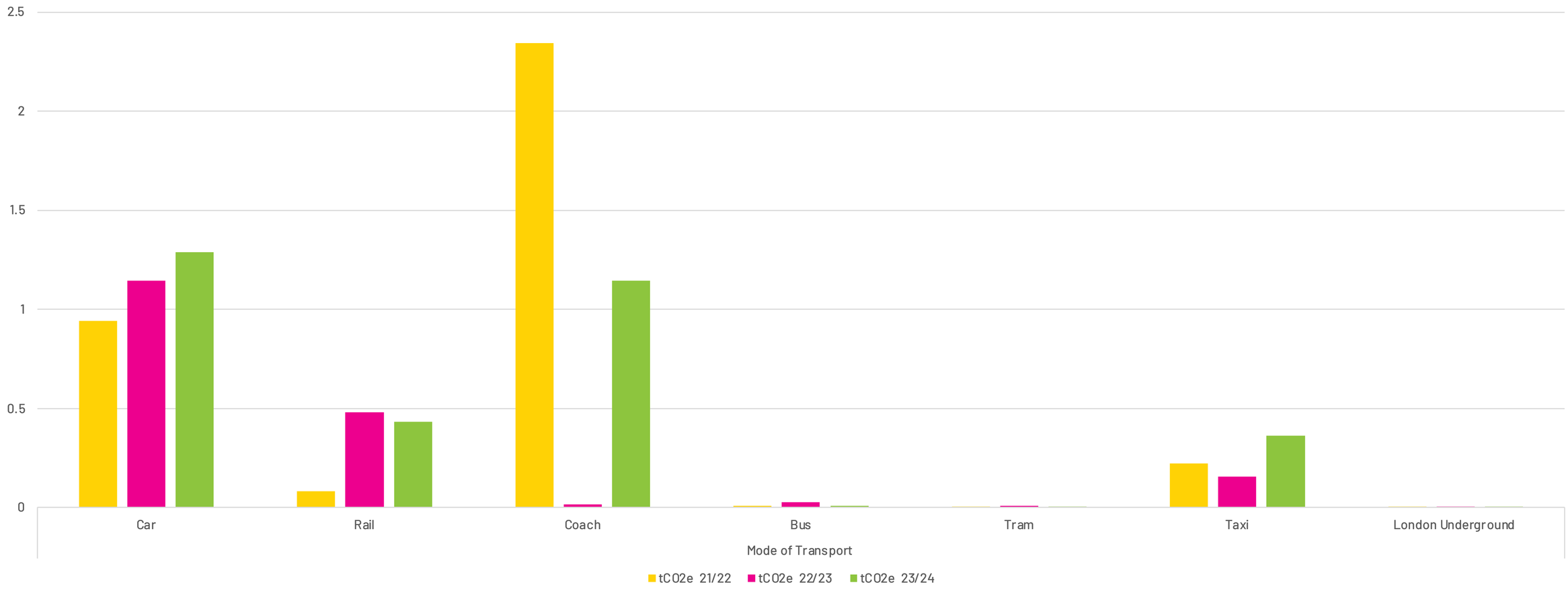


NTSUs Carbon Footprint (tCO_2e)
2023-24

Scopes 1+2
Business travel
Hotel stays
Staff commuting
Supply chain
Upstream leased assets
Waste
Water
Working 'Elsewhere'
WTT & Distribution (Energy)

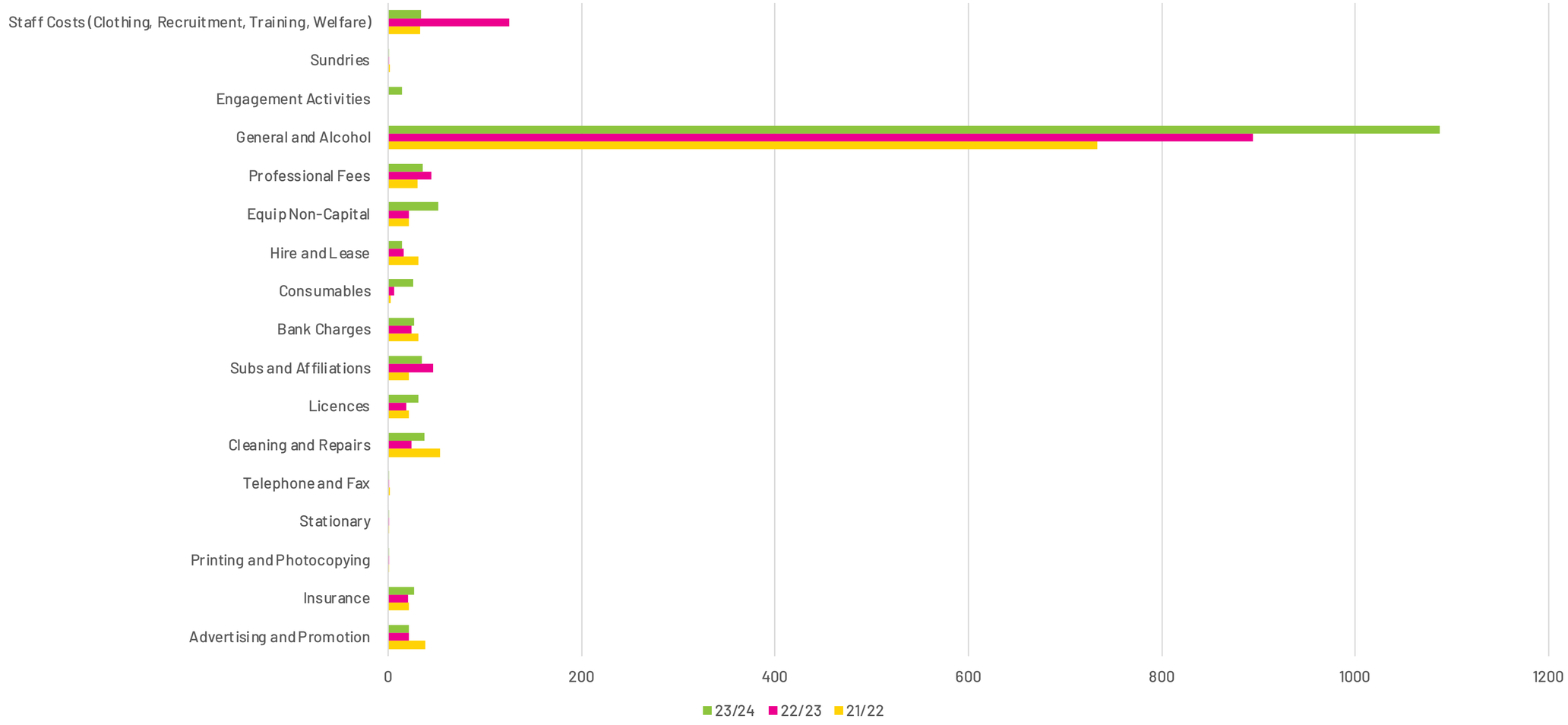
Appendix 2

All reporting years business travel



Appendix 3

All reporting years supply chain



NTSU

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BE A PART OF SOMETHING MORE

TRENTSTUDENTS.ORG TRENTSU TRENTSTUDENTS