

Scope 3 Emissions Report



University of Salford Scope 3 Emissions

Addendum to Energy, Water and Carbon Management Plan 2018

June 2024

Version 5.0

Document Control Information

Author	Summary of changes	Version	Authorised & Date
Assistant Director of Sustainability	Updated Scope 3 emissions data where available for 2022/23 and previous years where new data available, updated methodology where appropriate and updated Exec Summary	V5.0	
Assistant Director of Sustainability	Updated Scope 3 emissions data where available for 2021/22 and previous years where new data available	V4.0	
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Head of Environmental Sustainability	Updated Scope 3 emissions data where available for 2019/20 and 2018/19 as new data available	V2.1	H. Williams, COO 30 th June 2021
Head of Environmental Sustainability	Updated Scope 3 emissions data where available for 2019/20	V2.0	
Environmental Sustainability Officer	Added student accommodation data	V1.1	Environmental Projects Board May 2020
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1. Executive Summary

In 2011, we launched the first University of Salford Carbon Management Plan with targets to reduce scope 1 and 2 carbon emissions by 43% by September 2020 compared to a 2005/06 baseline. As of end of academic year 2017/18 we had already reduced its scope 1 and 2 carbon emissions by 64%. This was achieved partly by reductions in energy use at the University through investment in energy efficiency, partly through reductions in the grid electricity emissions factor, and also partly through the University's divestment of its student accommodation in 2007/08.

In 2018 a new Energy, Water and Carbon Management Plan was approved which has built on our significant progress in carbon reduction to further progress towards our objective of a scope 1 and 2 81% reduction by 2030. We are currently developing our Net Zero Carbon Plan which will detail how we will work towards net zero carbon by 2038 in line with the Greater Manchester carbon reduction strategy.

Environmental sustainability is a core element of the ambitious University Campus Masterplan. Central to the plans is an energy strategy that takes a major step towards a zero-carbon future, while providing high quality spaces for residential, teaching, research and commercial uses that are cost-effective to run. University of Salford buildings will undergo refurbishment to make them highly energy efficient, with maximum potential for renewable energy generation.

The 2005/06 baseline is to be used for absolute carbon emissions, and this has therefore been adopted under the Energy, Water and Carbon Management Plan (EWCMP). Other relevant baselines are included in the Objectives, Targets and Action Plan and include the academic year 2016/17 as a baseline for energy, gas and water consumption, to be used in the University's ISO50001 Energy Management System.

Carbon emissions are broken down into three categories by the Greenhouse Gas Protocol in order to better understand the source.

Scope 1 – All Direct Emissions from the activities of an organisation or under their control. Including fuel combustion on site such as gas boilers and fleet vehicles.

Scope 2 – Indirect Emissions from electricity purchased and used by the organisation. Emissions are created during the production of the energy and eventually used by the organisation.

Scope 3 – All Other Indirect Emissions from activities of the organisation, occurring from sources that they do not own or control. These are usually the greatest share of the carbon footprint, covering emissions associated with business travel, procurement, waste and water.

This document supports the EWCMP through measuring these in-direct, Scope 3 carbon emissions which account for over 80% of the University's total emissions. The report details the planned management activities and reduction targets for each emission source. Whilst we monitor emissions year on year, caution must be taken when comparing between years (and with other institutions) as monitoring methods, access to data and accuracy may vary.

SCOPE	Emission Source	Baseline Year	Baseline (tCO ₂ e)	2018-19 (tCO ₂ e)	2019-20 (tCO ₂ e)	2020-21 (tCO ₂ e)	2021-22 (tCO ₂ e)	2022-23 (tCO ₂ e)	Target
3	Operational Waste	2017/18	66	44	8	5	8	9	12 tCO ₂ e (2020/21)
3	Construction Waste	2019/20	0.02	NR	1.2	83	15	244	Net Zero Carbon by 2038
3	Water and Wastewater	2016/17	107	46	62	16	30	32	63 tCO ₂ e (end 2019/2020)
3	Business Travel	2018/19	1312	1321	743	48	366	627	Net Zero Carbon by 2038
3	Staff Commuting	2018/19	2395	2395	1330	1251	2273	2267	Net Zero Carbon by 2038
3	Student Commuting	2011/12	8812	8812	6493	6117	8234	8555	Net Zero Carbon by 2038
3	Student Relocation	2019/20	5601	NR	5601	6390	8693	12,324	Measure and Monitor
3	Student Accommodation	2018/19	883	883	1262	1663	1644	1323	Measure and Monitor
3	Home Working	2019/20	45	NR	45	59	144	141	Measure and Monitor
3	Procurement	2016/17	24313	29775	26028	33836	34729	34987	Net Zero Carbon by 2038
3	Electricity & Gas Scope 3	2016/17	1924	1260	1043	1428	1392	1476	TBC
2	Electricity	2016/17	5496	3977	3107	2379	2782	3351	Reduce by 81% by 2030 and net zero carbon by 2038
1	Gas	2016/17	2988	2393	2339	2703	2387	2284	Reduce by 81% by 2030 and net zero carbon by 2038
1	F Gas Fugitive Emissions	2018/19	75	75	348	290	321	182	Reduce by 81% by 2030 and net zero carbon by 2038
1	Vehicle fuel	2016/17	39	38	27	13	15	8	Reduce by 81% by 2030 and net zero carbon by 2038
			48074	49124	46158	55815	63542	67809	

Table 1 Summary of carbon emissions and targets

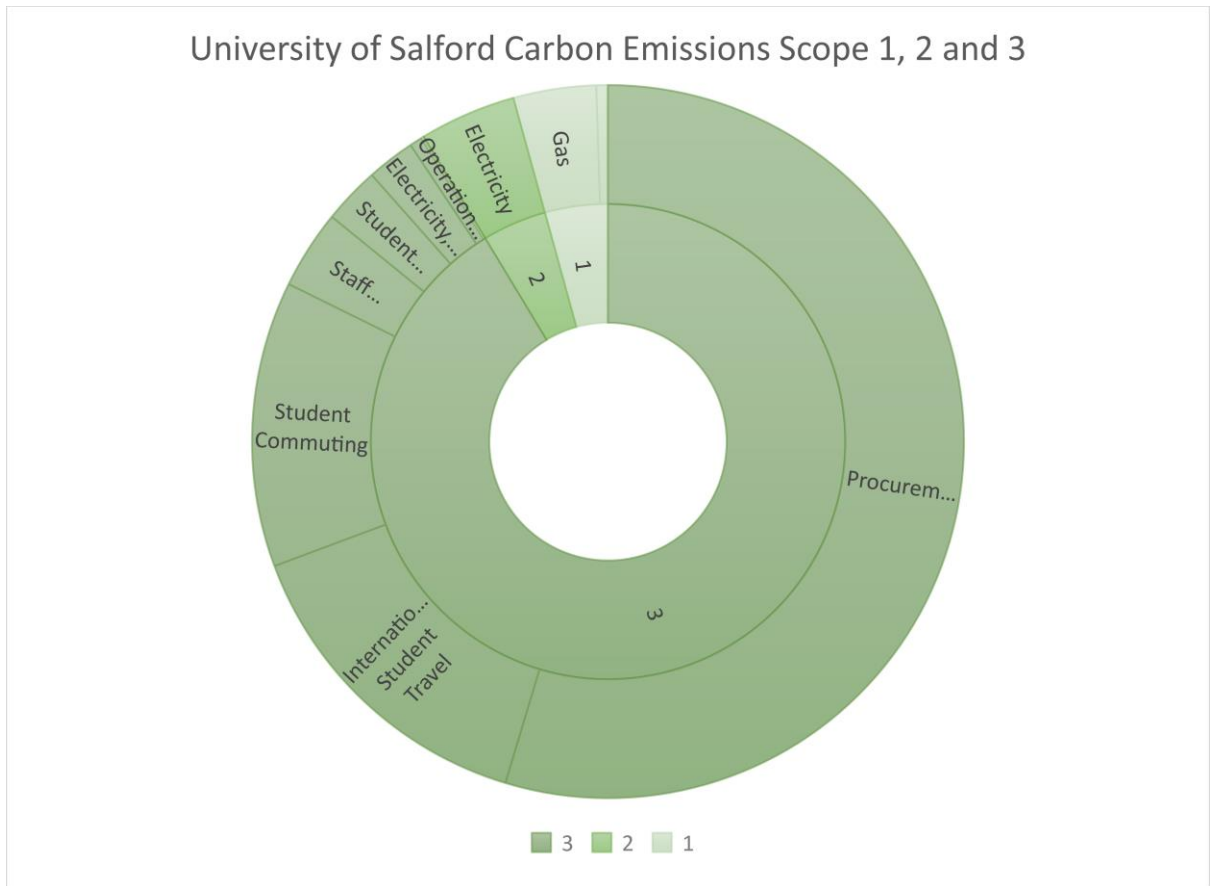


Figure 1 Baseline Scope 1, 2 and 3 emissions totals

For updates on progress with action plans please refer to the University Environmental Sustainability Annual report, available at www.salford.ac.uk/environmental-sustainability/strategy.

2. Operational and Construction Waste

Scope 3 emissions associated with the end-of-life disposal of materials arising from the University's operations and capital projects, using a variety of disposal methods.

Baseline	66 tCO₂e 2017/18 (operational waste)
Target	12 tCO₂e 2025/26 (operational waste)

2.1 Background

The University of Salford Estates and Facilities Team manages, measures and monitors the majority of waste from University day-to-day operations. Currently around 40% of waste is recycled with a target to increase this to 65% by September 2025. There is also a target to reduce waste by 12% from 2018/19 baseline. The target for scope 3 carbon emission reductions has been determined by taking into account the existing targets for waste reduction and increase in recycling.

2.2 Methodology

The carbon emissions associated with the University's disposal of waste are calculated using the appropriate DESNZ/DEFRA carbon conversion factors. These conversion factors apply a CO₂e figure for each kg of waste generated, which varies depending on the waste stream and disposal route. Construction waste is reported separately as this varies significantly and targets are set for each project.

2.3 Performance

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Operational Waste Recycling rate	38%	40%	39%	44%	47%	48%
Operational Waste Carbon emissions, tCO₂e	66	44	8	5	8	9
Construction & Demolition Waste Recycling Rate	NR	NR	100%	97%	87%	92%
Construction & Demolition Waste Carbon Emissions, tCO₂e	NR	NR	1.2	83	15	244

Table 2 Waste Scope 3 Emissions

The recycling rate for operational waste has steadily increased over the past few years and is currently at 48%. The University also now diverts 100% of its operational waste from landfill, achieved through a combination of onsite, off-site recycling and energy recovery from waste.

The baseline year has been chosen as 2017/18 as the University moved waste contractors who provided more accurate waste management data than previous years. The waste in 2019/20 and 2002/21 was significantly reduced due to the impacts of Covid-19, this also impacted on recycling.

Carbon from construction waste can vary significantly each year depending on the scale of construction projects taking place on campus. The recycling rate obtained across all projects aims to be above 90% with zero waste sent direct to landfill.

2.4 Action Plan

Action	Progress to date
Work with waste contractors to work towards zero to landfill and other lower carbon impact waste disposal options	Ongoing
Decrease waste produced and increase onsite recycling in line with established targets	Ongoing – see Waste Management Plan
Investigate potential for monitoring of scope 3 carbon emissions from construction related waste	Achieved.

3. Water and Waste Water

Scope 3 emissions from water use associated with the energy used in supplying water to the University and the treatment of waste water removed from the university, via the sewerage system.

Baseline	107 tCO₂e 2016/17
Target	63 tCO₂e 2025/26

3.1 Background

The University monitors overall water consumption and reports this to the Higher Education Statistics Agency via the Estates Management Record.

The target for associated Scope 3 emissions has been calculated from the 12% reduction target for water set on a 2018/19 baseline by 2025. 2021/22 has seen an increase in water consumption but requires further investigation as based on significant estimated readings.

3.2 Methodology

The carbon emissions associated with the University's use and treatment of water are calculated using the appropriate DESNZ/DEFRA carbon conversion factors. These conversion factors apply a CO₂e figure for both water supply and treatment.

3.3 Performance

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Water carbon emissions, tCO₂e	35	27	23	20	6	11	15
Waste water carbon emissions, tCO₂e	72	56	48	42	10	19	17
TOTAL	107	83	71	62	16	30	32

Table 3 Water and Wastewater Scope 3 carbon emissions

There has been a large decrease in water use over the last few years, mainly due to a leak which occurred in the baseline year which was subsequently identified and fixed. The water use targets have recently been reviewed to take this into account. The last two years (2021/22 & 2022/23) have seen an increase in water consumption; this requires further investigation as based on significant estimated readings.

3.4 Action Plan

Action	Progress to date
Undertake water audits on current estate to identify efficiency improvements	Ongoing
Install AMR on all fiscal water meters to improve leak detection and billing accuracy	Ongoing
Carry out leak detection surveys on high risk areas	Ongoing
Continue to implement grey water and rainwater systems on new buildings where feasible	Ongoing – not feasible on current projects

4. Business Travel

Scope 3 emissions associated with business travel that is paid for by the University and undertaken by academic staff, support staff and students. E.g. travel undertaken by academics to attend conferences or events.

Baseline	1321 tCO₂e 2018/19
Target	Under development to support target for Net Zero Carbon by 2038

4.1 Background

Business Travel is an essential part of the University's operation, undertaken by all departments and faculties. Although the emissions associated with this form of travel occurs externally to the University, the carbon impact is now being monitored and measures are in place to encourage alternatives to travel and lower carbon forms of travel.

4.2 Methodology

Data relating to travel booked by staff members is collated centrally by the University Finance Teams. Additional data has been included as access to data has improved. The associated scope 3 carbon emissions have been calculated by using data from a number of sources (as below) and then converting to carbon using the relevant DESNZ/DEFRA carbon conversion factors.

Data	Source
Business Travel mileage claims, miles travelled	University Finance
Business Travel air & public transport data	University Travel Management Suppliers

Table 4 Data Sources for Business Travel Data

For 2022/23 carbon data for business travel from air, rail and hotel stays has been provided via Thrust Carbon.

For 2022/23 data for vehicle and taxi hire has been estimated based on previous year data. Data for coach hire has been improved from one key supplier.

4.3 Performance

tCO₂e	2018/19	2019/20	2020/21	2021/22	2022/23	Data Limitations
Business Travel Mileage Claims	79	59	25	21	22	
Business Travel Vehicle Hire	11	7	0	0	7	
Business Travel Air	1045	555	11	263	480	

Business Travel Rail	51	19	0.7	23	9.7	
Business Travel Taxi	7	5	0.6	2.3	2	Only includes taxi account not staff claims
Business Travel Coach	13	23	0.2	47	73	Only includes one school data for 2018/19 (majority of trips). One key supplier for 2022/23
Hotel Stays	116	75	9.5	9	34	Only calculated for international stays where data is available for that country in the BEIS carbon conversion factors.
TOTAL, tCO2e	1321	743	48	366	627	

Table 5 Summary of Business Travel Scope 3 Emissions in tCO2e

Business Travel was reduced significantly in 2020/21 due to Covid-19 with travel maintaining a reduction in 2021/22. Work is underway to encourage alternatives to reduce the carbon impact of travel.

4.4 Action Plan

Action	Progress to date
Ensure University Travel Policy encourages low carbon travel options	Ongoing
Monitor and report	Achieved. Report to University Finance.
Establish reduction targets	Not started - delayed due to CV-19 impacts
Investigate the potential for University EV fleet	Not started - delayed due to CV-19 impacts

5. Staff and Student Commuting

Scope 3 emissions from students and staff travelling to and from their home address (term-time only) to the University.

Baseline	2385 tCO ₂ e 2018/19 staff	8812 tCO ₂ e 2011/12 students
Target	Under review	

5.1 Background

The environmental impact associated with staff and students commuting to and from the University is significant. This section highlights the indirect carbon emissions associated with commuting on a periodic (largely daily) basis. The University Sustainable Travel Plan is currently under review but will look to include scope 3 emission reduction targets alongside and subsequent targets established for increasing sustainable travel.

A target for both staff and student commuting will be determined as part of the Sustainable Travel Plan review due 2024/25 once updated survey data is received.

5.2 Methodology

The data collected for the staff and student travel comes from two sources;

- Periodic staff travel survey- 25% response rate (2018/19)
- Periodic student travel survey- 3% response rate (2011/12)

Within the survey both staff and students were asked their approximate distance to the University and their main mode of travel. For each mode of travel and using the mileage provided (approximated and average figures used) the distance was multiplied by the relevant DESNZ/DEFRA carbon conversion factors for that mode of travel. Assumptions have been made for number of days and weeks travelled then the data extrapolated for those who have not completed the survey. The data has been taken from the travel survey completed in 2018/19 for staff, for students the survey data from 2011/12 has been used as the 2018/19 survey did not have sufficient response. The data for 2019/20 onwards has been estimated from the same survey data but adjusted for reductions due to University closure and working from home requirements due to Covid-19.

5.3 Performance

	2018/19	2011/12	2019/20		2020/21		2021/22		2022/23	
Mode	Total Staff tCO2e	Total Students tCO2e	Total Staff tCO2e	Total Students tCO2e	Total Staff tCO2e	Total Students tCO2e	Total Staff tCO2e	Total Staff tCO2e	Total Staff tCO2e	Total Staff tCO2e
Bus	73	2330	41	1717	40	1677	68	2148	71	2333
Car (Driver & passengers)	1990	4775	1105	3519	1052	3348	1919	4604	1909	4702
Motorbike / Scooter	12	115	7	85	7	83	12	113	12	116
Train	303	1507	168	1111	145	958	261	1300	261	1333
Tram	17	85	9	63	8	51	14	69	14	71
Tonnes CO2e	2395	8812	1330	6493	1251	6117	2273	8234	2267	8555

Table 6 Summary of Scope 3 Carbon Emissions from Staff and Student Commuting

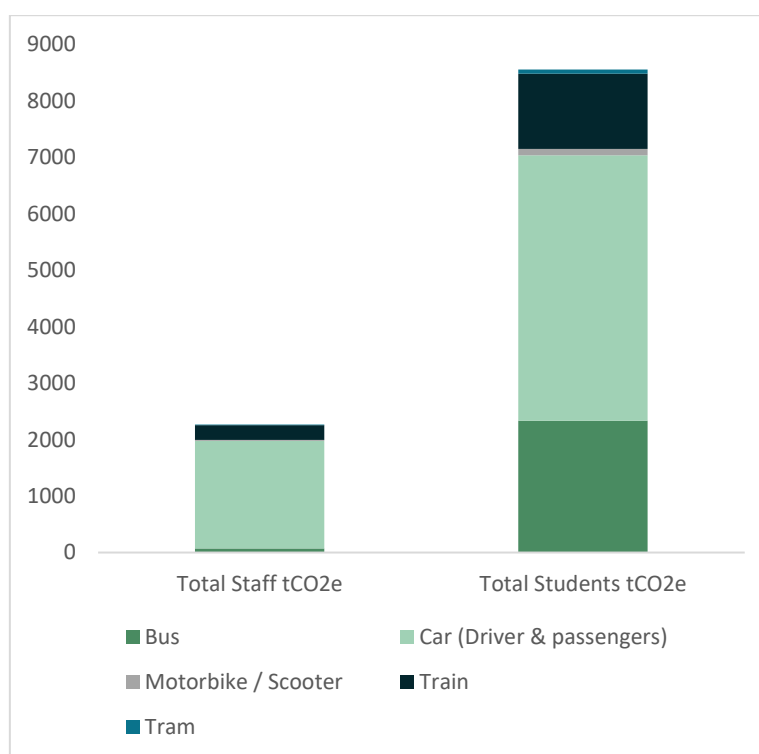


Figure 2 Comparison of Commuting Scope 3 Carbon Emissions

The data for 2022/23 shows a slight decrease in carbon emissions from both student and staff travel in the baseline years. This is a result of decreases in the carbon conversion factors for 2022/23 provided by BEIS.

5.4 Action Plan

Action	Progress to date
University Sustainable Travel Plan review including establishing targets	Achieved. See Sustainable Travel Plan.
Monitor and report	Achieved

6. Students Travel from/to Home Address

Scope 3 emissions from international students travelling from and to their home address to the University.

Baseline	5336 tCO ₂ e
Target	Under review

6.1 Background

In addition to the impact of students commuting to and from the University during term-time, we have also estimated the impact of students travelling to and from the University of Salford at the start and end of term. This section highlights the indirect carbon emissions associated with commuting on a periodic (largely daily) basis.

6.2 Methodology

The data collected for student travel comes from registration data by country. The carbon emissions have been calculated using the Domestic and International Student Relocation Travel Emissions Calculator Tool developed by the University of Aberdeen and EAUC Scotland, V5.0.

Data for 2019/20 onwards has been recalculated using this tool.

6.3 Performance

	2018/19	2019/20	2020/21	2021/22	2022/23
International Students tonnes CO₂e	NR	4111	4944	7275	10,602
Domestic Students tonnes CO₂e	NR	1491	1445	1418	1722
TOTAL	NR	5601	6390	8693	12,324

Table 7 Summary of Scope 3 Carbon Emissions from International Student Travel from/to Home Country

6.4 Action Plan

Action	Progress to date
Monitor and report	Achieved
Review target	Not started

7. Home Working

Scope 3 emissions from home working of University staff.

Baseline	45 tCO ₂ e
Target	N/A

7.1 Background

Due to the CV-19 pandemic, home working increased significantly during 2019/20. A comparison was useful to review the impact of increased home working against reduced commuting and business travel; therefore the carbon impact of home working was estimated for this academic year.

7.2 Methodology

The methodology in the whitepaper produced by EcoAct in partnership with Lloyds Banking Group and NatWest Group was used. Assumptions were made regarding the number of staff working from home and the hours worked. The equipment and lighting power and heating power required was estimated using the whitepaper guidance.

The amount of homeworking is based on estimates from enforced lockdowns but also increase agile working. This data will be reviewed going forward through surveying of staff.

For 2021/22 onwards the methodology provided in the DESNZ/DEFRA carbon conversion factors document has been followed.

7.3 Performance

	2019/20	2020/21	2021/22	2022/23
Tonnes CO₂e	45	59	144	141

Table 8 Summary of Scope 3 Carbon Emissions from staff home working

The carbon from homeworking in 2020/21 has increased slightly due to lockdowns in 2020 and 2021 enforcing homeworking and general increase in agile working on return. This has increased again in 2021/22 and 2022/23 due to a change in methodology and conversion factors. No reduction target will be set for this area as benefits can be seen compared to carbon from staff commuting. This data will be reviewed in the context of the next staff travel survey.

7.4 Action Plan

Action	Progress to date
Monitor and report	Achieved

8. Procurement

Scope 3 emissions for procurement are associated with the goods and services purchased by the University. This covers the emissions occurring in the supply chain. The emissions generated by purchasing goods and services do not only refer to the act of procurement but also covers activities including extraction, production and transportation of the goods/services purchased or acquired.

Baseline	24313 tCO ₂ e 2016/17
Target	Monitor and Measure

8.1 Background

The University of Salford procurement scope 3 carbon emissions are those arising from goods or services procured on behalf of the University.

The University is a member of the North West Universities Purchasing Consortium (NWUPC) which is the organisation from which the University has access to multiple buying frameworks.

Most of the commodities bought by the University are through the frameworks by NWUPC.

NWUPC convert University spend into Proc-HE codes, which can be assigned to a Department for Business, Energy & Industrial Strategy carbon conversion factor for each spend type.

8.2 Methodology

Annual university spend is tracked and converted into Proc-HE code categories and uploaded to the NWUPC Scope 3 emissions calculator. NWUPC uses Department for Business, Energy & Industrial Strategy £/CO₂e conversion factors for each spend type. The methodology has recently been updated using the HESCET tool.

Any spend associated with Electricity, Gas, Water or Waste is removed to prevent a double counting of emissions.

The expenditure data for Supply Chain (Procurement) has been divided into University Operations (sub categories, including: Business Services; Paper Products; Other Manufactured Products; Manufactured Fuels, Chemicals and Glasses; Food and Catering; Information and Communication Technologies; Medical and Precision Instruments) and Construction.

Construction data is highlighted separately due to the considerable fluctuation year on year which is dependent on the University's capital project programme.

8.3 Performance

The total scope 3 carbon emissions from the above categories in the baseline year of 2016/17 is **24313** tCO₂e. This includes 4526 tCO₂e from construction, as shown in the graph below.

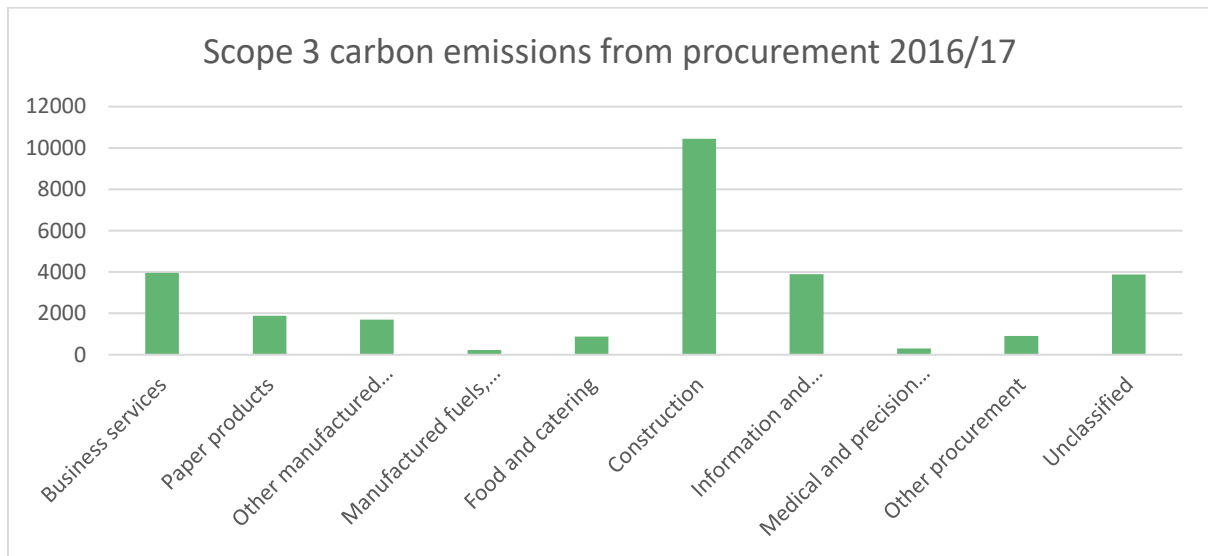


Figure 3 Detail of Scope 3 Carbon Emissions from the Proc-HE code categories

The graph below shows the procurement carbon emissions comparison between 2018/19 (29,775 tCO2e) and 2022/23 (34,987 tCO2e) using the updated methodology.

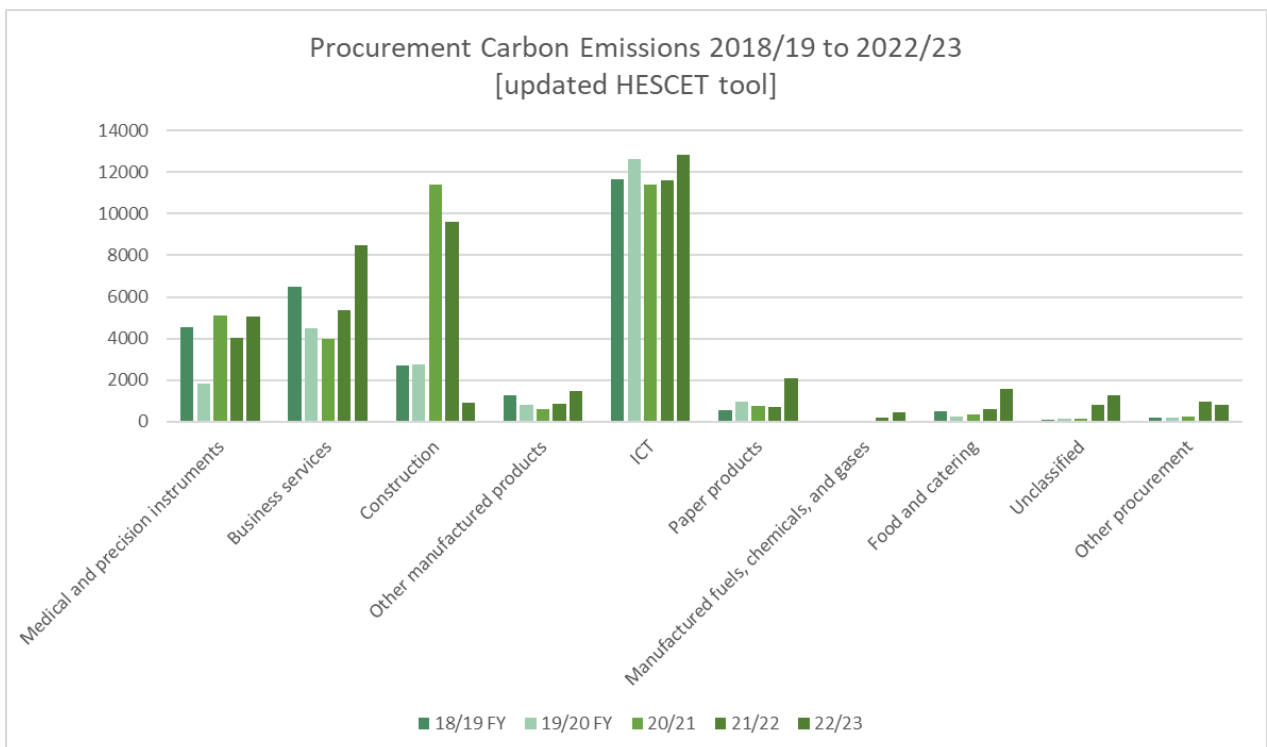


Figure 4 Detailed comparison of 2018/19 and 2019/20 carbon emissions from procurement using HESCET tool

Despite some reductions in 2020/21 (likely due to decreased activity as a result of CV-19), the overall carbon from procurement has increased mainly due to construction. Three significant construction projects were in progress between 2020 and 2022.

8.4 Action Plan

Action	Progress to date
Reach level four of the Flexible Framework	Ongoing
Carry out sustainable and ethical procurement training workshops for staff	Not started
Incorporate sustainability criteria into future purchases and contracts	Some progress – requirement within Estates and Facilities
Implementation of the Energy Design Standard and other environmental criteria into refurbishments and capital projects	Some progress - Sustainable Construction Policy reviewed in 2023/24. Energy Design Standard to be reviewed in 2024/25.
Monitor and report at University senior level	Achieved – Net Zero Carbon now a strategic project

9. Student Accommodation

Scope 3 emissions associated with provision of student accommodation on campus. The emissions included are those generated by gas and electricity consumed by accommodation sites managed by our key partners and do not include those from water, waste etc. Other accommodation sites off campus are not included.

Baseline	883 tCO₂e 2018/19*requires review
Target	Monitor and Measure

9.1 Background

The University partners with Campus Living Villages (CLV), who manage two accommodation villages: Peel Park Quarter, and John Lester and Eddie Colman Courts.

9.2 Methodology

CLV provide energy consumption data which is converted using the relevant DESNZ/DEFRA carbon conversion factors for that type of energy.

9.3 Performance

	2018/19	2019/20	2020/21	2021/22	2022/23
Tonnes CO₂e	883	1262	1663	1644	1323

Table 9 Annual Carbon emissions from linked student accommodation

The total scope 3 carbon emissions from the onsite accommodation in the baseline year of 2018/19 was 883 tonnes of CO₂e. This requires review as significantly lower than subsequent monitored years.

9.4 Action Plan

Action	Progress to date
Continue to monitor and measure scope 3 carbon emissions from CLV accommodation (review baseline year)	Ongoing
Investigate and agree a suitable target for reduction with CLV	Not started
Continue to work with CLV in initiatives such as Green Impact and Go Green Salford	Ongoing
Investigate further initiatives in partnership with CLV and students to encourage energy reductions	Ongoing

10. Electricity & Gas Scope 3 Emissions

In-direct scope 3 emissions associated with the consumption of electricity and gas. This covers the transmission and distribution grid losses of electricity and well-to-tank factors.

Baseline	1924 tCO ₂ e 2016/17
Target	TBC tCO ₂ e 2029/30

10.1 Background

Electricity consumed by the University is accounted for within both the Scope 2 and Scope 3 emission calculations. This is due to the multiple processes involved in supplying electricity from the power plant to the University where energy is lost in transmission and distribution (T&D) from which associated emissions are classed as scope 3. The well-to-tank (WTT) factor also accounts for the upstream Scope 3 emissions associated with extraction, refining and transportation of the raw fuel sources to an organisation's site (or asset), prior to combustion.

The target for reduction in scope 3 carbon emissions from electricity and gas use will be developed in line with the Net Zero Carbon by 2038 Strategy, including an 81% reduction in scope 1 and 2 emissions from 2005/6 baseline and the strategy to move to an all electric campus (which will benefit from decarbonisation of the national grid and use of renewable energy)

10.2 Methodology

Electricity kWh data is converted into carbon using the relevant DESNZ/DEFRA carbon conversion factors.

10.3 Performance

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Electricity T&D, tCO ₂ e	514	380	338	267	229	254	290
Electricity WTT, tCO ₂ e	876	662	555	429	673	665	743
Electricity WTT T&D, tCO ₂ e	82	56	47	37	60	61	64
Gas WTT, tCO ₂ e	452	384	311	304	463	407	377
Fuel Use WTT, tCO ₂ e			9	6	3	4	2
TOTAL	1924	1482	1260	1043	1428	1392	1476

Table 10 Summary of Scope 3 Carbon Emissions from Electricity and Gas Use

10.4 Action Plan

Action	Progress to date
Manage electricity and gas performance based on Electricity, Water and Carbon Management Plan and ISO 50001 targets and management plans	Ongoing
Develop Net Zero Carbon Roadmap	Buildings Energy Efficiency and Decarbonisation Plan due by end 2023/24