



University for the Common Good

Carbon Footprint Report for 2023-24

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Author: Kärt Tori & Paulo Cruz

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Executive Summary

Glasgow Caledonian University (the University) reports its greenhouse gas emissions (GHG) annually, with reports used to improve performance, meet compliance obligations and track progress towards the University's own environmental commitments.

The overall reporting approach is unchanged, with the University following the GHG Protocol Standards and adhering to the principles of accuracy, completeness, consistency, relevance and transparency. The reporting boundaries (operational control) are remaining the same. There have, however, been improvements in data granularity, with the introduction of the ability to report data for London separately.

In 2023-24 the University's GHG emissions' inventory (all Scopes) was 51,005 tonnes CO₂e. This represents a 1.3% decline in emissions from the previous reporting period (2022-23) and a 28% increase relative to the 2014-15 baseline (Figure 1 and Table 1).

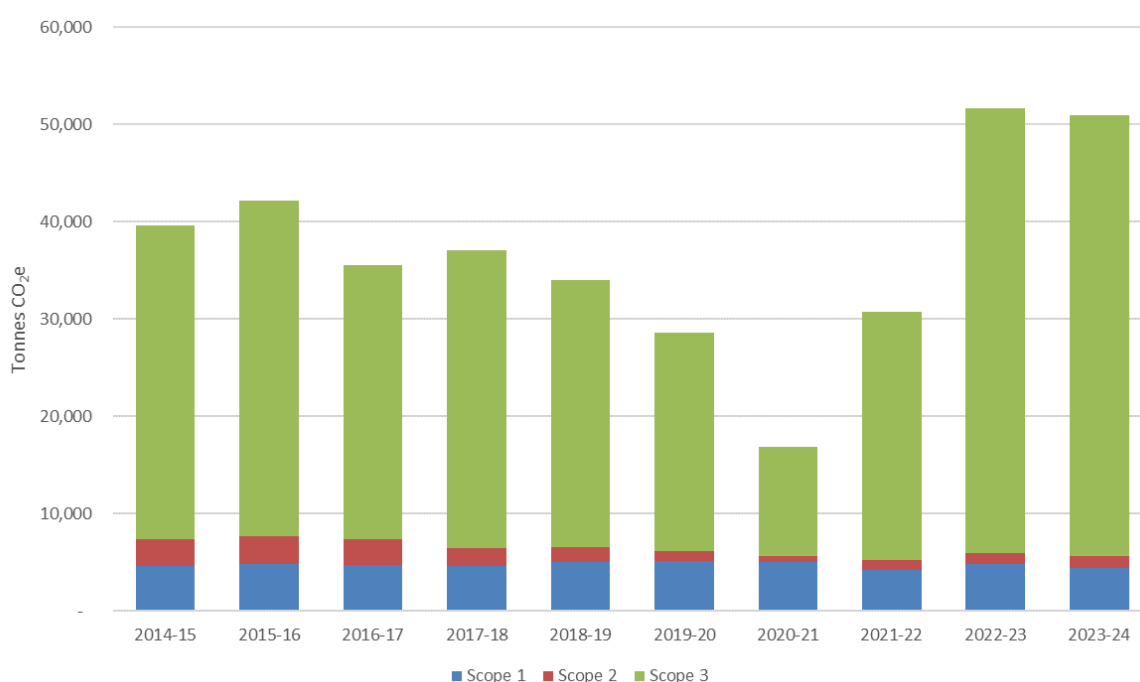


Figure 1. University's GHG emissions breakdown (Tonnes of CO₂e by Scopes) since 2014-15 baseline year.

Change relative to:	Scope 1	Scope 2	Scope 3	Total Emissions
Previous (2022-23)	-7% (335 tCO ₂ e)	+8% (89 tCO ₂ e)	-1% (423 tCO ₂ e)	-1.3% (671 tCO ₂ e)
Baseline (2014-15)	-4% (170 tCO ₂ e)	-57% (1,579 tCO ₂ e)	+41% (13,139 tCO ₂ e)	+28% (11,390 tCO ₂ e)

Table 1 Changes in 2023-24 GHG emissions relative to previous reporting period (2022-23) and the University's baseline (2014-15).

Year-on-year changes in Scope 1 and 2 reflect minor changes in how the University uses gas and electricity, whilst Scope 3 changes are not significant. Relative to the baseline, changes in Scope 1 and 2 reflect improvements in the University's energy efficiency, and decarbonisation of the National Grid (for electricity). Changes in Scope 3 reflect a fundamental change in where non-UK domiciled students travel from.

It is anticipated that Scope 1 and 2 emissions will continue to fall as the University ramps up its climate mitigation activity and the national grid (electricity) decarbonisation continues. The

University will also continue to deliver climate action on activities included in Scope 3 emissions (as detailed in its various thematic action plans¹).

¹ Available from the University's [sustainability web pages](#).

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Introduction

Glasgow Caledonian University (the University) reports its greenhouse gas emissions (GHG) annually and through its Environmental Management System uses them to benchmark performance, target improvements, assess progress towards environmental commitments, and meet compliance obligations.

The 2023-24 reporting period is considered a normal operating period with no exceptional circumstances affecting University operations.

Data & Methodology

The University reports its GHG emissions according to the GHG Protocol Standards² and adheres to the reporting principles of: accuracy, completeness, consistency, relevance and transparency. The reporting boundaries (operational control) and overall methodology for the 2023-24 GHG emissions inventory are the same as those used in previous reporting periods.

Whilst the general approach and datasets have not changed (Table 2), the 2023-24 inventory incorporates the following changes:

- Created the ability to report emissions from operations in London separately (although this does not yet cover all emission categories – e.g. UK domiciled student travel home).
- Included emissions from the University's travel for the University's international mobility programme.

There have also been a number of corrections and updates in emission factors (e.g. waste produced and investments held by the University), the most significant being a correction of a calculation error (since 2022-23) for the 'Working from Home' emission factor.

It is also noted that although the data and calculations in this report were not subject to independent verification or quality assurance, they benefited from a peer review exercise with the University of Glasgow (in collaboration with the EUAC – Scotland).

² Greenhouse Gas Protocol – [Corporate Standard](#) and [Corporate Value Chain \(Scope 3\) Standard](#).

Emission Category	Scope	Emission Activity	Data quality observations
Organisation's buildings	1	Gas consumption	High quality data derived from gas meter readings.
Organisation's buildings	1	Refrigerant Gases	High quality data derived from contractors' measurements of systems' fluorinated gas charge.
Organisation's vehicles	1	Business travel (own fleet)	High quality data derived from fuel card reports.
Purchased electricity	2	Electricity (Nat. Grid) Total	High quality data derived from electricity meter readings.
Purchased Goods & Services	3	Water	High quality data derived from water meter readings.
Purchased Goods & Services	3	Procurement - HEPA tool (formerly HESCET tool)	Low-medium quality data. Derived from spend data. Excl. capital goods (reported separately).
Other fuel & energy rel. activities	3	Electricity (transmission & distribution losses)	High quality data derived from electricity meter readings.
Other fuel & energy rel. activities	3	Well-to-tank emissions from fuels/energy reported as scope 1 and 2	High quality data derived from consumption data (as detailed above).
Waste Generated in Operations	3	General Waste & recycling	Medium-high. Data for Glasgow derived from contractors' weighing systems. Includes waste data for refurbishment projects. C. Court and GCU London based on historic estimates.
Waste Generated in Operations	3	Wastewater	High quality data derived from water meter readings. Assumed 95% of purchased water becomes wastewater.
Business travel	3	Travel (business – not owned)	Medium-high. Derived from supplier records and expenses claims systems,
Business travel	3	International mobility (exchange) programmes	High quality data derived from student records (and which include details of destination and mode of travel).
Business travel	3	Well-to-tank emissions for fuels used in 'Travel (business – not owned)' (above)	High. Derived from supplier records.
Employee commuting	3	Travel (commuting – staff)	Medium quality. Glasgow data derived from 2022 Travel Survey. London data derived from 2024 Travel Survey.
Employee commuting	3	Working from home (staff)	Medium quality. Derived from 2022 travel survey. Derived from Scottish Government intensity factor for FTE.
Downstream transportation and distribution	3	Travel (commuting – students)	Medium quality. Glasgow data derived from 2022 Travel Survey. London data derived from 2024 Travel Survey
Downstream transportation and distribution	3	UK domiciled students – travel home.	Low-medium. Based on historic travel surveys (not 2022).
Downstream transportation and distribution	3	International students – travel home.	Low-medium. Based on historic travel surveys (not 2022).
Investments	3	Investments	Medium. Derived from carbon intensity of portfolio value.
Capital Goods	3	Procurement - HEPA tool (formerly HESCET tool)	Low-medium quality data. Derived from spend data.

Table 2 Observations on data quality for the University's GHG emissions inventory. New emission categories are identified in bold text and new activity datasets in **bold underlined** text. New data observations are highlighted grey.

Inventory & Emissions

In 2023-24 the University's GHG emissions' inventory was 51,005 tonnes CO₂e, a 1% decrease on the previous reporting period (2022-23). They are also 29% higher than the 2014-15 baseline. These emissions are marginally higher than in the previous reporting period due to a calculation error (in emission from staff working from home).

Figure 2 and Table 3 provide a summary of the University's current and historic GHG emissions. Figure 3 provides a breakdown by Activity Category in each Scope, whilst Figure 4 provides a breakdown by thematic grouping. Trends within the thematic groupings are discussed in the next sections. Appendix A contains the University's full GHG emissions' inventory for 2023-24.

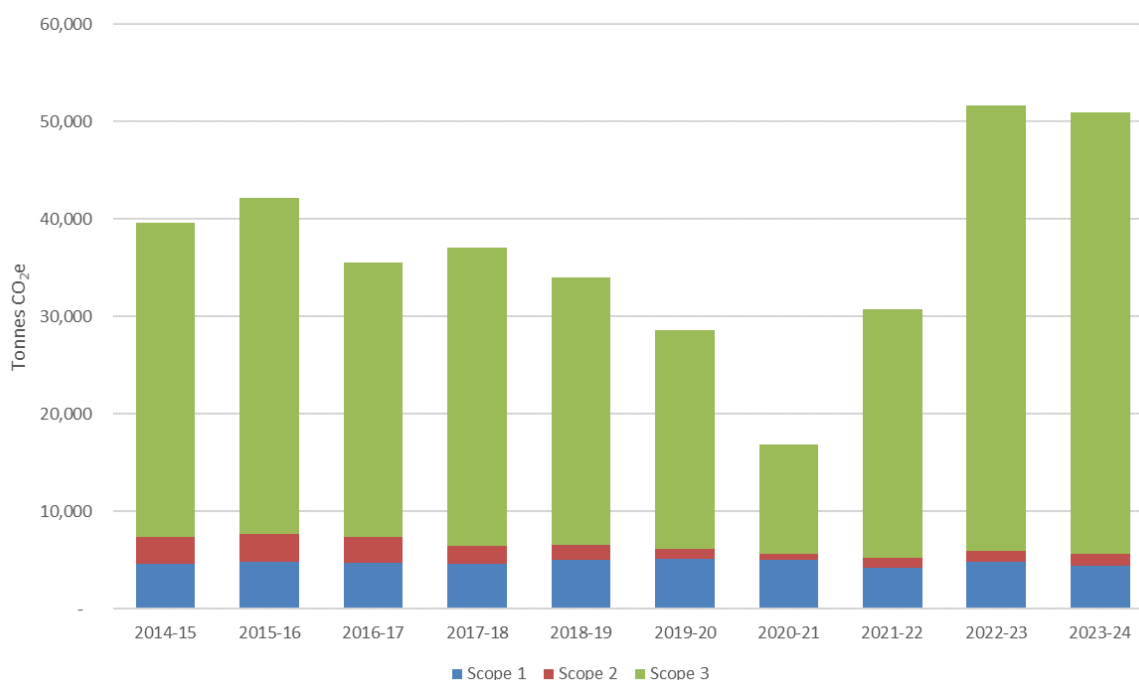


Figure 2 The University's GHG emissions (tonnes CO₂e by scope) since 2014-15.

Scope	Academic Year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	Direct combustion of fuels and other fugitive emissions.	4,598	4,794	4,745	4,589	4,974	5,136	4,970	4,171	4,763	4,428
2	Electricity from the National Grid.	2,784	2,902	2,613	1,881	1,576	998	601	1,040	1,116	1,205
3	Other up- and downstream activities out-with the University's operational control.	32,232	34,509	28,200	30,625	27,503	22,415	11,022	25,564	45,794	45,371
Total		39,615	42,205	35,557	37,095	34,053	28,549	16,593	30,775	51,673	51,005

Table 3 The University's GHG emissions (tonnes CO₂e) by scope ~~for~~ since 2014-15.

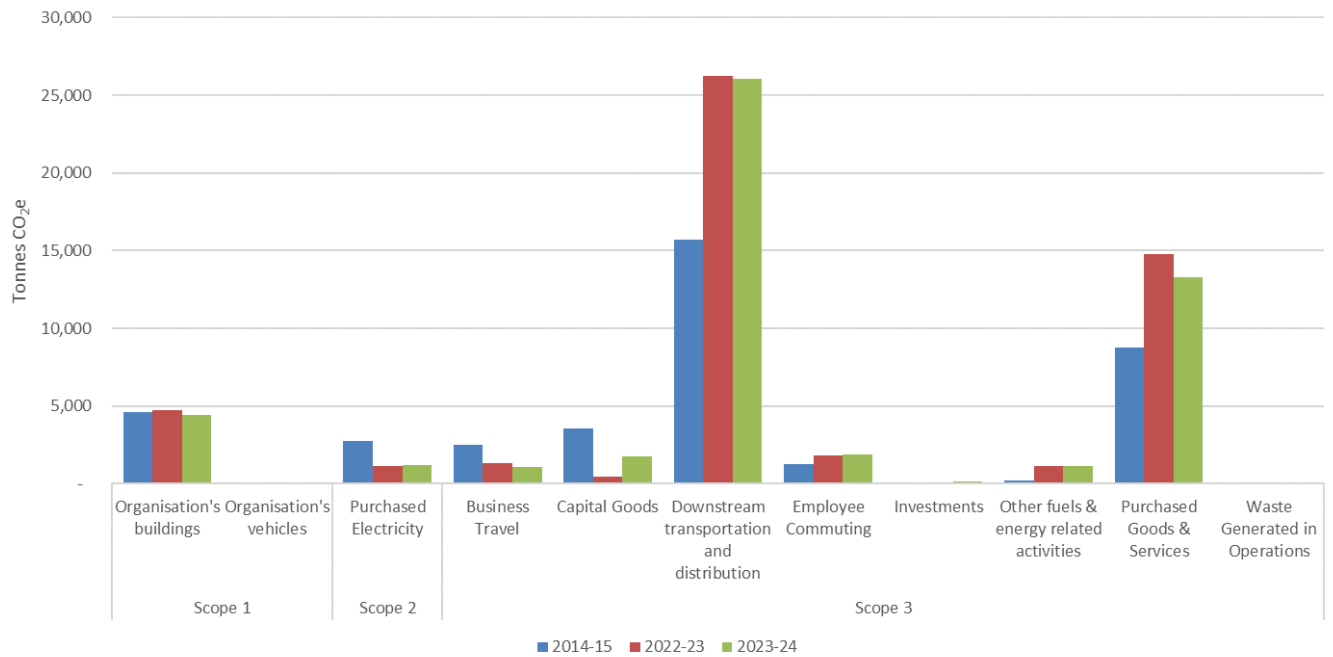


Figure 3 GHG emissions by activity category for 2023-24 compared to the previous reporting period (2022-23) and the University's baseline (2014-15).

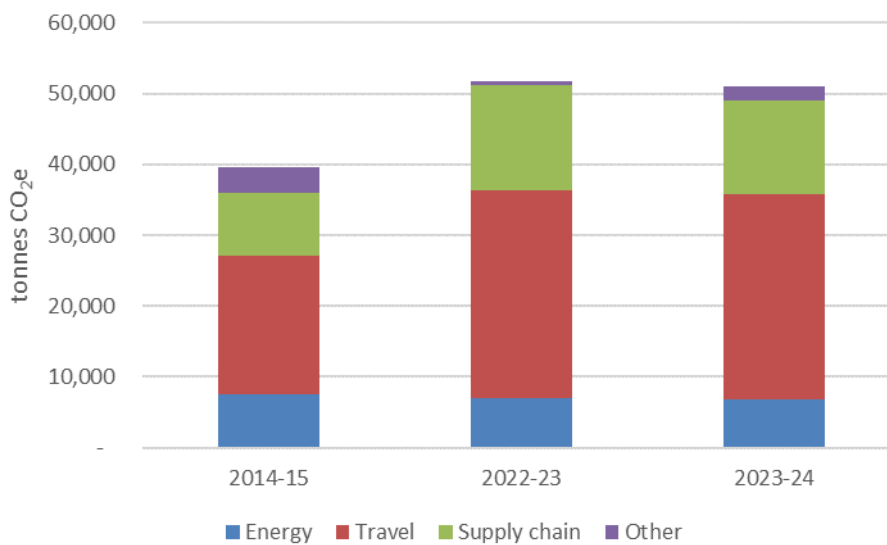


Figure 4 GHG emissions by thematic grouping for 2023-24 compared to the previous reporting period (2022-23) and the University's baseline (2014-15).

Trends & Observations

The 2023-24 reporting period is considered a normal operating period with no exceptional circumstances affecting the University's operations. The sections below explore how emissions in each of the thematic groups have changed since the previous reporting period (2022-23) and the University's baseline (2014-15).

Travel

In the 2023-24 reporting period, travel activity at the University emitted 29,011 tCO₂e, (56% of total reported emissions). The majority of travel emissions are reported as Scope 3, with the exception being emissions from the University's fleet (8.22 tCO₂e) which are reported as Scope 1.

Reported emissions include well-to-tank (WTT) emissions for fuels associated with business travel because they provide a more comprehensive insight into the climate impact of the University’s business travel decisions. In this reporting period, emissions from the University’s international mobility (exchange) programme were added as business travel (and back-dated for 2022-23).

Travel emissions are comparable to the previous reporting period (with a 1.2% decrease), but 48% higher than the baseline. The increase relative to the baseline is due to an increase in student numbers and where international students travel from. A breakdown of emissions in this category is provided in Figure 5.

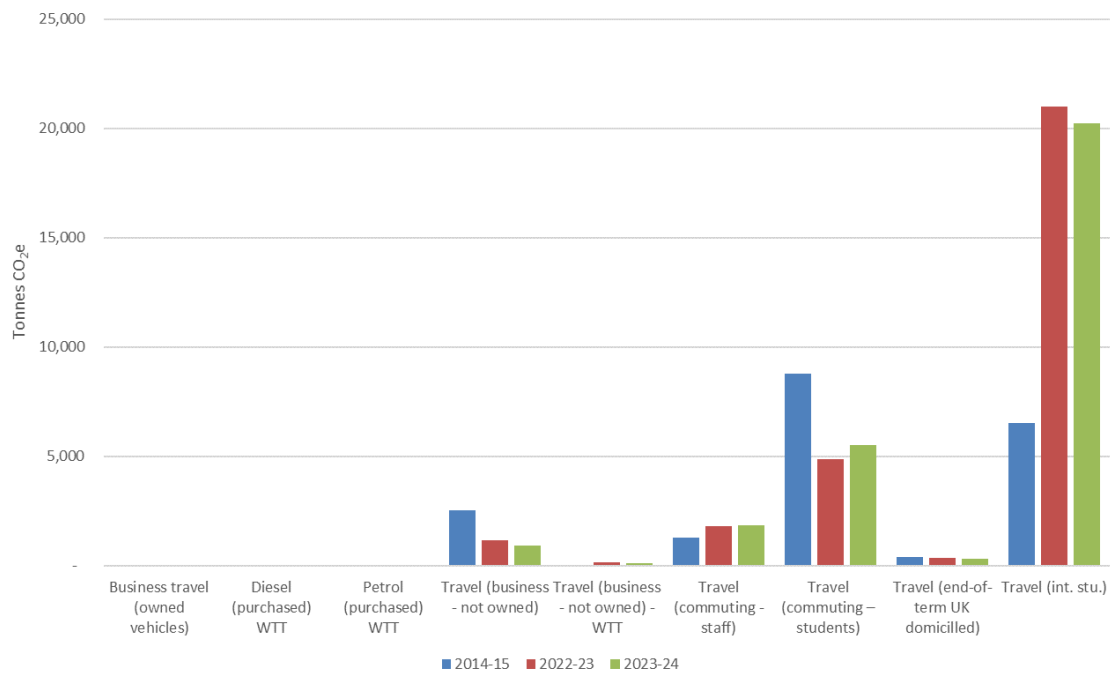


Figure 5 GHG emissions from travel to, from and on-behalf of the University for 2024-24 compared to the previous reporting period (2022-23) and the University’s baseline (2014-15).

Supply Chain

Supply chain emissions are reported as Scope 3 and are derived primarily from spend-based intensity factors for spend with suppliers the University does not have direct ‘activity’ data for. In 2023-24 emissions attributed to the University’s supply chain contributed 13,267 tCO₂e to the University’s GHG inventory (26% of all reported emissions). These emissions are 10 % lower than in the previous reporting period. Relative to the 2014-15 baseline, emissions from the University’s supply chain are 51% higher and aligned to growth in the University’s budget. Figure 6 shows the change in supply-chain emissions.

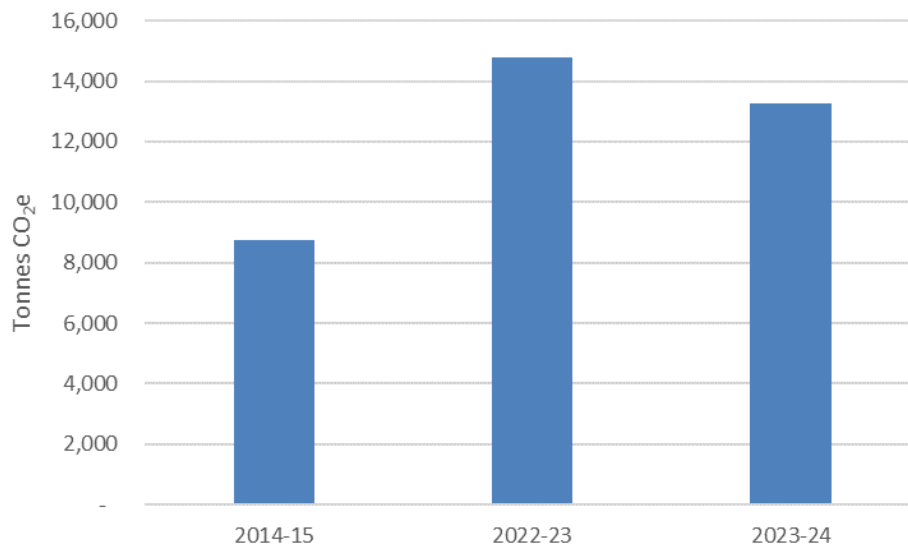


Figure 6 Supply chain emissions (tCO_{2e}) for 2023-24 compared to the previous reporting period (2022-23) and the University's baseline (2014-15).

Supply chain emissions are derived from spend with 902 suppliers, with the top 50 suppliers (by GHG emissions) being responsible for just over 77% of total supply chain emissions.

The main source of emissions (by Proc HE category³) is software supplies which represented 34% of all supply chain emissions (Table 4). The top 10 Proc HE categories account for nearly 72% of supply chain emissions.

Proc HE category description	tCO _{2e}	No. Suppliers	% supply chain emissions	Rank
IT Software including Bespoke Licences Maintenance	4805.939262	47	34.25%	1
Catering Services Outsourced at a fixed site	2000.145799	5	14.26%	2
Medical, Small Apparatus, Equipment and Instruments	591.5264266	30	4.22%	3
Building Related Professional Services	480.7008563	17	3.43%	4
Other/General Computer Supplies and services	394.7091885	32	2.81%	5
Temporary & Recruitment Employment Agencies (Staff)	393.3058857	16	2.80%	6
Consultancy include IT excluding Estates	390.9586689	55	2.79%	7
Data Information Services	371.2682793	13	2.65%	8
Bespoke IT Solutions	352.7585034	1	2.51%	9
Travel Agency Services	265.354511	2	1.89%	10

Table 4 Top 10 Proc HE categories for GHG emissions (tCO_{2e}) in the University's supply chain in 2023-24.

It is noted from historical analysis of this dataset that emissions for some suppliers in the Proc HE categories are over estimated, and where activity data is available the University will seek to use this instead where emissions exceed the 1% materiality threshold.

The methodology for estimating supply chain emissions is also not sufficiently sensitive to reflect the University's individual procurement decisions, but reporting these emissions helps identify hot-spots

³ Proc HE is a national Commodity Coding convention used by the HE Sector and Local Authorities.

to focus on and suppliers to engage to understand how they can support the University’s climate commitments.

Energy

Emissions from energy used throughout the University’s Estate are reported as all three scopes (although only the Scope 1 and 2 emissions are included in the University’s carbon neutrality target).

In 2023-24 the University emitted 6,729 tCO₂e (13% of all reported emissions), 2% lower than the previous reporting period (2022-23) and 11% lower than the 2014-15 baseline. 65% of emissions were attributed to gas (Scope 1), 18% to purchased electricity (Scope 2) and the remaining 17 % to transmission and distribution losses of purchased electricity and well-to-tank emissions for all purchased energy (Scope 3) (Figure 7).

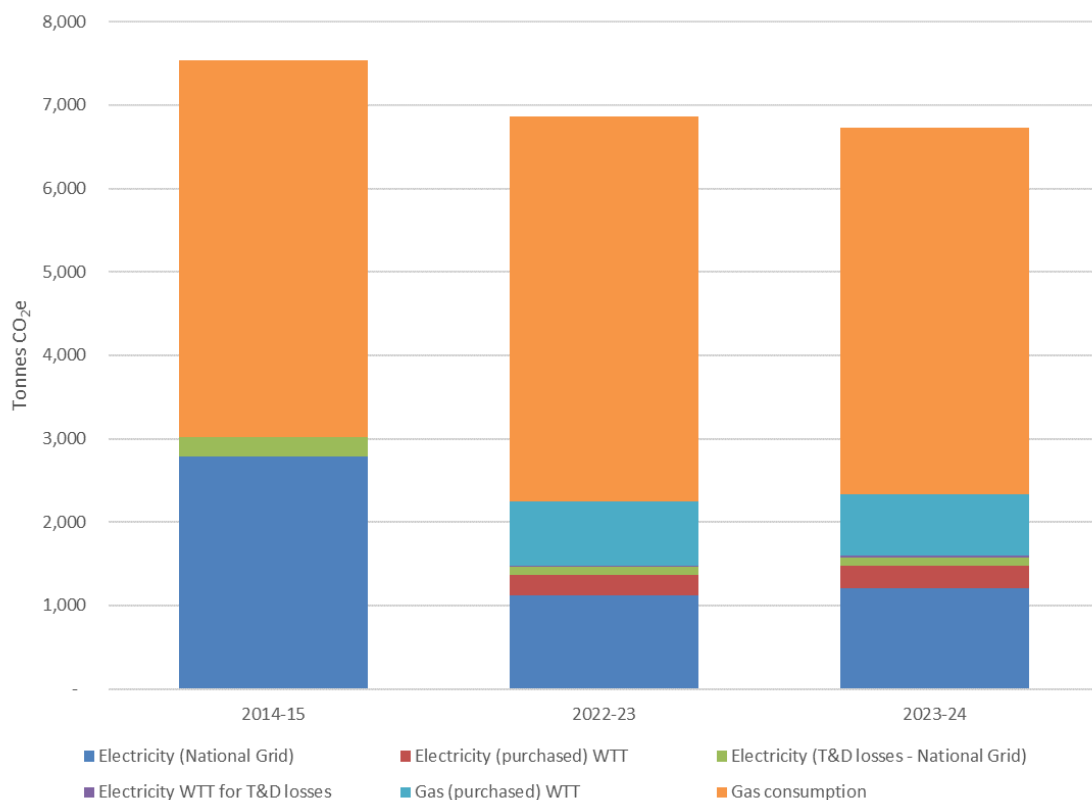


Figure 7 GHG emissions for energy use at the University (including ‘other energy emissions’ such as transmission and distribution losses and well-to-tank emissions) for 2023-24 compared to the previous reporting period (2022-23) and the University’s baseline (2014-15).

Historically (prior to 2021-22), emissions from energy were reported primarily for consumption (electricity transmission and distribution losses were also reported). Figure 8 is therefore included to provide a like-for-like comparison of historic emissions from energy consumption only.

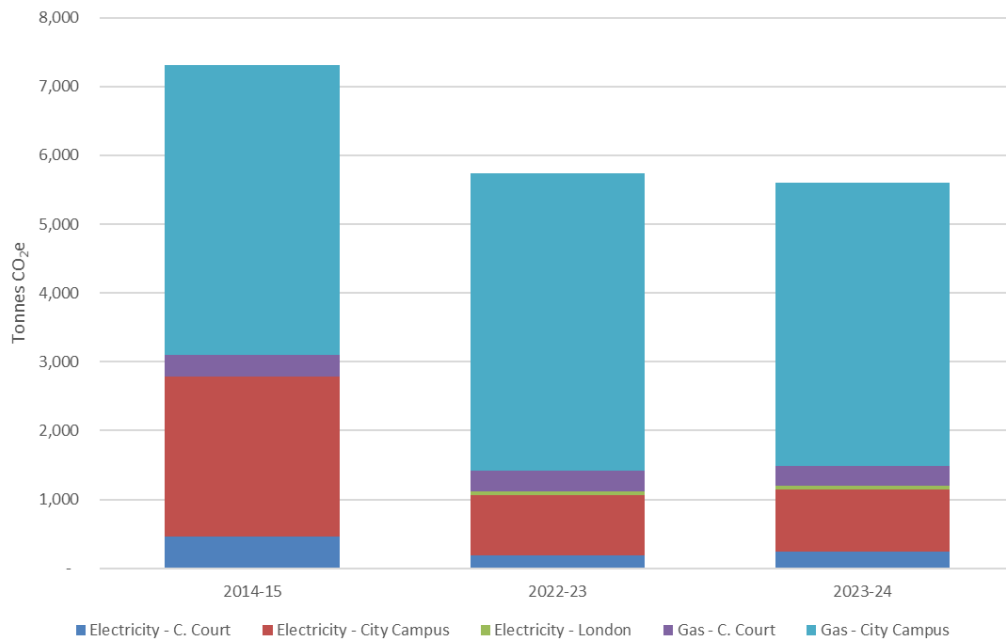


Figure 8 Energy consumption emissions only (i.e. without scope 3 emissions for transmission and distribution losses or well to tank emissions) for 2023-24, 2022-23 and 2014-15 (the University's reporting baseline).

There is a generally downward trend in emissions from energy use with a 2% reduction in 2023-24 compared to 2022-23, and a 23% reduction relative to the 2014-15 baseline.

It is anticipated that energy emissions will continue to fall as a result of further demand reduction, improved efficiency and further supply decarbonisation. There may also be an additional opportunity to accentuate this trend by considering space utilization and productivity.

Other

Emissions from other activity, which includes Capital Projects, Capital Equipment (reported separately for this reporting period), Investments, Refrigerants, Waste and Recycling, Wastewater and Water were 1,954 tCO₂e compared to 659 tCO₂e in the previous reporting period (Table 5). With the exception of refrigerants (reported as Scope 1), emissions in this category are reported as Scope 3.

There is insufficient historical data to comment on trends for Capital Equipment, disaggregated from the University's supply-chain emissions in this reporting period. Emissions from Capital Projects have increased, but the underlying causes are unclear. Emissions from refrigerant losses are lower, but within historical fluctuations (commensurate with the age and condition of refrigeration equipment at the University). Emissions from Waste and Recycling are lower due to lower arisings and lower emission factor (72%). Emissions from Investments have increased, mainly due to the readjustment of emissions factors (19% increase for Endowment B and 137% increase for Pension). All other emission categories within this group are comparable to previous reporting periods.

Source	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Capital Equipment										1,065
Capital Projects									439	729
Investments							140	72	55	129
Refrigerant Gases	61	225	162	100	25	103	159	42	135	20
Waste & Recycling	67	62	84	81	17	13	3	14	13	3
Wastewater	34	32	14	27	27	7	2	4	5	5
Water	17	16	15	14	14	3	1	2	3	3
Total	179	335	275	222	82	125	306	134	659	1,954

Table 5 Other emissions in the University's emission inventory since 2014-15.

Progress towards Carbon Neutrality

This section provides a high-level overview of progress towards the University's carbon neutrality commitment (Scopes 1 and 2) by 2040, including interim targets for 2030.

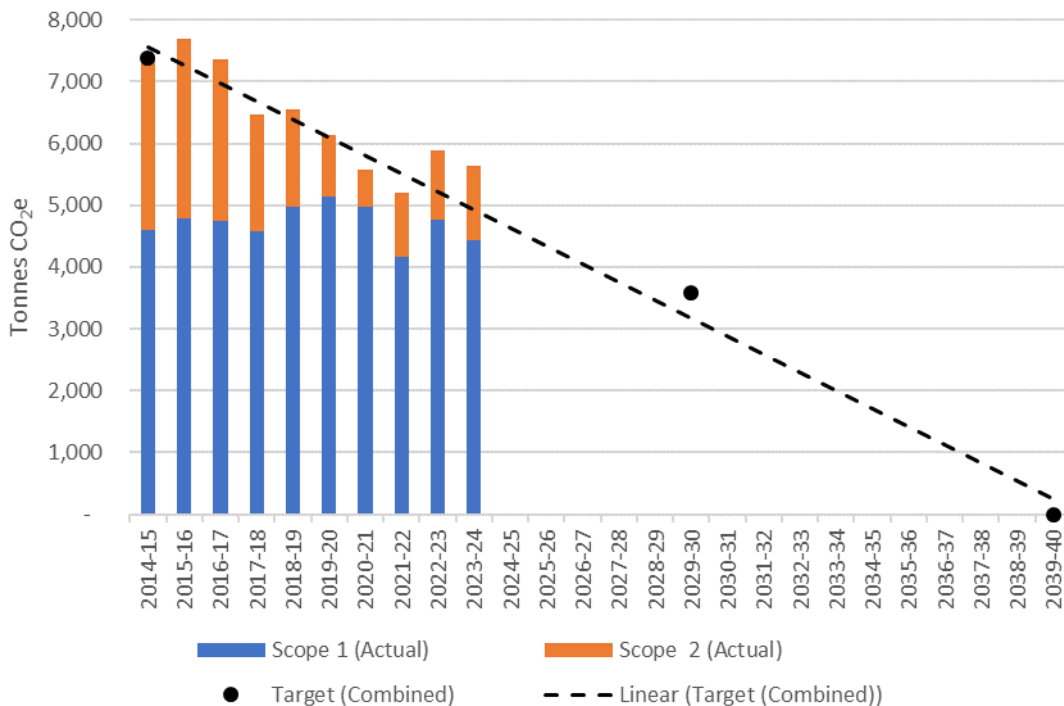


Figure 9 Historic and actual emissions compared to target for 2030 and 2040. 'Trendline' include to facilitate comparison of progress.

Figure 9 shows that whilst emissions are on a downward (straight-line) trajectory, the University will need to enhance emission mitigation efforts to achieve its targets. Some activity is already underway and will be reflected in future reporting periods. This and subsequent activity will be detailed in the University's forthcoming Estates Carbon Neutrality Roadmap.

Closing Remarks

For the 2023-24 reporting period, emissions across the estate are comparable to 2022-23 and approximately 28% more than the 2014-25 baseline. The increase is attributed to changes in where non-UK domiciled students travel from and is restricted to Scope 3 emissions. Scope 1 and 2

(combined) show a 5% year-on-year decrease and a 24% decrease relative to the 2014-15 baseline. It is anticipated that Scope 1 and 2 emissions will continue to fall as the University accelerates its climate mitigation activity and the national grid (electricity) decarbonisation continues to gather pace. The University will also continue to deliver climate action on activities included in Scope 3 emissions.

Appendix A - Full GHG Emissions Inventory

Glasgow Caledonian University's full GHG emissions inventory for 2023-24 is presented below. A spreadsheet with this and previous inventories is available from: <https://www.gcu.ac.uk/aboutgcu/commongood/sustainability/data>

Scope	Emission Activity	Source	Data Source	Qty	Qty (U)	EF	EF (U)	EF Source	tonnes CO2e	Acc Year
1	Gas consumption	City Campus	City Campus	27,487,502	KWh	0.1829	kg CO2e/kWh	Defra: Fuels (Energy gross - CV) 2024	4,112.96	2023-24
1	Gas consumption	C. Court	C. Court - P2	1,570,692	KWh	0.1829	kg CO2e/kWh	Defra: Fuels (Energy gross - CV) 2024	287.28	2023-24
1	Refrigerant Gases	R134A			kg	1,300	kg CO2e/kg	Defra: Refrigerant & Other (2024)	-	2023-24
1	Refrigerant Gases	R410A		8.1	kg	1,924	kg CO2e/kg	Defra: Refrigerant & Other (2024)	15.58	2023-24
1	Refrigerant Gases	R404A			kg	3,943	kg CO2e/kg	Defra: Refrigerant & Other (2024)	-	2023-24
1	Refrigerant Gases	R407C			kg	1,624	kg CO2e/kg	Defra: Refrigerant & Other (2024)	-	2023-24
1	Refrigerant Gases	R22		1.0	kg	1,810	kg CO2e/kg	Defra: Refrigerant & Other (2023)	1.81	2023-24
1	Refrigerant Gases	R453a			kg	1,765	kg CO2e/kg	https://nationalref.com/products/453a/ (31/8/2022)	-	2023-24
1	Refrigerant Gases	R422A		0.9	kg	2,847	kg CO2e/kg	Defra: Refrigerant & Other (2024)	2.55	2023-24
1	Refrigerant Gases	R422D			kg	2,729	kg CO2e/kg	Defra: Refrigerant & Other (2023)	-	2023-24
1	Business travel (owned vehicles)	Petrol		1,284	litres	2,0844	kg CO2e/litre	Defra: Fuels - Petrol Diesel (average biofuel blend) 2024	2.68	2023-24
1	Business travel (owned vehicles)	Diesel		2,206	litres	2,5128	kg CO2e/litre	Defra: Fuels - Diesel (average biofuel blend) 2024	5.54	2023-24
2	Electricity (National Grid)	City Campus	City Campus	4,393,276	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	909.05	2023-24
2	Electricity (National Grid)	C. Court - P1		872,555	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	180.66	2023-24
2	Electricity (National Grid)	C. Court - P2		271,718	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	56.26	2023-24
2	Electricity (National Grid)	London	40-48 Fashion St.	222,863	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	46.14	2023-24
2	Electricity (National Grid)	London	Unit 2 - 3 - 11-28 Fashion St. - top floor	3,063	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	0.63	2023-24
2	Electricity (National Grid)	London	Unit 2 - 11-28 Fashion St. - ground floor	6,793	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	1.41	2023-24
2	Electricity (National Grid)	London	120 Vallance Rd.	50,348	kWh	0.2071	kg CO2e/kWh	Defra: UK electricity 2024	10.42	2023-24
3	Water	Glasgow		28,077	m3	0.1000	kg CO2e/m3	PBCOD Template EF(2024)	2.81	2023-24
3	Water	London	GCU London Meter Readings	22	m3	0.1531	kg CO2e/m3	DEFRA: Water Supply 2024	0.00	2023-24
3	Supply chain (not otherwise accounted for)								13,267.00	2023-24
3	Capital Projects								729.00	2023-24
3	Capital Projects								1,055.00	2023-24
3	Electricity (T&D losses - National Grid)	All Glasgow		5,537,549	kWh	0.0183	kg CO2e/kWh	Defra: T&D - UK Electricity 2024	101.34	2023-24
3	Electricity (T&D losses - National Grid)	All London		283,067	kWh	0.0183	kg CO2e/kWh	Defra: T&D - UK Electricity 2024	5.18	2023-24
3	Electricity (purchased) WTT	All Glasgow		5,537,549	kWh	0.0459	kg CO2e/kWh	DEFRA: WTT UK electricity (generation) 2024	254.17	2023-24
3	Electricity (purchased) WTT	All London		283,067	kWh	0.0459	kg CO2e/kWh	DEFRA: WTT UK electricity (generation) 2024	12.99	2023-24
3	Electricity WTT for T&D losses	All Glasgow		5,537,549	kWh	0.0040	kg CO2e/kWh	DEFRA: WTT UK electricity (T&D) 2024	21.98	2023-24
3	Electricity WTT for T&D losses	All London		283,067	kWh	0.0040	kg CO2e/kWh	DEFRA: WTT UK electricity (T&D) 2024	1.12	2023-24
3	Gas (purchased) WTT	All		24,058,194	kWh	0.0302	kg CO2e/kWh	DEFRA: WTT Fuels 2024	726.80	2023-24
3	Petrol (purchased) WTT	Petrol - All		1,284	litres	0.5809	kg CO2e/litre	DEFRA: WTT Fuels 2024	0.75	2023-24
3	Diesel (purchased) WTT	Diesel - All		2,206	litres	0.6110	kg CO2e/litre	DEFRA: WTT Fuels 2024	1.35	2023-24
3	Waste & Recycling (C&I) - London	Landfill	Estimated - London		tonnes		kg CO2e/tonne	Defra: Waste Disposal 2024	-	2023-24
3	Waste & Recycling (C&I) - London	Mixed Recycling	Estimated - London	0.95	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.01	2023-24
3	Waste & Recycling (C&I) - London	Combustion	Estimated - London	7.90	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.05	2023-24
3	Waste & Recycling (C&I) - Campus	Landfill - SAMPRO/GW	Estimated - Glasgow		tonnes		kg CO2e/tonne	Defra: Waste Disposal 2024	-	2023-24
3	Waste & Recycling (C&I) - Campus	Combustion		3.90	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.03	2023-24
3	Waste & Recycling (C&I) - Campus	Mixed Recycling		174.54	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	1.12	2023-24
3	Waste & Recycling (C&I) - Campus	Organic: Food & drink waste - AD		11.78	tonnes	8.8839	kg CO2e/tonne	Defra: Waste Disposal 2024	0.10	2023-24
3	Waste & Recycling (C&I) - Campus	Glass - Recycling		1.63	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.01	2023-24
3	Waste & Recycling (C&I) - Campus	Paper - Recycling		8.43	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.05	2023-24
3	Waste & Recycling (C&I) - Campus	Metal - Recycling		15.49	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.10	2023-24
3	Waste & Recycling (C&I) - Campus	Cardboard - Recycling		8.22	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.05	2023-24
3	Waste & Recycling (C&I) - Campus	Wood - Recycling		23.42	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.15	2023-24
3	Waste & Recycling (C&I) - Campus	WEEE - mixed - recycling		14.77	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.09	2023-24
3	Waste & Recycling (Municipal) - Court	Landfill	Estimated		tonnes		kg CO2e/tonne	Defra: Waste Disposal 2024	-	2023-24
3	Waste & Recycling (Municipal) - Court	Combustion	Estimated	107.27	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.69	2023-24
3	Waste & Recycling (Municipal) - Court	Organic: Food & drink waste - AD	Estimated		tonnes		kg CO2e/tonne	Defra: Waste Disposal 2024	-	2023-24
3	Waste & Recycling (Municipal) - Court	Mixed Recycling	Estimated	40.07	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.26	2023-24
3	Waste & Recycling (C&D) - Campus	Wood - recycling		4.40	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.03	2023-24
3	Waste & Recycling (C&D) - Campus	Metal: scrap metal - recycling		4.70	tonnes	0.9849	kg CO2e/tonne	Defra: Waste Disposal 2024	0.00	2023-24
3	Waste & Recycling (C&D) - Campus	Plastics: average plastics - recycling (open loop)		0.30	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.00	2023-24
3	Waste & Recycling (C&D) - Campus	Plasterboard - recycling		8.20	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.05	2023-24
3	Waste & Recycling (C&D) - Campus	Average construction - recycling (open loop)		40.88	tonnes	0.9849	kg CO2e/tonne	Defra: Waste Disposal 2024	0.04	2023-24
3	Waste & Recycling (C&D) - Campus	WEEE - mixed - recycling		0.10	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.00	2023-24
3	Waste & Recycling (C&D) - Campus	Combustion		0.32	tonnes	6.4106	kg CO2e/tonne	Defra: Waste Disposal 2024	0.00	2023-24
3	Waste & Recycling (C&D) - Campus	Average construction - landfill		0.39	tonnes	12.339	kg CO2e/tonne	Defra: Waste Disposal 2024	0.00	2023-24
3	Wastewater	Glasgow		26,673	m3	0.1800	kg CO2e/m3	PBCOD Template EF(2024)	5.07	2023-24
3	Wastewater	London		21	m3	0.1852	kg CO2e/m3	DEFRA: water treatment 2024	0.00	2023-24
3	Travel (business - not owned)	Grey fleet - Average car - unknown	Glasgow	23,386	miles	0.2686	kg CO2e/mile	Defra: Business travel - land (cars (average - unknown)) 2024	6.28	2023-24
3	Travel (business - not owned)	Grey fleet - Average car - unknown	London	268	miles	0.2686	kg CO2e/mile	Defra: Business travel - land (cars (average - unknown)) 2024	0.07	2023-24
3	Travel (business - not owned)	Grey fleet - Average motorbike			miles		kg CO2e/mile	Defra: Business travel - land (motorbike - average) 2024	-	2023-24
3	Travel (business - not owned)	Hired - Medium petrol car		57,024	miles	0.2683	kg CO2e/mile	Defra: Business travel - land (cars (by size)) 2024	16.27	2023-24
3	Travel (business - not owned)	Hired - Medium diesel car		8,956	miles	0.2705	kg CO2e/mile	Defra: Business travel - land (cars (by size)) 2024	2.42	2023-24
3	Travel (business - not owned)	Hired - Medium hybrid car		2,354	miles	0.1840	kg CO2e/mile	Defra: Business travel - land (cars (by size)) 2024	0.44	2023-24
3	Travel (business - not owned)	Hired - Medium PHEV		187	miles	0.1488	kg CO2e/mile	Defra: Business travel - land (cars (by size)) 2024	0.03	2023-24
3	Travel (business - not owned)	Hired - Medium BEV			miles	0.0744	kg CO2e/mile	Defra: Business travel - land (cars (by size)) 2024	-	2023-24
3	Travel (business - not owned)	Taxis - Black Cab	Glasgow	17,363	km	0.3060	kg CO2e/km	Defra: Business travel - taxi - black cab - km (2024)	5.31	2023-24
3	Travel (business - not owned)	Coach - WTT			km		kg CO2e/km	Defra: Business travel - land - bus 2024	-	2023-24
3	Travel (business - not owned)	Air - D - Average			km		kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	-	2023-24
3	Travel (business - not owned)	Air - D - Economy	Glasgow	321,627	km	0.2726	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	87.67	2023-24
3	Travel (business - not owned)	Air - D - Economy	London	33,270	km	0.2726	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	9.07	2023-24
3	Travel (business - not owned)	Air - D - Premium economy	Glasgow	1,108	km	0.2726	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	0.30	2023-24
3	Travel (business - not owned)	Air - D - Business	Glasgow	2,903	km	0.2726	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	0.79	2023-24
3	Travel (business - not owned)	Air - SH - Average	Glasgow	556,426	km	0.1829	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	101.75	2023-24
3	Travel (business - not owned)	Air - SH - Economy	London	27,090	km	0.1829	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	4.95	2023-24
3	Travel (business - not owned)	Air - SH - Business	Glasgow	1,768	km	0.2743	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	0.48	2023-24
3	Travel (business - not owned)	Air - SH - Business	London		km	0.2743	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	-	2023-24
3	Travel (business - not owned)	Air - LH - Average	Glasgow	1,291,593	km	0.2001	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	258.46	2023-24
3	Travel (business - not owned)	Air - LH - Economy	London	44,592	km	0.2001	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	8.92	2023-24
3	Travel (business - not owned)	Air - LH - Premium economy	Glasgow	115,184	km	0.3202	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	36.88	2023-24
3	Travel (business - not owned)	Air - LH - Premium economy	London	5,706	km	0.3202	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	1.83	2023-24
3	Travel (business - not owned)	Air - LH - Business	Glasgow	77,339	km	0.5803	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	44.88	2023-24
3	Travel (business - not owned)	Air - LH - Business	London	5,706	km	0.5803	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	3.31	2023-24
3	Travel (business - not owned)	Air - LH - First	Glasgow		km		kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	-	2023-24
3	Travel (business - not owned)	Air - Int - Average			km		kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	-	2023-24
3	Travel (business - not owned)	Air - Int - Economy	Glasgow	1,386,896	km	0.1347	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	186.75	2023-24
3	Travel (business - not owned)	Air - Int - Economy	London	14,572	km	0.1347	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	1.96	2023-24
3	Travel (business - not owned)	Air - Int - Premium economy	Glasgow	10,970	km	0.2154	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	2.36	2023-24
3	Travel (business - not owned)	Air - Int - Business	Glasgow	37,616	km	0.3904	kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	14.69	2023-24
3	Travel (business - not owned)	Air - Int - First	Glasgow		km		kg CO2e/pass.km	Defra: Business travel - air - with RF 2024	-	2023-24
3	Travel (business - not owned)	Rail - National	TMC - Glasgow	319,519	km	0.0355	kg CO2e/pass.km	Defra: Business travel - rail 2024	11.33	2023-24
3	Travel (business - not owned)	Rail - National	TMC - London	73,492	km	0.0355	kg CO2e/pass.km	Defra: Business travel - rail 2024	2.61	2023-24
3	Travel (business - not owned)	Rail - National	i-expenses - Glasgow	233,020	km	0.0355	kg CO2e/pass.km	Defra: Business travel - rail 2024	8.26	2023-24
3	Travel (business - not owned)									