

Aviation

Carbon Plan



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Version Control

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1.Introduction

As a modern university we rely on travel for collaboration both at home and overseas. Almost all overseas travel involves aviation and emits huge quantities of greenhouse gas. The concentration of greenhouse gas in the atmosphere is bringing on dangerous climate change. This is a significant threat to future life on earth and an immediate cause of global inequality.

Aviation is responsible for around 67% of our travel emissions (excluding commuting) and 14% of our total emissions, excluding commuting and emissions embedded in our supply chains (see **Appendix 1**). A plan to better understand and manage aviation at the university is considered a necessary response to the climate crisis. This will support our net-zero 2033 commitment.

The plan identifies measures to be taken, building on existing university policy and process. It facilitates better data to provide an understanding of flight activity and where it can be reduced. This will also help with monitoring progress and management.

The focus is to provide a better understanding of what is possible rather than commit to unachievable reductions. Based on current data a modest 17% reduction in flight emissions by 2033 is forecast, this equates to 153 tonnes of carbon. Due to a high level of uncertainty this is set within a target range of between 10% and 30%. To help compensate the plan makes a commitment for all flights to be carbon neutral¹ from 2026/27 (see **Appendix 2** for greater insight).

The modest reduction target is based on present-day outlook and to some extent a business-as-usual approach to our overseas operations. Faced with a likely dangerous acceleration in climate change, opinions about the acceptability of flying may change and greater reductions in emissions may be achievable in the future, including within the lifetime of this plan.

Members of staff involved with overseas travel have a responsibility to understand the plan and follow its policy requirements.

Flights relating to the recruitment of students from overseas are not covered by this plan.

¹ Carbon neutral involves paying into schemes to offset the same quantity of carbon into the future. This is not the same as Net-Zero which requires reducing emissions close to zero with remaining emissions removed from the atmosphere or captured on the same time scale.

2. Progress to date

Our Green Travel Plan 2022-27 set a target to reduce business travel emissions 50% by 2027 compared to 2018/19, (the pre-Covid level). This was met in 2024/25 without a specific plan to manage emissions from aviation.

We report our emissions from aviation every year to the Higher Education Statistics Agency (HESA). **Figure 1** below shows progress to date against the 50% target. A huge 43% reduction to 887 tonnes was achieved in 2024/25. This was largely down to a change in the DEFRA published carbon emissions per passenger km².

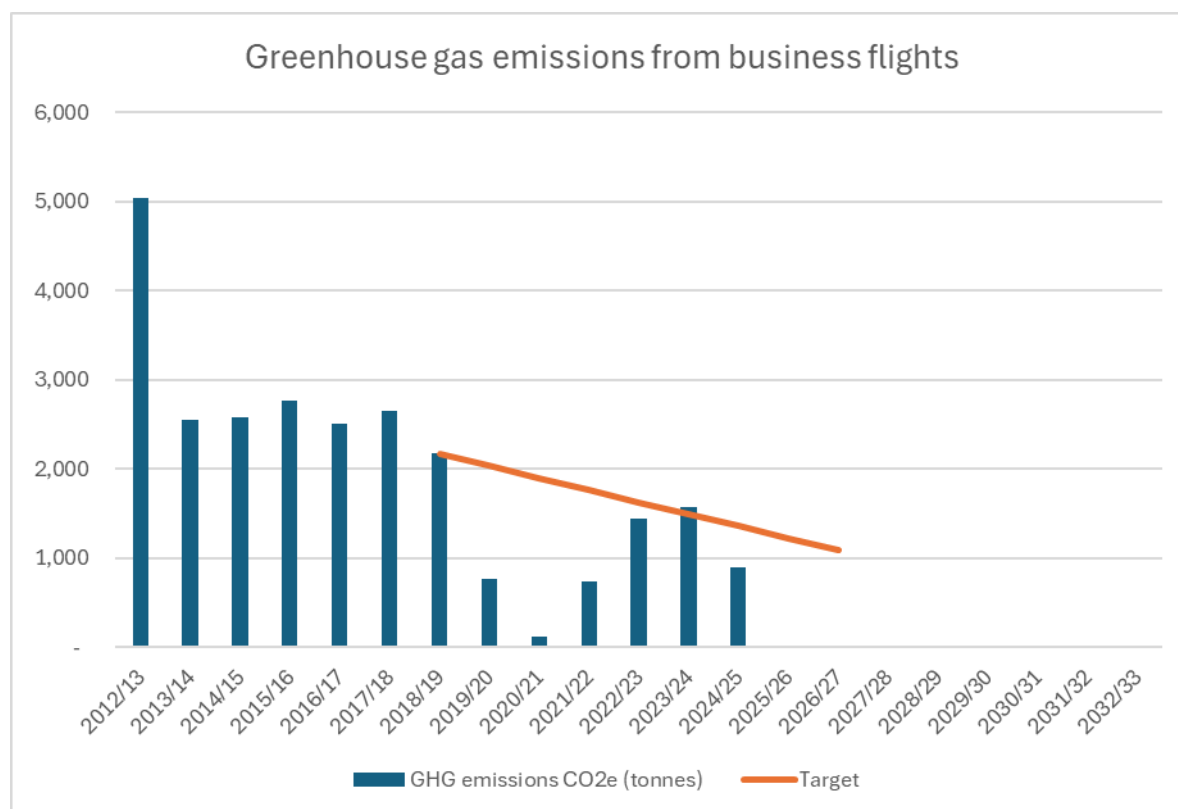


Figure 1

In the future, sustainable aviation fuels and new technology are expected to reduce emissions with flying becoming less carbon intensive. The aviation industry committed to reach net zero by 2050. Moreover, the university has committed to net-zero by 2033 (no fossil fuel emissions from our estates and offsetting remaining business travel emissions).

To meet our net zero commitment new measures are needed to manage aviation and a new target set to further reduce our emissions beyond the Green Travel Plan target (see [Section 6](#)).

² There is a time lag in calculated data, and the 2025 data was no longer affected by lower-than-normal passenger loadings during and after the COVID pandemic.

3. New Policy Measures

Some policy measures covering flights already exist at the university and are contained within the [Staff Travel Expenses Policy](#). Relevant clauses are shown in **Appendix 3**.

This plan will introduce further clauses to this policy and these are listed below:

- 3.1 **Climate conscious approach:** 'All staff are required to adopt a climate-conscious approach to travel. Trips overseas should only be undertaken when a virtual meeting is not viable or appropriate and must be planned efficiently limited to essential staff only. Where possible trips should be consolidated to reduce flights.'
- 3.2 **Domestic flights:** 'Domestic flights between UK mainland airports are prohibited subject to the exemptions in clause 3.4 below.'
- 3.3 **Eurostar:** 'Flights should not be taken to destinations on the Eurostar rail network. Other European destinations within 5 hours from London by rail should normally not use air travel.'
- 3.4 **Exemptions:** 'Exemptions to this policy may be granted for safety reasons as part of a Foresight pre-travel assessment, or where applicable there a significant impact on a traveller's caring responsibilities. Any other justified exemptions must be agreed in advance by the appropriate PVC/Executive Director.'

4. Other Measures

Other new measures will be introduced through adoption of this plan:

- 4.1 The approved travel agents will support the requirements of policy clauses 3.2, and 3.3 above as part of the booking process.
- 4.2 Travel agents will arrange to offset the emissions from the flight at the point of booking via an additional offset fee. The university will monitor the quality of the offset schemes used and if felt necessary use an alternative or develop its own. See **Appendix 2** for an explanation of carbon offset schemes.
- 4.3 Travel agents will record the relevant faculty/directorate at the point of booking along with the reason for travel e.g. Transnational Education (TNE), Research, Conference. These data will be analysed and published annually within the university, see **Appendix 4**.
- 4.4 The existing [Procurement process flowchart for purchasing overseas travel](#) has been revised to include the Foresight system, and initiatives from this plan. This is shown in **Appendix 5** and should be referred to when booking and approving flights.
- 4.5 No Purchase Order shall be approved without attaching the necessary senior manager approval (see **Appendix 3** clause 2.1).
- 4.6 Travel agent data will be analysed annually to determine country destinations and improve understanding of flight activity, see **Appendix 6**.

- 4.7 Total flight emissions across the university will be compared annually with other universities to monitor progress within the sector, see **Appendix 7**.
- 4.8 Representatives from Estates & Facilities and other key stakeholders at the university will engage in the Environmental Association of Universities & Colleges (EAUC) forums and working groups or equivalent to share and learn best practice from within the sector.
- 4.9 The success of this plan will be monitored annually by the Sustainability Management Committee. The plan will be reviewed at least every 3-years.

5. Risks

There is a significant degree of uncertainty involved in setting a target to reduce aviation emissions. Flying is an essential component of our institutional strategy and there will be some markets that we do not expect to decline. The following are seen as risks to reducing emissions:

- 5.1 Research and knowledge exchange is viewed by the university as a growth market. The ambition set in 2021 was to significantly grow this revenue by 2030. It may not be possible to achieve this without increasing our air miles. In addition, current data does not identify the scale of flights and their emissions that fall within this category. It is therefore not currently possible to calculate the effect it will have on flights.
- 5.2 The university aspires to grow its presence overseas through its TNE programme. It has been estimated that this activity might increase by up to 20% by 2033.
- 5.3 Lack of buy-in amongst key decision makers and or a lack of awareness with this plan could be significant. Examples may include maintaining old ways of operating and taking decisions based on cost, not carbon.
- 5.4 It is highly unlikely aviation will achieve evenly distributed progress towards net zero between now and 2050³. A modest 10% reduction in the carbon intensity of flying by 2033 may be realistic.
- 5.5 The formation of the new LASE group on 1-August 2026 places a considerable level of uncertainty on the data assumptions made e.g. the level of overseas teaching and research activity, and policies covering air travel. Most recent published records for 2023/24 show University of Kent reporting 946 tonnes of carbon from flights compared with 1,564 for University of Greenwich (60% of our total). Currently we have no data on how their flight activity is made up or what measures they adopt.
- 5.6 High levels of carbon emissions remaining beyond 2033 may jeopardise net zero or require considerable expenditure to remove or capture.

³ The aviation industry's landmark pledges to be net zero by 2050 will probably not now be achieved, airline leaders have admitted. The collective goal to eliminate net carbon emissions was declared by global airlines only five years ago in 2021, with similar pledges made by national aviation industry leaders and governments, including in the UK, in 2020. However, Willie Walsh, the director general of global airlines body IATA, said "hope was fading fast" and a new "realistic timeline" should be established. (The Guardian online 8-Jun)

6. Future Target

Table 1 below presents where we expect flight impacts to change. A 17% reduction in current emissions by 2033 is forecast. As there is considerable uncertainty around growth, some of our current data, and the impact of the new LASE group; the target is set as a range between 10% and 30%. As the above elements become clearer, we should be able to refine the target.

Any carbon emitted beyond 2033 would normally need to be removed or captured each year to comply with a strict net zero definition. A 30% reduction based on current emissions leaves 621 tonnes. This is a 71% reduction on the Green Travel Plan baseline of 2,168 tonnes. Whilst this scale of reduction still falls short of what would normally be associated with net zero (85% plus reductions) offsetting aviation emissions, especially long haul, may be the only realistic option and therefore still within the spirit of our net zero commitment.

Table 1

Element	2024/25 Emissions CO2e (tonnes)	Reduction Opportunity	2033 Emissions CO2e (tonnes)
Destinations viable by rail (See Note 1)	30	-21	9
TNE contribution (See Note 2)	225	+45	270
Research & Knowledge exchange (see Note 3)	443	0	443
Everything else (flying 50% less) (see Note 4)	189	-95	94
Subtotal	887	-71	816
Aviation decarbonisation (10%) (see Note 5)		-82	
2033 forecast			734 (-17%)
2033 target -10%			798
2033 target -30%			621

Notes:

1. Based on current data, flight destinations within the UK mainland and Eurostar rail network equal around 30 tonnes per year. Some travel to these destinations will not be viable by rail, however an estimated 70% reduction could be achievable.

2. Based on current data, emissions to countries with a TNE presence (see **Appendix 6**) were around 300 tonnes per annum. If only 75% of flights to these countries are TNE business (225 tonnes) then projected TNE growth of 20% could increase emissions 45 tonnes by 2033.
3. Based on no current data to identify purpose of flights it is assumed that 50% of all flights currently relate to Research & Knowledge Exchange. It is assumed that opportunities to reduce these flights will be replaced by growth and so no overall reduction is achievable by 2033.
4. By closely monitoring flight activity and limiting trips to those that are truly essential a 50% reduction in other flight activity could be achievable. Most of this reduction might be expected in the first few years as the plan is adopted.
5. A more realistic aviation pathway to net zero could deliver a 10% reduction in the carbon intensity of flying by 2033.

7. Monitoring and reporting

The following data reports will be produced annually and published by the university's Transport Department:

- 6.1 Emissions from flights by faculty/directorate along with business type e.g. research.
- 6.2 Emissions from flights by country destinations.
- 6.3 UK universities league table of flight emissions as published by HESA.

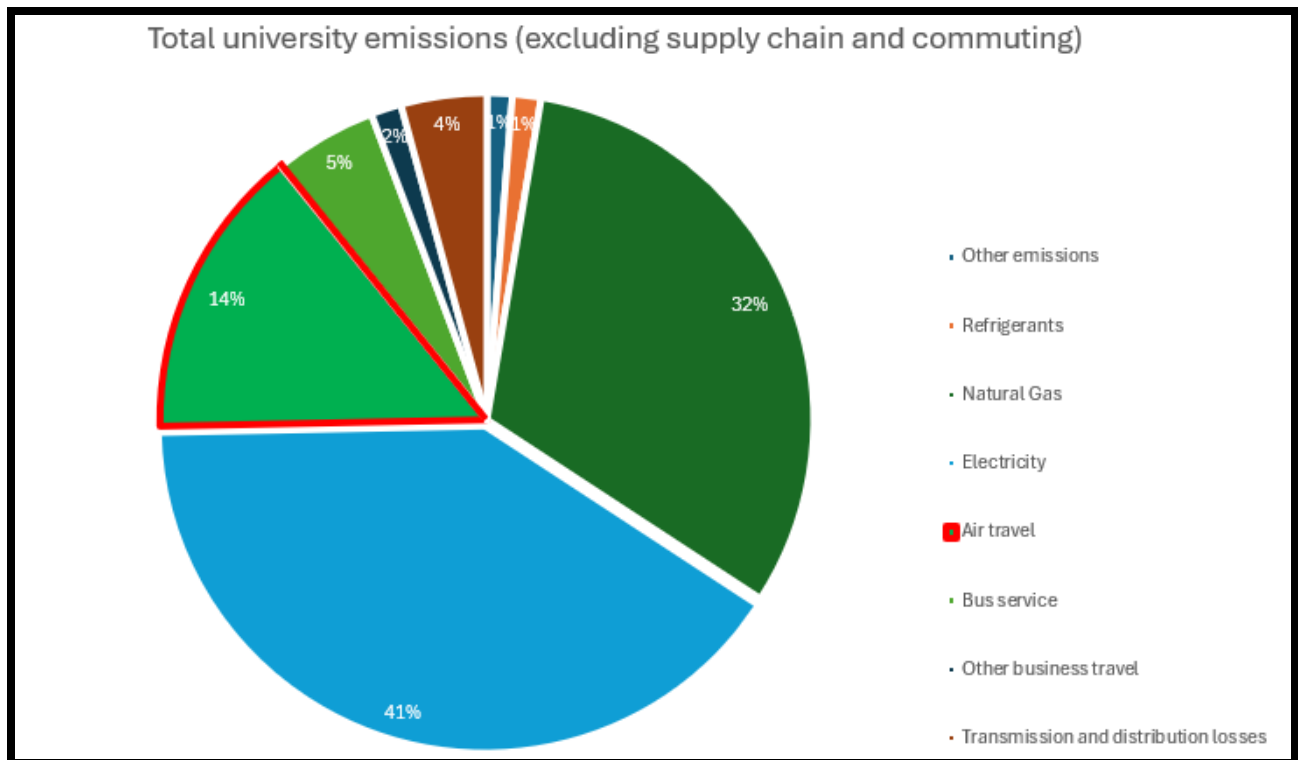
Progress against the plan will be reported annually to the Sustainability Management Committee at the Term 2 meeting. Scrutiny of the plan by the Committee will be needed.

8. Further reading

The following documents are relevant to planning air travel and linked below:

- 7.1 [Staff Travel Expenses Policy](#)
- 7.2 [Travel Insurance](#)
- 7.3 [Foresight travel system](#)

Appendix 1: Total university emissions by activity excluding supply chain and commuting 2024/25 (5,987 tonnes CO2e)



Appendix 2: Carbon offsetting

Our travel agents work with carbon offset scheme partners. From 2026/27 these will be utilised to offset the emissions from our flights by adding an offset fee at the point of booking. At a cost of around £15 per tonne in 2025 this is likely to add around £4 to the cost of most return short haul flights and around £20 to most long-haul flights.

The total extra cost to the university would therefore be under £14k per annum based on 2024/25 total flight emissions (887 tonnes x £15). This investment would offset 14% of our total 2024/25 emissions bringing us closer to a carbon neutral position well ahead of 2033.

The offsetting cost can be passed on to sponsors of externally funded work if this is in accordance with their regulations and agreed with them in advance.

By 2033, if the university reaches a 30% reduction in flight emissions, then 621 tonnes of carbon would remain. To meet the net-zero definition the same quantity of carbon will need to be removed in the same timescale. It is difficult to predict what this will cost in 2033, but it could easily exceed £100 per tonne and therefore cost over £62k per annum.

Effective nature-based schemes such as tree planting and restoring peat bogs can take decades to achieve large scale carbon removal. Some other offsetting schemes simply preserve existing forests or may have questionable carbon removal credentials. The university will need to ensure that effective trusted schemes are used.

Carbon credits scheme

An alternative approach could be adopted in the future. Using the emissions data by faculty/directorate supplied from travel agents, carbon credits could be allocated to faculties/directorates initially based on the approximate share of carbon over the previous year. These could be traded between faculties/directorates, but the overall total would gradually be reduced each year to align with our targets for business travel emissions. Financial penalties could be incorporated for faculties/directorates that spend over their carbon allowance. These could contribute towards a green investment fund to help offset emissions, within the university's own estate and on a larger scale for example by teaming up with other universities e.g. by joining the [EAUC Carbon Coalition](#).

For this to be workable carbon emissions from travel calculated by our travel agents would need to be readily available to each faculty/directorate.

Appendix 3: Existing Staff Travel Expenses Policy

The following travel provisions **are already included** in our [Staff Travel Expenses Policy](#).

1 Flights (UK)

Reimbursement applies to all flights and must be booked via the University Procurement route. To note this will not be reimbursed via expenses.

2 Overseas Travel

Prior Approval

2.1 Prior approval for overseas travel must be obtained from the relevant Pro Vice Chancellor or Executive Director.

Travel Arrangements

2.2 All overseas travel must be booked through the university's recommended travel agents unless in exceptional circumstances such as travel disruption.

Accompanied Travel

2.3 If a spouse, partner, or other person unconnected with the university accompanies an employee on a trip, prior approval is required, and the employee must pay in full in advance.

3 Flights

3.1 All flights must be booked through the university's preferred travel agencies using the Procurement route.

3.2 Economy is the default class of choice unless external funding terms allow otherwise.

3.3 Long haul overnight travel with a meeting immediately upon landing should be avoided. Instead, travel should be taken the day before with hotel booking.

3.4 Premium economy is only allowed if approved by Executive Director/PVC or equivalent.

3.5 Business class is only allowed by exception and requires sign off by the Vice Chancellor.

3.6 First class travel is not permitted.

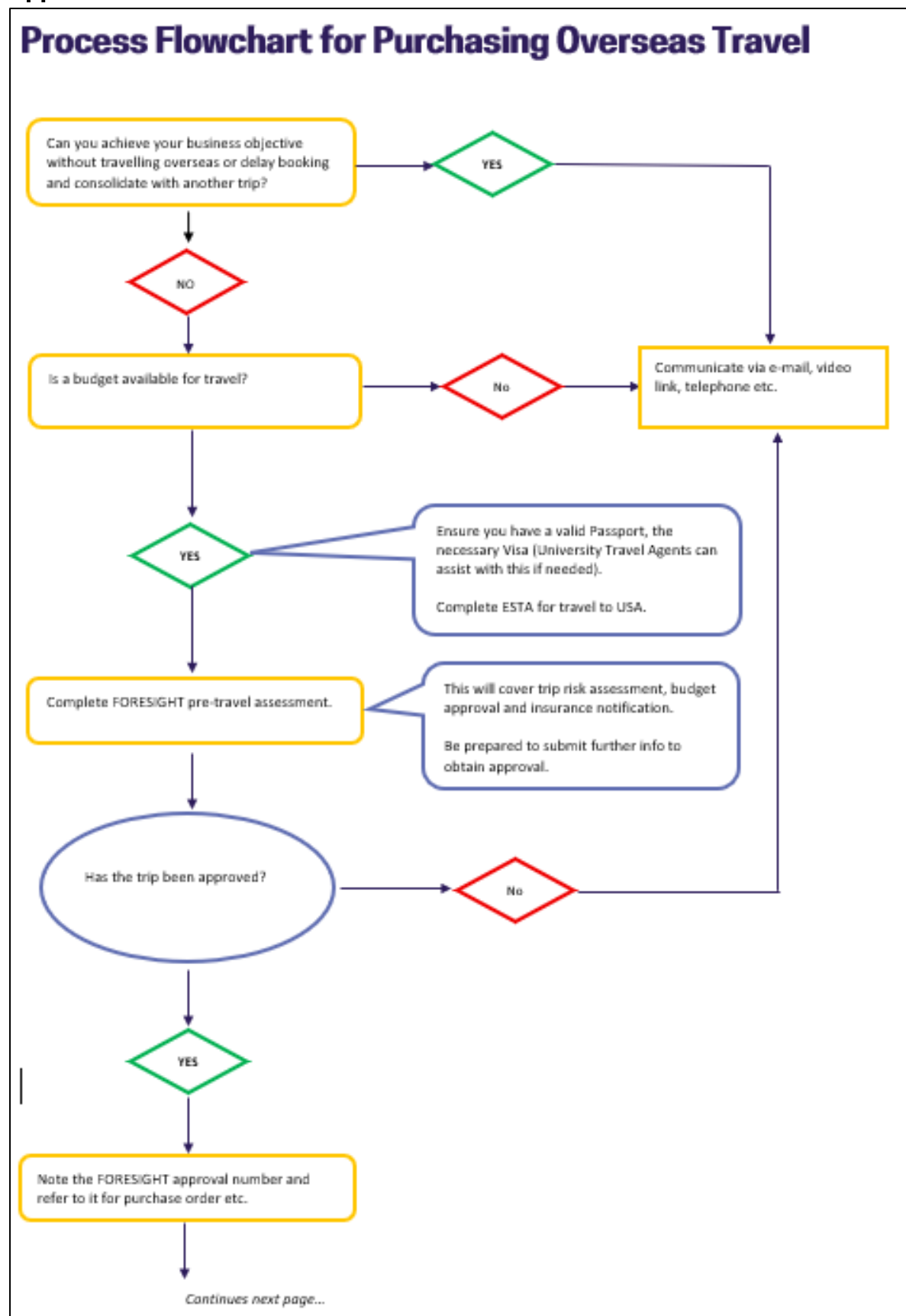
Appendix 4: Flight emissions by faculty/directorate 2024/25

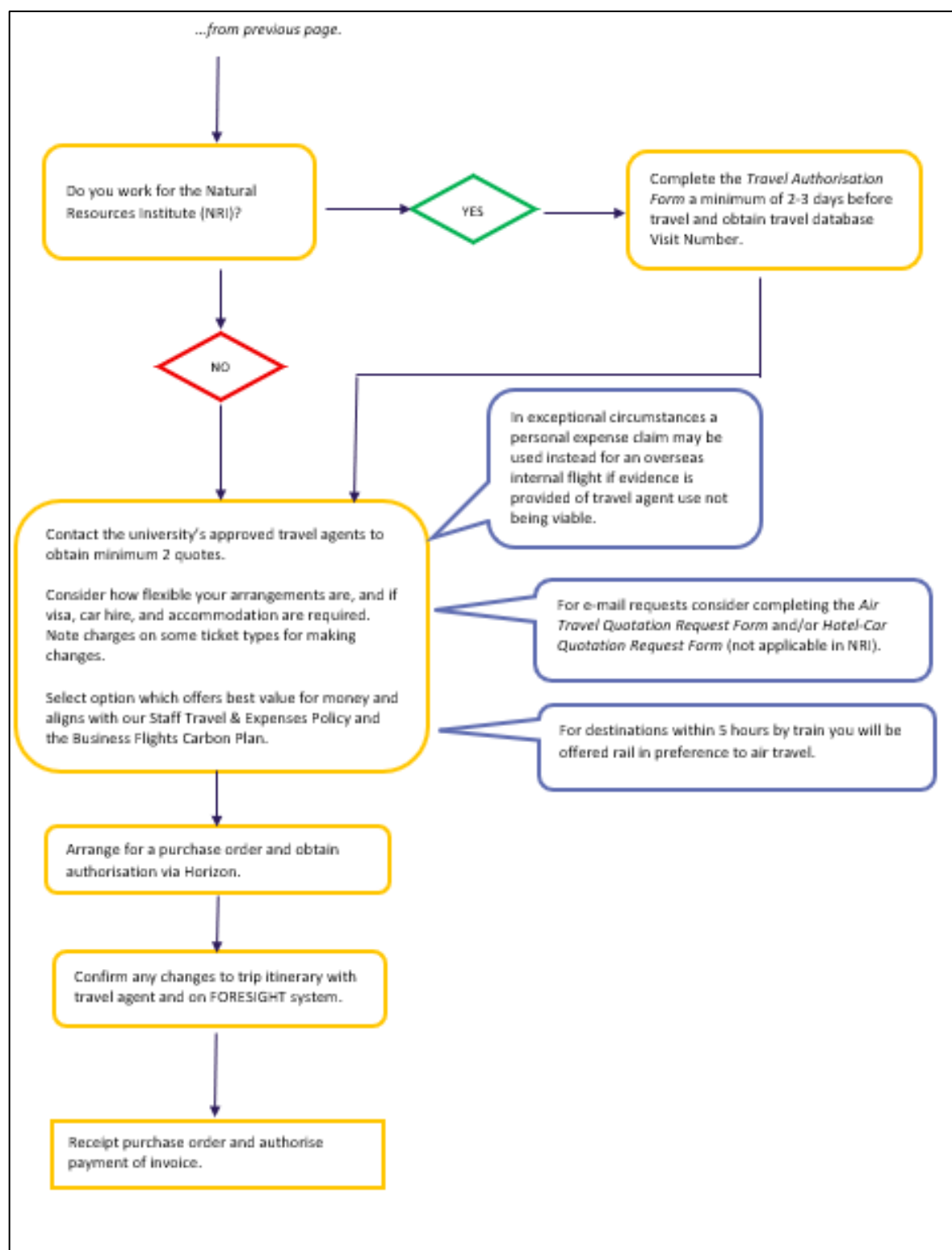
Faculty/Directorate	CO2e (tonnes) 24/25	CO2e (tonnes) 23/24
Engineering & Science	545	528
Greenwich Business School	193	136
Marketing and External Relations	124	153
Law Arts & Social Sciences	116	208
Education, Health & Human Sciences	67	44
Vice Chancellors Office	56	65
Not specified	24	26
Greenwich Research & Enterprise	6	19
Student & Academic Services	2	126
Education & Academic Development	0	14
Information & Library Services	0	10
Finance Directorate	0	0
Estates & Facilities Directorate	0	0
People Directorate	0	0
Strategic Planning	0	0

Note 1: This table excludes an estimated 67 tonnes of greenhouse gas emissions (7.5% of the total) for flights not booked through our travel agents. Our policy changed in 2024/25 mandating staff to use the approved travel agents (15% was unaccounted in 2023/24).

Note 2: 2024/25 travel agent data used 2023/24 Defra factors. This needs to be adjusted for lower 2024/25 Defra factors. Data reported to HESA reflected this.

Appendix 5: Procurement Decision Process Flowchart





Appendix 6: UoG flight emissions by Top 40 country destinations 2024/25

Country	CO2e (tonnes) 24/25	CO2e (tonnes) 23/24	TNE Host	Train Viable
United Kingdom (international inbound)	461.0	537.9		
United States	61.7	72.0	61.7	
China	57.6	49.3	57.6	
United Arab Emirates	54.5	48.5	54.5	
Malaysia	40.1	4.4	40.1	
Hong Kong	39.2	73.6	39.2	
Qatar	34.0	44.2		
Kenya	28.7	29.7	28.7	
India	27.8	33.9		
Singapore	24.7	52.1	24.7	
Egypt	22.4	28.2	22.4	
Vietnam	20.3	20.6	20.3	
Turkey	15.6	5.7		
South Africa	15.1	17.7		
France	12.6	15.0		12.6
Netherlands	12.5	8.4	12.5	12.5
Spain	12.5	9.7		
Germany	10.1	6.7		
Ethiopia	10.0	14.4		
Brazil	9.7	7.3		
Ghana	9.7	5.9	9.7	
Japan	9.2	21.8		
Nigeria	9.0	18.4		
United Kingdom (Domestic flights)	7.9	5.2		7.9
Greece	7.4	5.5	7.4	
Canada	6.8	10.1		
Rwanda	6.2	14.8		
Mexico	5.8	1.9		
Thailand	5.4	4.8		
Indonesia	5.3	1.5		
Peru	5.0	2.6		
Colombia	4.6	7.2		
Cyprus	4.5			
Benin	4.0			
Portugal	4.0	2.3		
Belgium	3.5	9.2		3.5
Tanzania	3.4	0.8		

Note: 2024/25 travel agent data used 2023/24 Defra factors. This needs to be adjusted for lower 2024/25 Defra factors. Data reported to HESA reflected this.

Appendix 7: Flight emissions by institution 2023/24 CO2e (tonnes)

No.	HE provider	23/24	22/23	% change
1	St George's, University of London	33,273.00	29,690.00	12%
2	University College London	25,292.79	18,138.69	39%
3	The University of Oxford	25,019.00	18,000.00	39%
4	Imperial College of Science, Technology and Medicine	16,983.87	11,174.20	52%
5	The University of Edinburgh	15,533.81	11,609.91	34%
6	The University of Glasgow	13,868.28	12,066.03	15%
7	King's College London	12,639.41	2,915.90	333%
8	The University of Manchester	12,390.00	10,034.00	23%
9	The University of Cambridge	11,746.00	11,097.00	6%
10	The University of Birmingham	10,210.00	8,700.00	17%
11	The University of Leeds	10,163.20	8,940.34	14%
12	Queen Mary University of London	8,871.47	3,720.41	138%
13	The University of Exeter	8,351.82	10,117.00	-17%
14	University of Nottingham	7,816.47	5,914.00	32%
15	Newcastle University	7,386.44	6,415.67	15%
16	The University of Warwick	6,822.50	5,963.04	14%
17	The University of Bristol	6,596.60	5,879.60	12%
18	The University of Liverpool	6,579.81	4,494.25	46%
19	The University of Strathclyde	4,853.00	4,400.61	10%
20	The University of Lancaster	4,261.32	2,834.54	50%
21	University of Durham	3,973.17	2,376.19	67%
22	The University of St. Andrews	3,696.80	3,641.64	2%
23	The University of Bath	3,594.61	3,559.00	1%
24	The University of York	3,573.83	781.433	357%
25	Loughborough University	3,367.00	3,047.80	10%
26	The Nottingham Trent University	3,361.29	2,507.49	34%
27	The University of Dundee	3,266.30	3,534.60	-8%
28	The University of Reading	3,069.20	1,732.73	77%
29	London School of Hygiene and Tropical Medicine	2,977.00	4,202.00	-29%
30	Cardiff University	2,913.64		
31	The Open University	2,656.54		
32	Coventry University	2,504.99	2,522.78	-1%
33	University of the West of England, Bristol	2,493.63	1,599.37	56%
34	University College Birmingham	2,446.70		
35	The Manchester Metropolitan University	2,431.25	1,455.41	67%
36	The University of Aberdeen	2,429.51	2,288.08	6%
37	University of Northumbria at Newcastle	2,278.73	1,684.55	35%
38	London School of Economics and Political Science	2,271.74	2,348.08	-3%
39	Heriot-Watt University	2,207.64	2,434.59	-9%
40	Liverpool School of Tropical Medicine	2,130.00	2,150.18	-1%
41	The University of Essex	2,062.71	2,104.97	-2%
42	University of Hertfordshire	1,930.00	1,220.00	58%
43	Aston University	1,808.50	1,856.79	-3%
44	The University of Sussex	1,796.20	38.509	4564%
45	Liverpool John Moores University	1,779.60	1,544.20	15%
46	Edinburgh Napier University	1,688.95	1,105.03	53%
47	Brunel University London	1,580.00	1,017.77	55%
48	The University of Greenwich	1,564.28	1,443.37	8%
49	Oxford Brookes University	1,430.00	456	214%
50	De Montfort University	1,320.04	847.585	56%
51	University of Plymouth	1,252.30	1,146.00	9%
52	Leeds Beckett University	1,232.24	224,000.00	-99%
53	University of the Arts, London	1,186.10	863.138	37%
54	The University of Kent	946.18	1,699.90	-44%
55	The University of Sunderland	942.3	686.813	37%

56	Royal College of Art	878.864	937.643	-6%
57	The University of Lincoln	868.14	885.19	-2%
58	Birmingham City University	865.904	803.313	8%
59	The University of the West of Scotland	859.795	511.675	68%
60	Teesside University	832.335	282.105	195%
61	Birkbeck College	819.308		
62	Royal Holloway and Bedford New College	785.814		
63	Glasgow Caledonian University	765	983	-22%
64	Bangor University	757.641	606.38	25%
65	Bournemouth University	731.441	908.032	-19%
66	Swansea University	720.621	932.929	-23%
67	Cardiff Metropolitan University	713.38	386.74	84%
68	The Institute of Cancer Research	688.7	547.1	26%
69	University of South Wales	637.94	461	38%
70	Middlesex University	636.416	713.32	-11%
71	The University of Brighton	627.049	762.5	-18%
72	The University of Bradford	552	656.814	-16%
73	The University of Salford	545	480	14%
74	Kingston University	532.791	409.6	30%
75	University of Bedfordshire	506	506	0%
76	City, University of London	479	370	29%
77	University for the Creative Arts	477.66	328	46%
78	Aberystwyth University	472.73	415.88	14%
79	Leeds Trinity University	452.4	152.51	197%
80	Roehampton University	440.636		
81	Robert Gordon University	428.68		
82	The University of West London	418.669	280.15	49%
83	London South Bank University	367.75	537	-32%
84	London Metropolitan University	365.075	240.618	52%
85	Edge Hill University	360.3	177.4	103%
86	The University of Northampton	350.22		
87	The University of Stirling	348.959	322	8%
88	University of Wales Trinity Saint David	329.3	260.2	27%
89	Goldsmiths College	315.95	6.792	4552%
90	Bath Spa University	308.292	297	4%
91	Sheffield Hallam University	271.99	800.79	-66%
92	University of Worcester	254.849	180.97	41%
93	Queen Margaret University, Edinburgh	217.333	109.432	99%
94	Wrexham University	182.95	45.54	302%
95	University of Gloucestershire	178	180	-1%
96	The Royal Central School of Speech and Drama	161	116	39%
97	The University of Chichester	126.67		
98	Royal College of Music	126.419	154.546	-18%
99	York St John University	109.755	128.636	-15%
100	Falmouth University	90.04	51	77%
101	Glasgow School of Art	63.904	122.181	-48%
102	The Arts University Bournemouth	44.848	28.44	58%
103	Rose Bruford College of Theatre and Performance	1	1	0%
104	The University of Westminster	0	0	
105	The University of Central Lancashire		893.3	0%
106	The University of Hull		380.514	0%
107	SOAS University of London		0	

Note: Data published by HESA. Institutions missing from the table above did not submit data.

Ends