Luton Rising
Our airport.
Our community.
Our planet.

November 2023

London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 8 Additional Submissions (Examination)

8.90 Applicant's response to Issue Specific Hearing 2 Actions 15, 17, 22, 23: Greenhouse Gases and Climate Change Matters

Infrastructure Planning (Examination Procedure) Rules 2010

Application Document Ref: TR020001/APP/8.90

The Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

London Luton Airport Expansion Development Consent Order 202x

8.90 Applicant's Response to Issue Specific Hearing Actions 15, 17, 22 and 23 – Greenhouse Gases and Climate Change

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1 INTRODUCTION

1.1 Purpose of this document

1.1.1 This document has been prepared by Luton Rising (a trading name of London Luton Airport Limited) ('the Applicant') for submission to the Examining Authority (ExA). It provides the Applicant's response to certain Action Points arising from Issue Specific Hearing 2 (ISH2) requested by the ExA for Deadline 4.

1.1.2 In this document, the Applicant has reviewed and responded to Action Points 15, 17, 22 and 23 from Issue Specific Hearing 2, held on the morning of Wednesday 27 September 2023 **[EV7-006].**

2 APPLICANT'S RESPONSE TO ACTIONS FOR DEADLINE 4

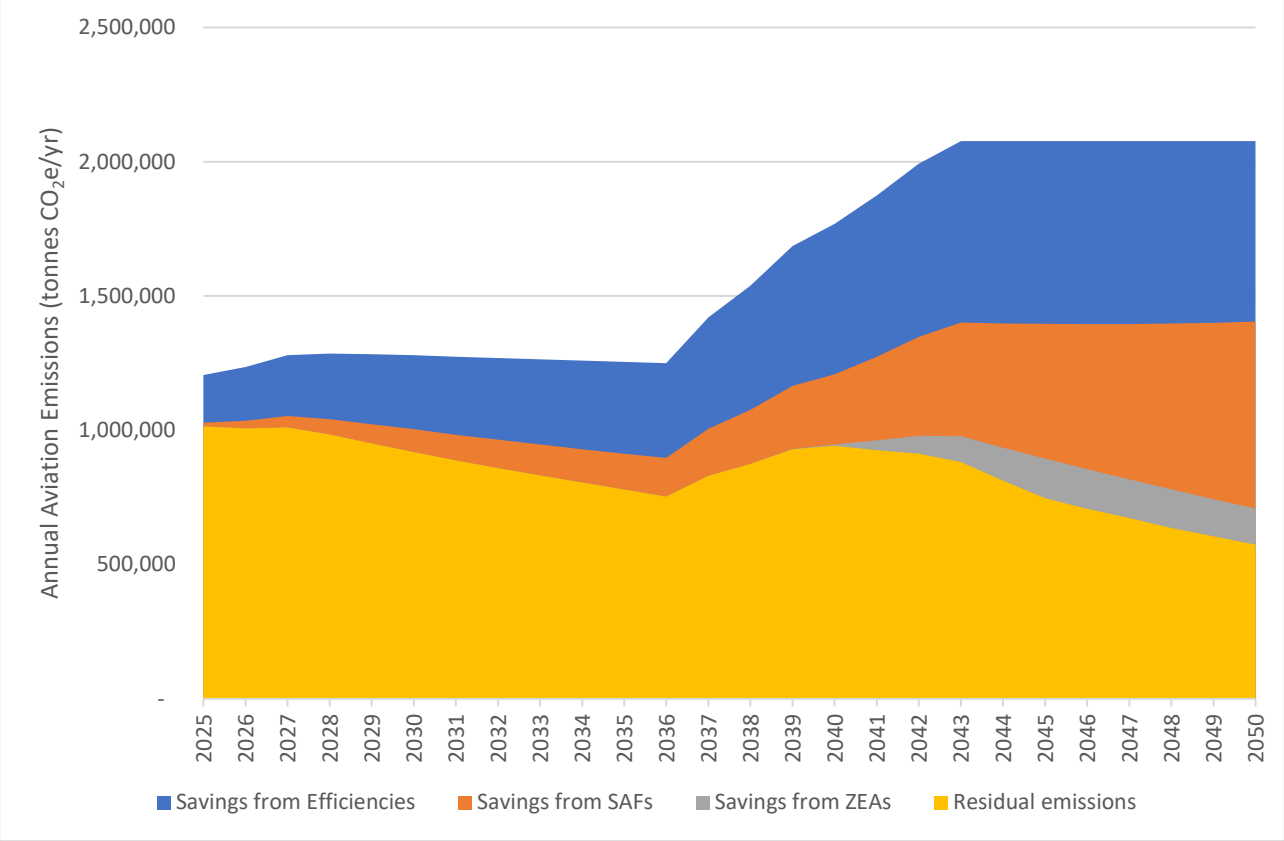
2.1 ISH 2 Action Point 15: To review whether any sensitivity analysis has been undertaken in relation to 'high ambition' delivery timescales in the Jet Zero Strategy. If it has been undertaken, signpost where this is located. If not, provide the sensitivity analysis or explain why this is not required.

2.1.1 The High Ambition Scenario considered in the Jet Zero Strategy (Ref 2.1) and Core Planning Case assessed and reported in **Chapter 12** of the **Environmental Statement (ES) [REP3-007]** considers the national delivery of three key mitigation measures to reduce aviation emissions:

a. fuel efficiency measures;
b. sustainable aviation fuel; and
c. zero emission aircraft.

2.1.2 The incremental efficacy of each of these measures in reducing emissions incrementally during assessment for the Proposed Development is shown in **Inset 12.4** of **Chapter 12** of the **ES [REP3-007].** In effect, therefore Inset 12.4; provides a quantified sensitivity test with the top line being aviation emissions without any of these measures. This is, in effect, a 'worst case' analysis. Each of the individual mitigation measures described in the Jet Zero Strategy have been incorporated into the Core Planning Case for GHG emissions from aviation and are not, therefore, included in the section on 'sensitivity tests' which is in response to the process and tests described in **Chapter 5** of the **ES [AS-075] under the sub-section of Sensitivity Tests**. The graphic shown as Inset 12.4 within **Chapter 12** of the **ES [REP3-007]** is repeated as **Inset 2-1** below.

Inset 2-1: The incremental effect of Jet Zero Strategy mitigation policies on Aviation emissions



2.1.3 The assessment of significance of these quantified emissions follows the Institute of Environmental Management & Assessment (IEMA) Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2nd Edition, February 2022 (Ref 2.2). Key to defining significance in this guidance is the degree to which a project mitigates emissions with respect to *"applicable existing and emerging policy requirements and good practice design standards for projects of this type"*. Given that the Jet Zero Strategy, and the mitigation measures in it and considered above, are national policy that can be delivered, and are not hindered, by the Proposed Development they are considered embedded in the Proposed Development, not additional. Therefore, further assigning of significance to any scenarios where these national policy mitigation measures are not delivered is not considered appropriate.

2.2 ISH 2 Action Point 17: Provide a breakdown of how many flights are caught by CORSIA, the UK ETS or by neither. This should include a breakdown by emissions and any other parameters that may assist the ExA.

2.2.1 Data relating to future flights are provided as numbers of flights in each year to discrete regional destinations, broken down by make and model of aircraft. A more detailed methodology on how this information has been used to estimate aviation emissions is provided in Table 2.1 of **Appendix 12.2** of the **ES [APP-082]**. Clearly these are forecasts, but they give a good representation of the

breakdown of regional destinations and, therefore, the proportions of flight that will be within the UK ETS, CORSIA or neither.

2.2.2 All flights are allocated to one of the following regional destinations, with representative average flight distances in km:

a. Central and Eastern Europe (1,720 km);
b. Domestic (514 km);
c. Middle East (5,461 km);
d. North America (6,076 km);
e. Turkey, Near East & North Africa (3,154 km); or
f. Western Europe (1,362 km).

2.2.3 The forecast regional split of future movements effectively determines which flights will be captured by the requirements of the UK ETS (and therefore fall under the Traded Sector) and which will be outside the UK ETS (and therefore within the non-Traded Sector). It also effectively determines which flights will be captured by CORSIA.

2.2.4 As described in Table 12.11 of **Chapter 12** of the **ES [REP3-007]**, flights within the Domestic, Central and Eastern Europe, and Western Europe regions are allocated to the Traded Sector, with flights to all other regions allocated to non-Traded sector. As noted in Table 12.11, the UK ETS currently covers flights within the UK, and flights departing the UK for destinations in the European Economic Area, Switzerland[1] and Gibraltar. There are, therefore, a small number of potential destinations within these regions, such as Albania and some states from the former Yugoslavia and Soviet Union, that are outside the European Economic Area (EEA) but within the Central and Eastern Europe region. The number of flights to these destinations is anticipated to be small when compared to larger core markets and this means that any discrepancy is considered to be minor and not material to the overall GHG assessment. In the indicative busy day timetable, presented in the **Need Case Appendix C [APP-214]** only around 2% of departures are forecast to be to Central and Eastern European destinations which are non-ETS.

2.2.5 **Table 1** below shows a breakdown of numbers of departing flights between the Traded and non-Traded sectors for the Future Baseline and the Core Planning Case. The split of aviation emissions between these two categories is provided in Table 3.4 of **Appendix 12.2** of the **ES** [**APP-082**], and repeated in **Table 2** below.

[1] The GHG chapter of the ES, Chapter 12, was drafted at a time when Switzerland, as a destination, was not covered by the UK ETS. This has now changed, with flights to Switzerland being covered by the UK ETS since 1 January 2023. The change in circumstances is not considered to be material to the overall GHG assessment, or allocation of emissions between Traded and non-Traded sectors.

Table 1: Numbers of departing flights, broken down between the Traded and non-Traded sectors, for the Future Baseline and Core Planning Case

Year	Future Baseline		Core Planning Case	
	Traded	Non-Traded	Traded	Non-Traded
2025	61,745	7,305	66,448	7,017
2026	61,746	7,304	68,632	6,998
2027	61,742	7,308	70,382	7,698
2028	61,722	7,328	69,844	8,076
2029	61,720	7,330	69,670	8,095
2030	61,717	7,333	69,538	8,072
2031	61,710	7,340	69,427	8,033
2032	61,710	7,340	69,343	7,962
2033	61,711	7,339	69,277	7,878
2034	61,711	7,339	69,225	7,780
2035	61,711	7,339	69,172	7,683
2036	61,721	7,329	69,118	7,577
2037	61,721	7,329	74,248	8,718
2038	61,716	7,334	76,647	9,751
2039	61,716	7,334	80,602	10,865
2040	61,387	7,324	81,975	11,575
2041	58,938	7,254	81,096	12,304
2042	56,665	7,188	80,571	13,088
2043	54,318	7,121	78,320	13,754
2044	51,886	7,051	74,438	13,556
2045	49,283	6,976	70,284	13,345
2046	48,803	6,962	69,518	13,306
2047	48,491	6,953	69,020	13,281
2048	47,958	6,937	68,170	13,238
2049	47,745	6,931	67,829	13,221
2050	47,531	6,925	67,488	13,203

Table 2: Aviation emissions, broken down between the Traded and non-Traded sectors, for the Future Baseline and Core Planning Case (Tonnes CO_2)

Year	Future Baseline		Core Planning Case	
	Traded	Non-Traded	Traded	Non-Traded
2025	800,806	146,380	864,483	140,091
2026	769,148	142,375	862,193	135,210
2027	738,412	138,582	852,534	148,357
2028	713,474	134,793	820,827	153,188
2029	690,431	130,601	792,617	148,983
2030	668,225	126,543	765,617	143,920
2031	646,809	123,108	739,912	139,187
2032	628,354	119,594	717,263	133,869
2033	610,363	116,171	695,275	128,478
2034	592,854	112,841	673,936	123,010
2035	575,807	109,597	653,359	117,717
2036	559,279	106,237	633,341	112,447
2037	543,096	101,276	660,445	162,317
2038	527,268	96,600	659,669	205,940
2039	511,929	92,008	671,658	249,079
2040	493,880	89,202	661,866	271,554
2041	452,696	84,609	625,941	290,801
2042	415,512	80,264	594,616	308,938
2043	379,494	76,062	551,904	320,694
2044	345,371	72,010	500,918	304,085
2045	312,111	68,075	451,215	287,957
2046	295,100	64,924	426,348	274,718
2047	279,877	61,926	404,184	262,086
2048	263,905	58,968	380,836	249,655
2049	250,479	56,191	361,353	237,933
2050	237,549	53,505	342,595	226,591

2.2.6 In percentage terms, the Traded sector accounts for over 86% of aviation emissions in 2025, falling to just over 60% in 2050. In terms of numbers of flights, the Traded sector accounts for over 90% in 2025, falling to just under 84% in 2050. The non-ETS proportion of emissions is greater than the ETS proportion of flights because destinations beyond the European Economic Area are more likely to involve long haul flights with higher emissions.

2.2.7 The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is a market-based mechanism that requires the operators of eligible flights to reduce or offset emissions above a set baseline; from 2024 onwards, this baseline is set at 85% of 2019 emissions (Ref 2.3).

2.2.8 CORSIA currently applies to flights between states that volunteer to participate in the scheme, with all international flights covered from 2027 onwards. The UK Government has introduced legislation to implement CORSIA and is a full participant. Thus, unless exempt, CORSIA will apply to those flights that are not covered by the UK ETS. Certain flights are exempt, however, including flights to and from Least Developed Countries, Small Island Developing States, Landlocked Developing Countries, and states which represented less than 0.5% of international aviation activities in 2018, unless they participate on a voluntary basis. A number of references include maps showing the distribution of participating states (Ref 2.3, Ref 2.4).

2.2.9 The nature and location of these exempt nations mean that only a very small number of flights departing from London Luton Airport are likely to remain outside the offsetting requirements of CORSIA. Whilst the granularity of the destination data for the environmental assessments does not allow the Applicant to quantify flight numbers and emissions not affected by CORSIA specifically, the nature of the long haul forecasts, as presented in the **Need Case [AS-125]** and the indicative Busy Day Timetable presented in the **Need Case Appendix C [APP-214]** illustrate that the great majority of destinations are anticipated to fall into countries which are included within the UK ETS or CORSIA.

2.2.10 The UK Government has carried out a consultation on the implementation of CORSIA (Ref 2.5), including the interaction between CORSIA and the UK ETS, and it remains to be seen how the overall regulation of aviation emissions will evolve in the future but, in the light of broader Government policy on emissions, it seems unlikely that there would be any weakening of a future scheme. Any integration of the two schemes must be carried out in such a way as to not compromise the overall effectiveness, in aviation emissions mitigation terms, of either one.

2.3 ISH 2 Action Point 22: Provide a clarification on the Jet Zero Strategy 2040 target in relation to domestic flights and why this wasn't included in the modelling, while other targets in the Jet Zero Strategy have been relied upon.

2.3.1 As discussed in paragraph 12.5.12 of **Chapter 12** of the **ES [REP3-007],** the modelling of GHG emissions makes a clear distinction between the different mitigation measures and targets discussed within the UK Government's Jet Zero Strategy (Ref 2.1). Mitigation measures that have been included in the GHG model include improvements on aircraft and airspace efficiency, the rollout of sustainable aviation fuels (SAFs) and the introduction of zero emission aircraft (ZEA). The impact of carbon pricing on passenger demand was also taken into account, and these effects were factored into the fleet mix and destination data used to model aviation emissions as set out in Table 6.12 of

the **Need Case [AS-125]** and **Appendix C to the Need Case [APP-214]**. These measures are part of the Government's strategy to decarbonise aviation at a national level.

2.3.2 Each of these mitigation measures was incorporated into the GHG model as the Jet Zero Strategy explicitly provides numeric parameters that were applied to the model in order to determine the overall impact in terms of emissions over time. The assumptions for Scenario 2: High Ambition, which is stated as being representative of UK aviation decarbonisation policy, are provided in Figure 3 of the Jet Zero Illustrative Scenarios and Sensitivities (Ref 2.6) that accompanies the Jet Zero Strategy.

2.3.3 The Jet Zero Strategy also includes a number of specific targets for 2040, including net zero domestic aviation emissions, and zero emissions airport operations. These are, however, specific outcomes, rather than measures to achieve outcomes, and so they cannot be incorporated into the GHG model in the same way that assumptions relating to discrete mitigation measures can.

2.3.4 Regarding the 2040 target for domestic aviation, it is important to note that this calls for net zero emissions by that date. Paragraph 1.3 of the Jet Zero Strategy explicitly discusses the role of GHG removals in relation to this target, so it is clear that aircraft operators are not required to achieve absolute zero emissions by 2040. The domestic aviation emissions quantified by the GHG assessment in **Chapter 12** of the **ES [REP3-007]** are not, therefore, inconsistent with this target.

2.3.5 In relation to the 2040 target for zero emission airport operations, the Applicant has made clear in **Chapter 12 of the ES [REP3-007]** that measures within the application for development consent achieve very significant reductions in emissions from airport operations by this date, but there remain residual emissions from the consumption of grid electricity as well as other sources such as aircraft engine tests and the use of refrigerants and de-icer. The Government has consulted on the measures required to achieve zero emission airport operations and part of this consultation sought to clarify the scope of the activities to be included in the definition of airport operations for the purposes of the target, as some activities, such as decarbonisation of the grid for electricity supply, are outside the control of airport operators.

2.3.6 While embedded mitigation measures included within the application for development consent, in combination with external factors such as the projected decarbonisation of the power grid, do not achieve absolute zero emissions by 2040, there are a range of additional measures that the airport operator can implement, beyond the scope of the application, to make further savings and seek to achieve net zero emissions. This is discussed in paragraphs 12.11.33 to 12.11.11.37 of **Chapter 12 of the ES [REP3-007]**.

2.4 ISH 2 Action Point 23: Explore whether or not the relevant emissions from the Proposed Development should be assessed against the emissions for 'aviation and shipping' in

the sixth Carbon Budget in addition to the carbon budget as a whole.

2.4.1 To support the evaluation of significance of different emissions sources, future GHG emissions from each source (construction, surface access, airport operations and aviation) were contextualised against relevant trajectories to net zero, in line with the current guidance from the Institute of Environmental Management and Assessment (IEMA) (Ref 2.2). It is important that the trajectories selected in each case have direct relevance to the emissions to be contextualised.

2.4.2 In the case of emissions from construction, surface access and airport operations, these were contextualised against the UK's national carbon budgets for the fourth, fifth and sixth carbon budget periods. Beyond this point, carbon budgets have not been set, and therefore only a qualitative assessment can be carried out.

2.4.3 In the case of emissions from aviation, these were specifically contextualised against the Jet Zero Scenario 2 High Ambition emissions pathway published by the UK Government in the dataset (Ref 2.7) that accompanies the Jet Zero Strategy. This pathway is considered to provide the most relevant and meaningful pathway to net zero since it represents UK Government policy, and contains a complete data series of emissions points for each year to 2050.

2.4.4 The Sixth Carbon Budget for the period 2033 to 2037 includes, for the first time, the UK's share of emissions from international aviation and shipping (IAS). The statutory requirement is for the UK to remain within the total for the budget period of 965 $MtCO_2e$. There are no binding sectoral carbon budgets for aviation, shipping or any other sectors. The UK Government has published a Carbon Budget Delivery Plan (CBDP) (Ref 2.8), which does provide sectoral totals, including a total for IAS. The government is explicit, however, that the sectoral carbon budget figures provided within the CBDP *"are only projections and should not be interpreted as hard sectoral policy targets"*. The CBDP budget totals for IAS, furthermore, are not disaggregated between aviation and shipping.

2.4.5 There are, therefore, no aviation-specific sectoral carbon budget figures provided by the UK Government, other than those within the dataset accompanying the Jet Zero Strategy document. The Jet Zero dataset for the High Ambition scenario provides a continuous, annual data series for the period to 2050, and as such the Applicant considers that this dataset is the only plausible comparator trajectory for aviation emissions from the Proposed Development, consistent with the guidance provided by IEMA (Ref 2.2).

REFERENCES

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