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London Luton Airport Expansion

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**8.69 Applicant's response to Written Questions - Climate
Change and Greenhouse Gas Emissions**

Infrastructure Planning (Examination Procedure) Rules 2010

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The Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

**London Luton Airport Expansion Development Consent
Order 202x**

**8.69 APPLICANT'S RESPONSE TO WRITTEN QUESTIONS –
CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS**

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Author:	Luton Rising

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Contents

	Page	
1	Response to Examining Authority Written Questions (Climate Change and Greenhouse Gas Emissions)	1

1 RESPONSE TO EXAMINING AUTHORITY WRITTEN QUESTIONS (CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS)

Table 1.1: Responses to the Examining Authority's Written Questions (Climate Change and Greenhouse Gas Emissions)

PINS ID	Question / Response
CC.1.1	<p>Question to the Applicant: Greenhouse Gas (GHG) Action Plan Explain what these dates associated with implementation of aviation mitigation measures in the GHG Action Plan [APP-081, Table 3] are based on. If these are an estimate, discuss if these should be included in the sensitivity analysis and, if so, update the assessment accordingly.</p> <p>Response: The dates in Table 3 of the GHG Action Plan [APP-081] are based on discussion between the Applicant and the current Airport Operator (LLAOL), these are partly based on existing plans and the requirements and the timescales of the Proposed Development.</p> <p>These are therefore not considered to be an estimate but based on operational requirements. The nature of these measures means that any variation in these dates would not have a material impact on the outcome of the GHG assessment, Chapter 12 of the ES [REP3-007] as such sensitivity analysis is not required.</p>
CC.1.2	<p>Question to the Applicant: GHG Action Plan Tables 3 and 5 of the GHG Action Plan [APP-081] uses phrases such as 'encourage', 'may include', 'seek to implement'. How would these proposals be measured and enforced? How much weight should be given to the likelihood of their delivery?</p> <p>Response: In the case of emissions from aviation these are controlled by government policy. For example, following a second consultation which finished in June 2023 the Government is finalising the UK sustainable aviation mandate. This consultation was to build on the existing commitment made in 2022 to introduce a SAF mandate in 2025 requiring at least 10% of jet fuel to be made from sustainable feedstocks by 2030. It is not within the control of the airport to enforce airlines to use sustainable aviation fuels or use more efficient aircraft. The Applicant will however play a part in facilitating government policy through the provision of sustainable aviation fuels and through operating policy that will incentivise more efficient aircraft.</p> <p>The Applicant notes that measures which could be implemented by the Airport Operator for example electric towing, are not reflected in the methodology used to calculate emissions from aviation i.e., the European Monitoring and Evaluation Programme/European Environment Agency (EMEP/EEA) Calculator. As a result, should the suggested measures to mitigate emissions during LTO not be implemented, this would have no bearing on the GHG emissions reported in Chapter 12 Greenhouse Gases of the ES [REP3-007].</p> <p>For GHG emissions from airport operations and surface access journeys Green Controlled Growth will provide a control mechanism. The GCG mechanism provides additional certainty that GHG emissions from airport operations and surface access journeys will not be exceed irrespective of performance of mitigation measures. The surface access model makes assumption based on a transition from petrol/diesel cars to EVs so any measures to implement emissions based car parking would not have any impact on the GHG emissions figures reported.</p>
CC.1.3	<p>Question to the Applicant: GHG Action Plan Table 3 of the GHG Action Plan [APP-081] states that completing an annual aircraft emissions inventory is a mitigation measure. Is it correct that this is described as a mitigation measure?</p> <p>Response: While completing an annual emissions inventory will not in itself reduce GHG emissions it is an activity that will enable and incentivise emissions reduction. Without measuring the impact of GHG emissions from aircraft it is not possible to robustly understand the effectiveness of reduction measures that are being implemented.</p>
CC.1.4	<p>Question to the Applicant: GHG Action Plan</p>

PINS ID	Question / Response
	<p>A GHG Action Plan for each part of the Proposed Development must be provided by Requirement 32 of the draft Development Consent Order (DCO) prior to it being operated. Where is the Requirement for a regular review of the GHG Action Plan to ensure that it is up to date? If there isn't one, please consider if and where this should be included and provide the preferred drafting.</p> <p>Response: As a preliminary point, it should be noted that Requirement 32 was updated at Deadline 2 to clarify that the obligation to maintain a GHG Action Plan applies to the airport as a whole, rather than each part of the authorised development, and this is now detailed in the Draft DCO [REP3-003].</p> <p>Requirement 32 places an obligation on the Applicant to prepare and maintain a GHG Action Plan which is 'substantially in accordance' with the Outline GHG Action Plan [APP-081]. Paragraphs 1.3.2 and 4.5.1 of the Outline GHG Action Plan states that it will be reviewed and refreshed periodically in line with UK carbon budget periods.</p> <p>These commitments would therefore flow through to the 'full' GHG Action Plan completed in the post-consent phase, and subject to approval by the relevant planning authority.</p>
CC.1.5	<p>Question to the Applicant: Airport ground operations Chapter 12 of the ES [APP-038, Section 12.5.12] states that "<i>as the target for ground operations in the Jet Zero strategy to be net zero by 2040 is only a target outcome, it hasn't been incorporated in the GHG assessment</i>". There does not appear to be an intention in the published consultation document to remove the objective of airport operations meeting net zero by 2040; the purpose of the consultation is to assess how this would be achieved [https://www.gov.uk/government/calls-for-evidence/2040-zero-emissions-airport-target/2040-zero-emissions-airport-target#implementation]. In addition, Luton Borough Council have pledged to become a carbon neutral town by 2040 in response to their declared climate emergency [REP3-100].</p> <ol style="list-style-type: none"> 1. Given this context, why isn't the 2040 net zero target for ground operations being treated as 'policy' for the purposes of the modelling, equivalent to the other targets in the Jet Zero Strategy, such as Zero Emission Aircraft and Sustainable Aviation Fuels? 2. If the 2040 target for airport ground operations has not been included in the assessment, where has it been demonstrated that this would be achievable in principle? Please provide this if it has not been done already. 3. If there remain significant uncertainties around delivery of this target, consider if this should be included in the sensitivity analysis and, if so, update the assessment accordingly. <p>Response:</p> <ol style="list-style-type: none"> 1. The Applicant recognises that the target for Zero Emissions from Airport Operations by 2040 within the Jet Zero Strategy is Government Policy and the intention is to be compliant with this requirement. Given the current uncertainties about what will be included in the scope of the Zero Emissions airport policy outlined in Jet Zero, we have included a residual amount of emissions in our modelling to be conservative based on the current policy position. This represents a worst case position. 2. The Applicant anticipates that airport operations will be zero emissions by 2040 in line with the commitment in Jet Zero. The Applicant has acknowledged that emissions from airport operation in Chapter 12 Greenhouse Gas Emissions of the ES [REP3-007] do not show as zero. The Government have acknowledged in the Jet Zero Strategy that the scope of airport operations is still yet to be defined and that a consultation will be undertaken on this matter. The Applicant has acknowledged in Chapter 12 of the ES that the Green Controlled Growth (GCG) Framework [REP3-017] requires that within three months of a decision being made on the definition of airport operations a review of the Greenhouse Gas Action Plan would be undertaken and the plan updated to reflect the new definition. Emissions from airport ground operations would be controlled over time by GCG. 3. As outlined above, within three months of a decision being made on the definition of airport operations, a review of the Greenhouse Gas Action Plan would be undertaken and the plan updated to reflect the new definition which would remove any uncertainties around the delivery of this target. As noted in Chapter 12 Greenhouse Gas Emissions of the ES [REP3-007], paragraphs 12.11.35 to 12.11.37, the Applicant will bring forward further measures to ensure airport operations are consistent with government policy on this aspect.
CC.1.6	<p>Question to the Applicant: Airport ground operations Emissions from airport ground operations have been compared against the entire UK carbon budget in ES Chapter 12 [APP-038, Table 12.27]. Are there any other measures that the operational emissions should be compared against, such as national and local policies or 'area-based targets'? Include consideration of Luton Borough Council's 'Net Zero Climate Policy and Action Plan' submitted at Deadline (D)3 [REP3-100].</p> <p>Response:</p>

PINS ID	Question / Response
	<p>For the purpose of testing the significance of GHG emissions from airport ground operations, the UK carbon budgets are the only legally binding carbon budgets and therefore it is assumed reasonable that these are used. A position that is supported by <u>Bristol Airport Action Network Coordinating Committee v Secretary of State for Levelling up, Housing and Communities</u> [2023] EWHC 171 (Admin).</p> <p>In any case, the Applicant anticipates that airport operations will be zero emissions by 2040 in line with the commitment in Jet Zero. The Applicant has acknowledged that emissions from airport operations in Chapter 12 of the ES [REP3-007] do not show as zero. The Government has acknowledged in the Jet Zero Strategy that the scope of airport operations is still yet to be defined and that a consultation will be undertaken on this matter. The Applicant has acknowledged in Chapter 12 of the ES that within three months of a decision being made on the definition of airport operations a review of the Greenhouse Gas Action Plan will be undertaken and the plan updated to reflect the new definition.</p> <p>Furthermore, the majority of residual emissions identified in 2040 Chapter 12 of the ES [REP3-007] result from the consumption of grid electricity. These emissions arise at the source of power generators not within the Borough of Luton.</p>
CC.1.7	<p>Question to the Applicant: Fire training ground</p> <p>It is assumed that emissions from the fire training ground would remain constant [APP-038, section 12.5.15]. Is this a reasonable assumption given that the airport is expanding and it is proposed the ground would also be used for external training? If there would be increased emissions, please provide these figures and update any conclusions accordingly.</p> <p>Response:</p> <p>This assumption has been provided by LLAOL. The extent and frequency of use of the fire training ground is not proportionate to total flight numbers at the Airport.</p> <p>The fire training ground is used for practical elements of the Applicant's current competence training as well as for the provision of training for some smaller airfields. The amount of carbonaceous fire used for training purposes would not increase with airport growth. Training currently occurs between 10-14 times per year.</p> <p>Largely, the fire training ground is used for practise deployments, and aircraft search and rescue. The Airport Operator uses simulated smoke, or gas, to provide the relevant hazards/obstacles therefore minimising unnecessary exposure to carbonaceous fire.</p>
CC.1.8	<p>Question to the Applicant: Surface access journeys</p> <p>Emissions from surface access journeys have been compared against the entire United Kingdom (UK) carbon budget in Chapter 12 of the ES [APP-038, Section 12.5.47]. Are there any other measures that the operational emissions should be compared against, such as national and local policies or 'area-based targets'? Include consideration of Luton Borough Council's 'Net Zero Climate Policy and Action Plan' submitted at D3 [REP3-100].</p> <p>Response:</p> <p>National Carbon Budgets are the only legally binding carbon budget. It is therefore assumed to be appropriate to test the significance of the impact of GHG emissions from surface access journeys against the national budgets. It is not possible to definitively allocate any surface access emissions to a particular local authority area.</p> <p>Furthermore, a significant proportion of emissions from surface access journeys arise outside of the Borough of Luton and therefore do not sit within the boundary of the local carbon budget.</p>
CC.1.9	<p>Question to the Applicant: GHG emissions assessment methodology</p> <ol style="list-style-type: none"> 1. Has any sensitivity analysis for GHG emissions been undertaken for the peak year(s) of construction? If not, please provide an assessment of the implications of this for the potential adverse effects from these emissions. 2. Have emissions from the faster growth scenario been quantified? Please signpost to this or provide these figures. Alternatively, explain how Insert 12.4 [APP-038] illustrates the faster growth scenario and sensitivity analysis of this, as signposted in the Applicant's previous response. 3. Confirm whether offsetting is included for the Scope 3 emissions in both the GHG assessment [APP-038, Table 12.19], and if not, should it be? Please amend the documents as necessary. <p>Response:</p> <ol style="list-style-type: none"> 1. No sensitivity testing has been undertaken for peak construction years. Construction emissions have been modelled based on anticipated construction activities for each phase. There is not sufficient granularity of data to allow construction emissions to be reported on a more detailed basis. There will be no implications on the potential adverse effects from these emissions as a result of this.

PINS ID	Question / Response
	<p>2. Emissions from the faster growth scenario have not been quantified. As per Table 12.23, of Chapter 12 Greenhouse Gases of the ES [REP3-007] it was determined that while there would be an increase in overall emissions from a faster growth scenario the impact would be relatively small in the context of the Jet Zero trajectory.</p> <p>3. There will be no emissions to offset as offsetting cannot be used under a zero emissions scenario. Table 12.19 of Chapter 12 Greenhouse Gas Emissions of the ES [REP3-007] presents airport operational emissions. The Applicant anticipates that airport operations will be zero emissions by 2040 in line with the commitment in Jet Zero. The Applicant has acknowledged that emissions from airport operation in Chapter 12 of the ES [REP3-007] do not show as zero. The Government has stated in the Jet Zero Strategy that the scope of airport operations is still yet to be defined, and that a consultation will be undertaken on this matter. The Applicant has acknowledged in Chapter 12 of the ES that within three months of a decision being made on the definition of airport operations a review of the Greenhouse Gas Action Plan will be undertaken and the plan updated to reflect the new definition. As such, offsetting is not included for the Scope 3 emissions.</p>
CC.1.10	<p>Question to the Applicant: Airports National Policy Statement (ANPS) requirements Section 5.76 states that “<i>The applicant should quantify the greenhouse gas impacts before and after mitigation to show the impacts of the proposed mitigation. This will require emissions to be split into traded sector and non-traded sector emissions, and for a distinction to be made between international and domestic aviation emissions</i>”. Please signpost or provide this information.</p> <p>Response: The Applicant acknowledges that it was not possible to disaggregate activity data provided for the GHG assessment sufficiently enough to show the impact of specific mitigation measures, since embedded mitigation was included within the design data provided. Additional mitigation measures presented in Chapter 12 Greenhouse Gases of the ES [REP3-007] were not included in the GHG calculations.</p> <p>Splitting construction and other non-aviation emissions between the traded and non-traded sectors, will have no bearing on the impact of mitigation measure on emissions. It is likely that the impact of some external mitigation measures, such as those included within the Jet Zero Strategy, will be affected by the length of flights. The use of Zero Emission Aircraft, for instance, is likely to be restricted to domestic and short-haul flights, so there will probably be a relationship between the impact of these measures impacts and the split between Domestic/International flights and Traded/non-Traded sectors. These, however, are external mitigation measures that will be implemented by the aviation sector rather than by the Applicant.</p> <p>With regard to the distinction between international and domestic aviation emissions all flights are allocated to one of the following regional destinations, with representative average flight distances in km:</p> <ul style="list-style-type: none"> • Central and Eastern Europe (1,720 km) • Domestic (514 km) • Middle East (5,461 km) • North America (6,076 km) • Turkey, Near East & North Africa (3,154 km) • Western Europe (1,362 km). <p>The forecast regional split of future movements effectively determines which flights will be captured by the requirements of the United Kingdom Emissions Trading Scheme (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.</p> <p>As described in Table 12.11 of Chapter 12 Greenhouse Gases 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, Switzerland¹ 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 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 Appendices [APP-214] only 5 of over 280 departures are forecast to be to Central and Eastern European points which are non-ETS.</p>

¹ Table 12.11 was drafted before this date, and describes Switzerland as a destination that is not covered by the UK ETS. This has now changed, with flights to Switzerland being covered by the UK ETS since 1st of 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.

PINS ID **Question / Response**

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 GHG Methodology and Data of the ES [APP-082]** and repeated in **Table 2** below.

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 CO₂)

PINS ID	Question / Response				
	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