

November 2023

# London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 5 Environmental Statement and Related Documents  
**5.12 Comparison of consented and proposed operational  
noise controls (Tracked Change Version)**

Application Document Ref: TR020001/APP/5.12  
APFP Regulation 5(2)(a)

**The Planning Act 2008**

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations 2009**

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

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**5.12 COMPARISON OF CONSENTED AND PROPOSED  
OPERATIONAL NOISE CONTROLS (TRACKED CHANGE VERSION)**

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<b>Regulation number</b>	5(2)(a)
<b>Planning Inspectorate Scheme Reference:</b>	TR020001
<b>Document Reference:</b>	TR020001/APP/5.12
<b>Author:</b>	Luton Rising

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
Issue 1	June 2023	Additional submission (submitted in response to Rule 9 letter)
Revision 1	November 2023	Additional Submission – Deadline 5

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# 1 INTRODUCTION

- 1.1.1 This document has been prepared in response to the following Rule 9 Request of 16 May 2023:
- 1.1.2 *“To provide a clear comparison of the Applicant’s proposed noise controls with the airport’s existing operational controls, the ExA has made a Procedural Decision to request a summary table setting out the current consented operational noise controls; the proposed operational noise controls under application reference 15/00950/VARCON and the current application for Development Consent. This should summarise matters including, but not limited to, day time and night time operational noise contours and any future contour reductions, air traffic movement limits, quota count limits, operational restrictions (including engine testing) and any noise penalties.”*
- 1.1.3 This document contains a brief description of the ~~15/00950/VARCON~~~~current consented~~ noise controls, how these are ~~proposed to be~~ amended in the ~~1521/00031/VARCON~~<sup>1</sup> ~~proposals~~ and how an entirely new and enhanced noise control process is proposed in the Development Consent Order (DCO). Summary tables are provided setting out the ~~current consented~~ operational noise controls under 15/00950/VARCON; ~~the proposed operational noise controls under application reference 21/15/00031/VARCON~~ and the current application for dDevelopment cConsent.
- 1.1.4 This document deals principally with legally secured noise controls in existing planning permissions and those that would be secured in the DCO. It does not address all of the ongoing noise management processes and voluntary noise controls that are managed through the Noise Action Plan process under the Environmental Noise (2006) England Regulations (Ref 1).
- 1.1.5 This document does not cover the Noise Insulation Schemes which are detailed separately in **Draft Compensation Policies, Measures and Community First [TR020001/APP/7.10REP4-042]** alongside comparisons to the existing noise insulation schemes.
- 4.4.51.1.6 Since this document was originally submitted [AS-121] in response to the 16 May 2023 Rule 9 Request, planning permission 21/00031/VARCON has been granted and a number of additional noise controls have been added to the Proposed Development. The document has therefore been revised at Deadline 5 to provide an up-to-date up-to-date comparison of the consented and proposed operational noise controls.

<sup>1</sup> The planning application reference stated in the ExA letter of 16 May 2023 was 15/00950/VARCON, however, the ExA has confirmed in subsequent communications that the intended planning application reference was 2115/00031/VARCON

## 2 CONSENTED NOISE CONTROLS

### 2.1 Operational noise controls under 15/00950/VARCON ~~the current planning permission~~

2.1.1 London Luton Airport's current consented noise controls can be traced back to planning permission 12/01400/FUL which was subject to a number of conditions, including four relating to noise. These were Condition 11 (Noise Control Scheme), Condition 12 (noise contour thresholds), Condition 13 (Noise Control Monitoring Scheme) and Condition 14 (Ground Noise Control Scheme). A legal agreement was also made under Section 106 of the Town and Country Planning Act (TCPA) 1990. In 2014, the airport operator submitted an application to discharge these noise conditions (14/01519/DOC), and in 2015 Luton Borough Council (LBC) approved the application and the current noise management system for London Luton Airport was established.

2.1.2 In 2017 a subsequent planning permission under section 73 of the TCPA (15/00950/VARCON) was granted which varied noise condition 11(i). The noise conditions from planning permission 12/01400/FUL were restated on this permission but they were amended to reflect that they had already been approved. The condition numbering also changed and the noise conditions became Condition 9 (Noise Control Scheme), Condition 10 (noise contour thresholds), Condition 11 (Noise Control Monitoring Scheme) and Condition 12 (Ground Noise Control Scheme).

### 2.2 ~~Proposed~~ Operational noise controls in application under 21/00031/VARCON

2.2.1 On 8 January 2021, London Luton Airport Operations Ltd (LLAOL), the current operator of the airport, ~~has~~ submitted an application (LBC ref: 21/00031/VARCON) to LBC, the Local Planning Authority (LPA), for a variation of Condition 10 (noise contour thresholds) of 15/00950/VARCON, as well as a number of other conditions not directly related to noise including an amendment to Condition 8 to increase the passenger cap from 18 mppa to 19 mppa.

2.2.2 Noise Conditions 9, 11 and 12 of ~~the 15/00950/VARCON current planning permission~~ were proposed to be unaltered in application 21/00031/VARCON.

2.2.3 On 1 December 2021, LBC resolved to grant permission for this application. The application was subsequently called-in and referred to the Secretary of State for determination instead of being dealt with by the Local Planning Authority. The inquiry to consider the called-in application opened on Tuesday 27 September 2022 and ran until Friday 18 November 2022. On 13 October 2023, the Secretaries of State for Levelling Up, Housing & Communities and Transport issued a joint decision to approve planning permission 21/00031/VARCON. ~~At the time of submission of this document, the outcome of the inquiry is still unknown.~~

## 2.3 Proposed operational noise controls in the DCO

- 2.3.1 The current planning permission noise conditions would be replaced with noise controls secured through the Development Consent Order.
- 2.3.2 The principal noise control secured in the DCO is the **Green Controlled Growth Framework [TR020001/APP/7.08]** and the Noise Envelope that sits within it. In essence, the Noise Envelope defines the noise environmental outcomes to be achieved, or bettered, rather than pre-defining the specific mitigation mechanisms employed to achieve the outcomes. ~~As a result, many of the individual and specific mitigation mechanisms secured in the current planning permission noise conditions would be replaced by the overall Limits and control mechanisms in the Noise Envelope.~~
- 2.3.3 Given that the airport expansion is planned over an extended period of time, this approach provides appropriate flexibility for the airport operator to identify and implement the optimum mitigation at the time it may become required and draw on future technology improvement whilst also providing certainty of the outcomes that will result even in the reasonable worst-case scenario.
- 2.3.4 The Noise Envelope also provides several enhancements to the current consented noise controls, such as independent scrutiny and oversight, increased transparency, adaptive mitigation and management plans and noise limit reviews.
- ~~2.3.4~~ 2.3.5 ~~In addition, the vast majority of the noise controls in the current consent will be secured in the DCO~~ **TR020001/APP/7.08**.

## 3 OPERATIONAL NOISE CONTROL SUMMARY TABLES

- 3.1.1 A high-level summary of the operational noise controls under 15/00950/VARCON, 21/00031/VARCON and the current application for Development Consent ~~current consented operational noise controls; the proposed operational noise controls under application reference 15/00031/VARCON and the current application for Development Consent~~ is presented in **Table 3.1**.
- 3.1.2 Further detail of each individual noise control, and how they relate to each other across the consented and proposed schemes is presented in **Table 3.2**.

Table 3.1: High level comparison of consented and proposed noise control measures

<p><b>Operational Current consented noise controls in planning consent 15/00950/VARCON</b></p>	<p><b>Operational Proposed operational noise controls in application-planning consent 21/00031/VARCON</b></p>	<p><b>DCO proposed operational noise controls</b></p>
<p>The current planning consent 15/00950/VARCON has a number of separate noise control conditions which include noise contour area limits and other pre-defined noise mitigation mechanisms.</p> <p>Condition 9 specifies the Noise Control Scheme under which the airport shall be operated.</p> <p>Condition 10 specifies noise contour area limits.</p> <p>Condition 11 specifies the Noise Control Monitoring Scheme under which the airport shall be operated.</p> <p>Condition 12 specifies the scheme to control ground noise.</p>	<p>The 21/00031/VARCON proposals consent retain Conditions 9, 11 and 12 of the 15/00950/VARCON current planning permission, but seek to modify/modifies Condition 10 to change the noise contour area limits.</p> <p>The proposed modifications initially increase the size of the noise contour area limits in the short-term, which then step down in 2028 and 2031, returning to the same (or slightly tighter in the case of daytime) long-term area limits from the 15/00950/VARCON current consent from 2031 onwards. See <b>Inset 1</b> and <b>Inset 2</b> for an illustration of these modifications.</p>	<p>The principal noise control secured in the DCO is the Green Controlled Growth Framework and the Noise Envelope that sits within it. In essence, the Noise Envelope defines the noise environmental outcomes to be achieved, or bettered, rather than pre-defining the specific mitigation mechanisms employed to achieve the outcomes. <del>As a result, many of the individual and specific mitigation mechanisms secured in the current planning permission noise conditions would be replaced by the overall Limits and control mechanisms in the Noise Envelope.</del></p> <p>Given that the airport expansion is planned over an extended period of time, this approach provides appropriate flexibility for the airport operator to identify and implement the optimum mitigation at the time it may become required and draw on future technology improvement whilst also providing certainty of the outcomes that will result even in the reasonable worst-case scenario.</p>

<p><u>Operational Current consented noise controls in planning consent 15/00950/VARCON</u></p>	<p><u>Operational Proposed operational noise controls in application planning consent 21/00031/VARCON</u></p>	<p><b>DCO proposed <u>operational</u> noise controls</b></p>
		<p>The Noise Envelope also provides several enhancements to the current consented noise controls, such as independent scrutiny and oversight, increased transparency, adaptive mitigation and management plans and noise limit reviews.</p> <p><u>In addition, the vast majority of the noise controls in the current consent will be secured in the DCO. <b>TR020001/APP/7.08</b></u></p>



Table 3.2: Detailed comparison of consented and proposed noise control measures

<p><u>Operational noise controls in planning consent</u>  <del>15/00950/VARCON</del> <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent</u>  <del>21/00031/VARCON</del> <del>Proposed operational noise controls in application</del> <del>21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p><b>Noise contour area limits</b></p>		
<p>The Condition 10 of <del>the current</del> planning permission 15/00950/VARCON states the following:</p> <p><i>“The area enclosed by the 57dB(A) Leq16hr (0700-2300) contour shall not exceed 19.4 sq km for daytime noise, and the area enclosed by the 48dB(A) Leq8hr (2300-0700) contour shall not exceed 37.2 sq km for night-time noise, when calculated by the Federal Aviation Authority Integrated Noise Model version 7.0-d (or as may be updated or amended).</i></p> <p><i>Within five years of the commencement of development a strategy shall be submitted to the Local Planning Authority for their approval which defines the methods to be used by LLAOL or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2sq km for</i></p>	<p>The <del>proposed</del> amendment to Condition 10 (<u>now Condition 9</u>) in <del>application</del> 21/00031/VARCON <u>permission</u> states the following:</p> <p><i><u>“The area enclosed by the 57dB LAeq(16hr) (0700-2300 hrs) contour shall not exceed 21.1km<sup>2</sup> for daytime noise, and the area enclosed by the 48dB LAeq(8hr) (2300- 0700 hrs) contour shall not exceed 42.1km<sup>2</sup> for night-time noise, when calculated by the Federal Aviation Authority Integrated Noise Model version 7.0-d (or as may be updated and amended) for the period up to the end of 2027.</u></i></p> <p><i><u>The commercial passenger throughput at London Luton Airport shall not exceed 18 million passengers in a twelve-month period until a strategy has been submitted to and approved in writing by the Local Planning Authority which</u></i></p>	<p>The Noise Envelope contains noise contour area Limits for the summer average daytime LAeq,16h contour and the summer average night-time LAeq,8h contour. The Noise Envelope Limits are compared against the <del>15/00950/VARCON current consented</del> and <del>21/00031/VARCON</del> <u>15/00950/VARCON proposed</u> Limits in <b>Inset 1</b> and <b>Inset 2</b> for daytime and night-time respectively.</p> <p>The Noise Envelope contains several additional control mechanisms that are not present in <del>15/00950/VARCON</del> <del>the current consented noise controls</del>, or <del>in the</del> <del>21/00031/VARCON proposals</del>, including a mechanism to review and reduce the Noise Envelope Limits where practicable. These additional control mechanisms are set out in the rows below.</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u> Current consented noise controls</p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u> Proposed operational noise controls in application <del>21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p>the area exposed to 57dB(A) Leq16hr (0700-2300) and above and for night-time noise to 31.6 sq km for the area exposed to 48dB(A) Leq8hr (2300-0700) and above.”</p>	<p><u>defines the methods to be used by LLAOL or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.5km<sup>2</sup> for the area exposed to 57dB LAeq(16hr) (0700- 2300 hrs) and above and for night-time noise to 35.5km<sup>2</sup> for the area exposed to 48dB LAeq8hr (2300-0700) and above.</u></p> <p><u>Post 31 December 2027 the area enclosed by the 57dB LAeq16hr (0700-2300 hrs) contour shall not exceed 15.5 km<sup>2</sup> for daytime noise, and the area enclosed by the 48dB LAeq(8hr) (2300-0700hrs) contour shall not exceed 35.5 km<sup>2</sup> for night-time noise.</u></p> <p><u>Post 31 December 2030 the area enclosed by the 57dB LAeq16hr (0700-2300) contour shall not exceed 15.1km<sup>2</sup> for daytime noise, and the area enclosed by the 48dB LAeq(8hr) (2300- 0700 hrs) contour shall not exceed 31.6km<sup>2</sup> for night-time noise.</u></p>	<p>For more information on the Noise Envelope, see <b>Appendix 16.2 of the Environmental Statement [TR020001/APP/5.02REP4-023]</b> and the <b>Green Controlled Growth Explanatory Note [TR020001/APP/7.07]</b>.</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
	<p><del><i>A report on the actual and forecast aircraft movements and consequential noise contours (Day, Night and Quota Periods) for the preceding and forthcoming calendar year shall be reported on 1 December each year to the Local Planning Authority, which shall utilise the standard 92 day summer contour. "The area enclosed by the 57dB LAeq(16hr) (0700-2300hrs) contour shall not exceed 21.1 sq.km for daytime noise, and the area enclosed by the 48dB LAeq(8hr) (2300-0700hrs) contour shall not exceed 42.1 sq km for night-time noise, when calculated by the Federal Aviation Authority Integrated Noise Model version 7.0-d (or as may be updated and amended) for the period up to the end of 2027.</i></del></p> <p><del><i>Prior to the commencement of the development, a strategy shall be submitted to the Local Planning Authority for their approval which defines the methods to be used by LLAOL or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.5 sq km for</i></del></p>	

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u> Current consented noise controls</p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u> Proposed operational noise controls in application 21/00031/VARCON</p>	<p>DCO proposed noise controls</p>
	<p><del>the area exposed to 57dB LAeq(16hr) (0700- 2300hrs) and above and for night-time noise to 35.5 sq km for the area exposed to 48dB LAeq8hr (2300- 0700) and above.</del></p> <p><del>Post 31 December 2027 the area enclosed by the 57dB LAeq16hr (0700- 2300hrs) contour shall not exceed 15.5 sq km for daytime noise, and the area enclosed by the 48dB LAeq(8hr) (2300- 0700hrs) contour shall not exceed 35.5 sq km for night-time noise.</del></p> <p><del>Post 31 December 2030 the area enclosed by the 57dB LAeq16hr (0700- 2300) contour shall not exceed 15.1 sq km for daytime noise, and the area enclosed by the 48dB LAeq(8hr) (2300- 0700hrs) contour shall not exceed 31.6 sq km for night-time noise.</del></p> <p><del>A report on the actual and forecast aircraft movements and consequential noise contours (Day, Night and Quota Periods) for the preceding and forthcoming calendar year shall be</del></p>	

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u> <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u> <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
	<p><i><del>reported on the 1st December each year to the Local Planning Authority, which shall utilise the standard 92 day summer contour."</del></i></p>	
<p><b>Noise contour area thresholds</b></p>		
<p><u>15/00950/VARCON</u><del>The current consented noise controls</del> <u>does</u> not have a mechanism for setting contour area thresholds below the contour area limits.</p>	<p><del>The</del> 21/00031/VARCON <del>proposals</del> <u>does</u> not have a mechanism for setting contour area thresholds below the contour area limits.</p>	<p>Sitting below each Noise Envelope Limit, there will be two Thresholds; a Level 1 Threshold and a Level 2 Threshold. Similar to any potential exceedances of a Limit, there are separate processes to be followed by the airport operator as each Threshold is reached.</p> <p>By including Level 1 and Level 2 Thresholds in the Noise Envelope, growth will be required to be planned, and steps to be taken before a Limit is reached, with the ultimate intention that this early action avoids the Limit being exceeded. By taking this proactive approach, it will ensure that the plans for growth, and noise mitigation if necessary, are adjusted in response to the prevailing circumstances at the time, rather than waiting for a problem to occur and then reacting.</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>The Noise Envelope Limits and Thresholds are presented in <b>Inset 1</b> and <b>Inset 2</b> for daytime and night-time respectively.</p> <p>For more information on the Noise Envelope Thresholds, see the <b>Green Controlled Growth Explanatory Note [TR020001/APP/7.07]</b>.</p>
<p><b>Independent scrutiny and oversight</b></p>		
<p><u>15/00950/VARCON</u> <del>The current consented noise controls do</del> <u>does</u> not contain a mechanism for independent scrutiny and oversight.</p>	<p><del>The</del> <u>21/00031/VARCON proposals do</u> <del>does</del> not contain a mechanism for independent scrutiny and oversight.</p>	<p>To oversee the Green Controlled Growth (<del>GGG</del>) Framework (within which the Noise Envelope sits), a new, independent body known as the Environmental Scrutiny Group (ESG) will be established. As the airport grows, environmental monitoring will be undertaken and submitted annually to the ESG, via a noise Technical Panel. Both the ESG and Technical Panels will include representatives of local authorities and independent technical specialists. The ESG will also be responsible for approving mitigation measures if a Limit was exceeded at any</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>point. In this way, ESG will provide independent oversight and scrutiny of the airport’s growth and impacts.</p> <p>For more information on the Environmental Scrutiny Group, see the <b>Green Controlled Growth Explanatory Note [TR020001/APP/7.07]</b> and <b>Green Controlled Growth Framework Appendix A – ESG Terms of Reference [APP-219 TR020001/APP/7.08]</b>.</p>
<p><b>Monitoring and reporting</b></p>		
<p>The Noise Control Monitoring Scheme approved by LBC on 2 March 2015 (ref: 14/01519/DOC) and referenced in <del>current</del> planning permission 15/00950/VARCON includes a number of noise metrics (including noise contour areas, movement totals, QC totals, noise violation limits) to be monitored and reported in quarterly and annual monitoring reports. The monitoring reports are not independently scrutinised.</p>	<p><u>The London Luton Airport 2022 Noise Management Plan Technical Document referenced in Condition 8 of planning permission 21/00031/VARCON provides includes a number of noise metrics (including noise contour areas, movement totals, QC totals, noise violation limits) to be monitored and reported in quarterly and annual monitoring reports. Additional reporting requirements have been added since 15/00950/VARCON to reflect historic reporting by the airport operator. The</u></p>	<p>The airport operator will be required by the <del>GCG</del> <u>Green Controlled Growth</u> Framework to carry out annual monitoring and reporting to the ESG, the Noise Technical Panel and the general public of the airport’s environmental effects to enable oversight of the airport’s performance against the Noise Envelope Limits, as well as providing wider reporting of aircraft noise information. The Monitoring Report for aircraft noise must follow the Monitoring Plan for aircraft noise which is presented</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
	<p><u>monitoring reports are not independently scrutinised.</u>  <del>Not amended in 21/00031/VARCON proposals</del></p>	<p>in, and secured through, <b>Appendix C of the Green Controlled Growth Framework [TR020001/APP/7.08]</b>.</p> <p>The Monitoring Plan <u>has been updated at Deadline 5 to secure continuation of the quarterly and annual historic reporting required by 15/00950/VARCON and 21/00031/VARCON as well as additional reporting recommended by the Noise Envelope Design Group.</u> <del>requires reporting against the Noise Envelope Limits, the Night Quota Period movement limit (see rows below for information on this movement limit) as well as wider reporting of noise metrics (including noise contour areas, movement totals, QC totals, noise violation limits).</del></p>
<p><b>Periodic review</b></p>		
<p>Condition 9 of <del>the current</del> planning permission 15/00950/VARCON requires that the approved Noise Control Scheme be monitored and reviewed not later</p>	<p><u>The Section 106 agreement for <del>Not amended in 21/00031/VARCON proposals</del> requires that the Luton Airport 2022 Noise Management Plan Technical</u></p>	<p>In order to ensure that <u>Green Controlled Growth GCG</u> <del>remains</del> relevant over time, Paragraph 25 of</p>



<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p>than the 1st and 4th year after its introduction and every subsequent five years.</p>	<p><u>Document is reviewed 12 months following the implementation date, 30 June 2025, 30 June 2027, and subsequently every five years following 30 June 2027.</u></p>	<p>Schedule 2 of the <b>Draft Development Consent Order [TR020001/APP/2.01]</b> sets out that the <u>Green Controlled Growth GCG</u> process should be reviewed periodically by the airport operator. The first such review should be undertaken within 12 months of the end of the Transition Period<sup>2</sup> and then on a five-yearly basis from this point.</p> <p>The review should identify whether any improvements to the <u>Green Controlled Growth GCG</u> process could be made and, where this is the case, this should be summarised in a report to be submitted to the ESG for comment. This could include improvements to process (including monitoring) or modifications to time periods.</p> <p><u>Green Controlled Growth GCG</u> also contains a specific mechanism for the Noise Envelope Limits to be reviewed and reduced where practicable, see separate 'Noise Limit Reviews' row below.</p>

<sup>2</sup> ~~Ref for transition period~~ See Section 2 of the Green Controlled Growth Explanatory Note [TR020001/APP/7.07]

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p><b>Approaching a <del>limit</del><u>Limit</u> - Threshold plans</b></p>		
<p><del>15/00950/VARCON does</del> <u>The current consented noise controls do</u> not have a mechanism for producing plans for independent scrutiny when approaching a Limit.</p>	<p><del>The 21/00031/VARCON proposals do</del> <u>does</u> not have a mechanism for producing plans for independent scrutiny when approaching a Limit.</p>	<p>The <u>Green Controlled Growth GCG</u> Framework requires that if, when preparing a Monitoring Report, the airport operator identifies that any individual environmental effect is above the relevant Level 1 Threshold, the Monitoring Report must include commentary on the avoidance of the exceedance of a Limit. That commentary could include, for example, if the airport operator considers any interventions or measures are needed or are already planned to be brought forward in the forthcoming year that will mitigate the effects of future growth against the Limits.</p> <p><u>In addition, when a Level 1 Threshold is exceeded, the airport operator will convert current and future Level 2 Threshold and Limit noise contour areas into equivalent total 16-hour daytime and total 8-hour night-time quota counts . The airport operator will use total scheduled and forecast daytime and</u></p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p><u>night-time quota counts (and their comparison to the relevant Level 2 Threshold Equivalent QC and the Limit Equivalent QC):</u></p> <ul style="list-style-type: none"> <li><u>a. to inform forward planning of airport operations (both annual and five-year forward plan);</u></li> <li><u>b. to incentivise airlines to operate the quietest aircraft available in response to the opportunity of growth; and</u></li> <li><u>c. as part of the bi-annual process of slot management and capacity declaration.</u></li> </ul> <p>The <u>Green Controlled Growth GCG</u> Framework requires that a Level 2 Plan is produced whenever Monitoring Reports show noise contour areas have exceeded a Level 2 Threshold (without exceeding the Limit).</p> <p>Where a Level 2 Threshold has been exceeded, unless otherwise agreed by the ESG, the airport operator must ensure that any future airport capacity declaration (being hourly runway capacity) does not increase from the existing capacity declaration until either;</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>a Level 2 Plan has been approved by the ESG or Secretary of State, or a Monitoring Report confirms that the relevant effect(s) no longer exceeds the Level 2 Threshold. However, within a capacity declaration it will still be permitted for new slots to be allocated.</p>
<p><b>Breaching a Limit - Mitigation plans</b></p>		
<p><u>15/00950/VARCON</u><del>The current consented noise controls</del> <u>does</u> not have a mechanism for producing plans for independent scrutiny when breaching a Limit.</p>	<p><del>The 21/00031/VARCON proposals</del> <u>does</u> not have a mechanism for producing plans for independent scrutiny when breaching a Limit.</p>	<p>A Mitigation Plan will be required in the <u>Green Controlled Growth GCG</u> Framework whenever Monitoring Reports show that Noise Envelope Limits have been breached, unless it is certified by the ESG that a breach is due to circumstances beyond the control of the airport operator<sup>3</sup>.</p> <p>When the breach of a Limit has occurred, unless otherwise agreed by the ESG, the airport operator will not increase declared hourly runway capacity above the existing capacity declaration and nor should any additional slots be allocated (above the</p>

<sup>3</sup> See **Section 2.2 of Green Controlled Growth Explanatory Note [TR020001/APP/7.07]** for further information on circumstances beyond the control of the airport operator.

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>existing number of allocated slots) until monitoring confirms the noise contour area has fallen below the relevant Limit.</p> <p>A Mitigation Plan will need to set out the airport operator’s plan for bringing the environmental effect(s) back below the Limit, within as short a timeframe as is considered reasonably practicable. The Mitigation Plan must include analysis to demonstrate that this will be the case and include a programme for the implementation of any required mitigation. The mitigation will subsequently need to be delivered according to these timescales.</p> <p>If, in the reasonable opinion of ESG (as informed by the Technical Panels) a draft Mitigation Plan is not likely to satisfactorily address a breach of the <u>Green Controlled Growth GCG</u> Limits, the ESG may request reasonable modifications to be made to the airport operator’s plans. The ESG must then approve or refuse the Mitigation Plan, with written reasons for the decision</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>required to be provided to the airport operator.</p>
<p><b>Noise Limit reviews</b></p>		
<p><u>15/00950/VARCON</u><del>The current consented noise controls</del> <u>does</u> not have a mechanism for further reducing the noise contour area limits <u>beyond those secured in the permission</u>.</p>	<p><del>The 21/00031/VARCON proposals</del> <u>does</u> not have a mechanism for further reducing the noise contour area limits <u>beyond those secured in the permission</u>.</p>	<p>The Noise Envelope <del>also</del> contains a mechanism for the Noise Limits to be reviewed and reduced in future years (beyond the 2030s) if and when quieter ‘next generation’ aircraft become available or an airspace change is approved that would enable lower noise levels to be achieved and benefits shared between the airport and communities. This Noise Limit Review process will:</p> <ul style="list-style-type: none"> <li>i) permit the Proposed Development airport growth;</li> <li>ii) reduce the Noise Limits and corresponding Thresholds if reasonably practicable; and;</li> <li>iii) where (ii) identifies opportunities to reduce noise Limits and corresponding Thresholds, reduce the Noise Limits so they are below the <u>15/00950/VARCON</u><del>current consented</del> short-term noise</li> </ul>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>limits as quickly as is reasonably practicable to share the benefits of the technology improvement with the communities affected by aircraft noise.</p> <p>These Limits and mechanisms are described in detail in the <b>Green Controlled Growth Explanatory Note [TR020001/APP/7.07]</b>.</p>
<p><b>Quota counts, movement limits and noise violation limits</b></p>		
<p>Condition 9 of the <del>current</del> planning permission 15/00950/VARCON states the airport shall be operated in accordance with the following controls:</p> <p><i>“i) Measures with the purpose of phasing out of night time (2300 to 0700) operations by aircraft with a QC value of greater than 1 on either departure or arrival.</i></p> <p><i>ii) Monitoring and review of the scheme not later than the 1st and 4th year after its introduction and every subsequent five years.</i></p>	<p><u>Condition 8 of the 21/00031/VARCON permission secures Sections 5 – 8 of the Luton Airport 2022 Noise Management Plan Technical Document which restates these controls with the following update:</u></p> <p><u>i) this is updated by Paragraph 5.6.1 which prohibits aircraft with a QC value of 2 or greater from operating during the night period (23:00 – 07:00)</u></p> <p><del>Not amended in 21/00031/VARCON proposals</del></p>	<p>The proposed DCO noise controls replace <u>or resecure</u> the controls in Condition 9 <u>of 15/00950/VARCON and Condition 8 of the 21/00031/VARCON</u> as follows.</p> <p>i) The controls secured under Condition 9 <u>of 15/00950/VARCON</u> have been successful in the phasing out of night-time operations by aircraft with a QC greater than 1. In 2021 there was only 1 aircraft movement with a QC greater than 1 that operated during the night-time period. <u>However, to ensure this</u></p>

<p><b><u>Operational noise controls in planning consent 15/00950/VARCON</u></b>  <b><del>Current consented noise controls</del></b></p>	<p><b><u>Operational noise controls in planning consent 21/00031/VARCON</u></b>  <b><del>Proposed operational noise controls in application 21/00031/VARCON</del></b></p>	<p><b>DCO proposed noise controls</b></p>
<p><i>iii) Limits during the night time period (2330 to 0600) of:</i></p> <p><i>a) Total annual movements by aircraft (per 12 month period) of no more than 9,650 movements; and</i></p> <p><i>b) Total annual noise quota movements of no more than 3,500 which, using all reasonable endeavours, shall be reduced at each review until it reaches a point where it does not exceed 2,800 by 2028.</i></p> <p><i>iv) Limits for the Early Morning Shoulder Period (0600 to 0700) of not more than 7,000 movements in any 12 month period.</i></p> <p><i>v) Reporting of the actual and forecast total number of aircraft movements for the preceding and next 12 months to the Local Planning Authority every three months.</i></p> <p><i>vi) Within six months of the commencement of the development, a progressive reduction in the night-time (2300-0700) maximum Noise Violation</i></p>		<p><u>continues a restriction on aircraft of QC of 2 or greater will be retained in line with 21/00031/VARCON<sup>4</sup>. It is therefore not considered necessary to replicate this specific noise control in the DCO.</u></p> <p>The ongoing incentivisation of adoption of quieter aircraft of QC 1 and below, day and night, will be controlled and enforced through the phased noise contour area Limits in the Noise Envelope.</p> <p>ii and v) The monitoring and review requirements of the <u>Green Controlled Growth GCG</u> Framework are set out above.</p> <p><u>iii) The Noise Envelope Limits are defined as noise contour areas to control the environmental outcomes of the airport, whereas Quota Counts and movement limits are measures of ‘input’ rather than the ‘outcome’ of noise impact on communities. These metrics are also poorly correlated with noise impact and therefore Limits using these metrics are</u></p>

<sup>4</sup> The mechanism for securing this will be confirmed at Deadline 6



<p><u>Operational noise controls in planning consent 15/00950/VARCON</u> <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u> <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p><i>Limits (NVL) by the noisiest aircraft shall be implemented, as follows:</i></p> <ul style="list-style-type: none"> <li><i>o 80dB(A) the date hereof</i></li> <li><i>o 79dB(A) from 1st January 2020</i></li> <li><i>o 77dB(A) from 1st January 2028</i></li> </ul> <p><i>vii) Within six months of the commencement of the development, a progressive reduction in the daytime (0700 - 2300) maximum NVL by the noisiest aircraft shall be implemented, as follows:</i></p> <ul style="list-style-type: none"> <li><i>o 82 dB(A) the date hereof</i></li> <li><i>o 80 dB(A) from 1st January 2020”</i></li> </ul>		<p><u>not proposed within the Noise Envelope. However, it is recognised that there is value on retaining some of these controls as separate controls within the DCO as they provide certainty and apply to different periods of the night and year. As such, the restriction on total annual movements (9,650) and total annual quota count (3,500) in the Night Quota Period will be retained<sup>5</sup>. The step-down in total Quota Count from 2028 onwards is not retained as this relates to the step down in noise contour area for the same time period that is specific to the passenger throughput in 15/00950/VARCON and 21/00031/VARCON. Furthermore, it would overlap with the changing contour area Limits (and equivalent Quota Count budgets when above a Level 1 Threshold) in the DCO.</u></p> <p><u>iv) The 7,000 movement Limit for the 06:00 – 07:00 period has not been retained as it would prevent the growth</u></p>

<sup>5</sup> The mechanism for securing this will be confirmed at Deadline 6

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p><del>proposed growth in the DCO from occurring. <b>TR020001/APP/7.08</b></del></p> <p><del>iii and iv) The Noise Envelope Limits are defined as noise contour areas to control the environmental outcomes of the airport, whereas quota counts and movement limits are measures of ‘input’ rather than the ‘outcome’ of noise impact on communities. These metrics are also poorly correlated with noise impact and therefore Limits using these metrics are not proposed within the Noise Envelope. However, quota counts and movement counts will be reported as part of the Noise Monitoring Plan and the movement limit in the night quota period will be retained in DCO Requirement 27:</del></p> <p><del>“Subject to, and without prejudice to, the provisions of this Order, the undertaker must not operate under this Order the airport so that it permits in excess of 9,650 scheduled movements by aircraft in the night quota period<sup>6</sup> per 12 month period unless a variation is otherwise</del></p>

<sup>6</sup> “night quota period” mean the period between the hours of 2330 to 0600

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p><del>agreed by the relevant planning authority, following consultation by the undertaker with the ESG and provided that the relevant planning authority is satisfied that the variation does not give rise to any materially new or materially different environmental effects in comparison with those reported in the environmental statement.”</del></p> <p>vi) Departure noise violation limits <del>are</del><u>will</u> be retained<sup>7</sup>-secured in <b>TR020001/APP/7.08</b> the Noise Monitoring Plan (<b>Appendix C</b> of the <b>Green Controlled Growth Framework [TR020001/APP/7.08]</b>), which requires that the airport operator reports on the application of and compliance with Departure Noise Limits applied at monitoring locations as part of noise management at the airport, using a set limit for all operations that gradually reduces over time. As the purpose of GCG and the Noise Envelope is to control the environmental outcome rather than define the noise mitigation</p>

<sup>7</sup> The mechanism for securing this will be confirmed at Deadline 6.

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u> Current consented noise controls</p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u> Proposed operational noise controls in application 21/00031/VARCON</p>	<p><b>DCO proposed noise controls</b></p>
		<p><del>mechanisms to achieve that outcome, and the noise reduction of next-generation aircraft is not yet known, the limits and their rate of reduction have not been pre-defined. This allows the airport operator flexibility to review and adjust the limits as necessary in line with future aircraft technology noise improvements and other noise mitigation mechanisms to incentivise the adoption of quieter aircraft and stay within the Noise Envelope Limits.</del></p>
<p><b>Fixed noise monitoring terminals and track keeping system</b></p>		
<p>The approved Noise Control Scheme (14/01519/DOC) referenced in <del>current</del> planning permission 15/00950/VARCON specifies that the airport will continue to maintain, calibrate, and operate the current Aircraft Noise and Track Monitoring System or one updated.</p>	<p>Not amended in <u>21/00031/VARCON</u> <del>P19 proposals</del></p>	<p><u>The commitment to maintain, calibrate and operate the Aircraft Noise and Track Monitoring System is retained and secured in The <b>Aircraft Noise Monitoring Plan</b> [TR020001/APP/7.08] Noise Monitoring Plan (<del>Appendix C</del> of the <b>Green Controlled Growth Framework</b> [TR020001/APP/7.08])</u> which requires <u>that</u> the airport operator will, as an initial minimum, maintain the permanent aircraft noise monitoring stations in place at the time of the DCO application. As</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>the airport expands, the airport operator will review and, if necessary, improve the noise monitoring stations in line with ISO 20906 (Ref 2) and SAE-ARP-4721 (Ref 3).</p> <p>The airport operator will consult with the Noise and Track Subcommittee and agree with the <u>Green Controlled Growth GCG</u> Noise Technical Panel the locations for additional permanent noise monitors on departure routes located at 2.5km and beyond 6.5 km from start-of-roll. This is to better understand aircraft noise performance close to and further from the airport.</p> <p>The monitoring station(s) beyond 6.5 km from start-of-roll will be implemented in line with Civil Aviation Authority (CAA) guidance (Ref 4). Once agreed and implemented, the airport operator will utilise monitoring outputs from these additional permanent monitors, as part of the <u>five-yearly annual</u> check on the validation of the DCO Noise Model.</p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
		<p>See the <u><b>Aircraft Noise Monitoring Plan [TR020001/APP/7.08]</b></u> The Noise Monitoring Plan (<del>Appendix C of the Green Controlled Growth Framework [TR020001/APP/7.08]</del>) for further information.</p>
<p><b>Complaints handling system</b></p>		
<p>The approved Noise Control Scheme (14/01519/DOC) referenced in <del>current</del> planning permission 15/00950/VARCON specifies that the airport will continue to maintain their complaints handling system.</p>	<p>Not amended in <u>21/00031/VARCON</u><del>P19 proposals</del></p>	<p><u>The commitment to maintain the complaints handling system is retained and secured in the Aircraft Noise Monitoring Plan [TR020001/APP/7.08]</u>.<del>The airport operator's complaints handling system is long established and will be retained as part of their ongoing noise management and Noise Action Plan process. It is therefore not considered necessary to secure this as an additional Requirement in the DCO.</del></p>
<p><b>Sanctions in respect of track keeping and noise violation limits</b></p>		
<p>The approved Noise Control Scheme (14/01519/DOC) referenced in <del>current</del> planning permission 15/00950/VARCON contains details of the financial penalties</p>	<p>Not amended in <u>21/00031/VARCON</u><del>P19 proposals</del></p>	<p><u>The commitment to monitor off-track and departure noise violations and impose financial penalties will be</u></p>

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p>levied in respect to noise violation limits and track keeping violations.</p>		<p><del>retained<sup>8</sup> <u>TR020001/APP/7.08</u>. The airport operator will continue to apply financial penalties in respect to noise violation limits and track keeping violations as part of their ongoing noise management and Noise Action Plan process. It is therefore not considered necessary to secure this as an additional Requirement in the DCO.</del></p>
<p><b>Ground noise control</b></p>		
<p>The approved Noise Control Scheme (14/01519/DOC) referenced in <del>current</del> planning permission 15/00950/VARCON contains details of ground noise controls including:</p> <p><i>“i) Measures to limit the ground running of aircraft propulsion engines within Luton Airport between 2300 and 0700</i>  <i>ii) Preferential use of stands and taxiways for arriving/departing aircraft between 2300 and 0700</i>  <i>iii) Steps to limit the use of auxiliary power units (including the provision of</i></p>	<p>Not amended in <u>21/00031/VARCON</u><del>P19 proposals</del></p>	<p><u>Ground noise controls are secured through a Requirement to submit, and gain approval from the relevant planning authority, a ground noise management plan which must be substantially in accordance with the <b>Outline Ground Noise Management Plan [REP4-049]</b>.</u></p> <p><u>The <b>Outline Ground Noise Management Plan [REP4-049]</b> retains the ground noise controls in 15/00950/VARCON and 21/00031/VARCON, with the addition of controls specific to the Proposed</u></p>

<sup>8</sup> The mechanism for securing this will be confirmed at Deadline 6

<p><u>Operational noise controls in planning consent 15/00950/VARCON</u>  <del>Current consented noise controls</del></p>	<p><u>Operational noise controls in planning consent 21/00031/VARCON</u>  <del>Proposed operational noise controls in application 21/00031/VARCON</del></p>	<p><b>DCO proposed noise controls</b></p>
<p><i>fixed electrical ground power to stands and or suitably quietened ground power units)</i>  <i>iv) No ground running of aeroplane engines for testing or maintenance purposes between 2300 and 0700 and designation of areas for such testing between 0700 and 2300.”</i></p>		<p><u>Development such as relocation and redesign of the Engine Run-Up Bay and the specification of a new ground noise acoustic barrier.</u><del>The airport operator’s ground noise controls are long established and will be retained as part of their ongoing noise management and Noise Action Plan process. It is therefore not considered necessary to secure these as additional Requirements in the DCO.</del></p>



## 4 COMPARISON OF NOISE CONTOUR AREA LIMITS

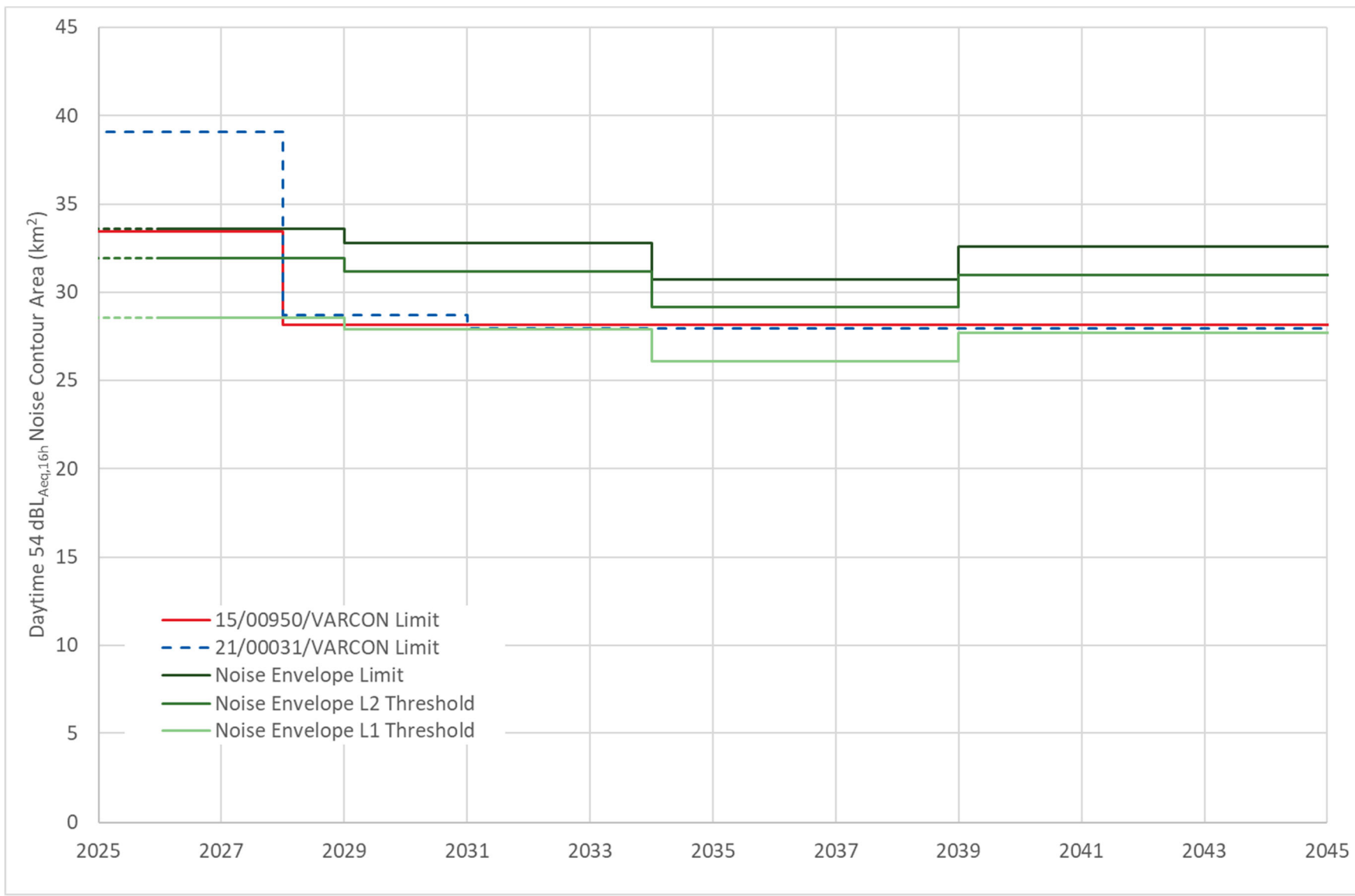
4.1.1 Comparison of noise contour area limits are provided in **Inset 1** and **Inset 2** for daytime and night-time respectively. As the contour area limits ~~across the current consent in 15/00950/VARCON~~, 21/00031/VARCON ~~proposals~~ and DCO Noise Envelope proposals use different noise metrics and are calculated in different noise models, the following adjustments were made in order to provide a direct comparison:

- a. Integrated Noise Model (INM) contour area limits were converted to Aviation Environment Design Tool (AEDT) contour area limits using conversion factor of 0.98 for daytime and 1.02 for night-time. These conversion factors were determined by comparing noise model outputs from INM and AEDT when using the same 2019 input dataset. For further information, see **Section 16.16 and 16.17 of Appendix 16.1 of the Environmental Statement [AS-096TR020001/APP/5.02]**; and
- b. where modelled data was not available, 57dBL<sub>Aeq,16h</sub> contour areas from ~~15/00950/VARCON the current consent~~ and 21/00031/VARCON proposals were converted to 54dBL<sub>Aeq,16h</sub> contour areas so that they could be compared with the proposed Noise Envelope limits using a conversion factor of 1.89. This conversion factor was calculated as an average ratio of the 54/57 dBL<sub>Aeq,16h</sub> contours across all modelled scenarios (including core scenarios and sensitivity tests) from **Chapter 16 of the Environmental Statement [TR020001/APP/5.04REP1-003]**.

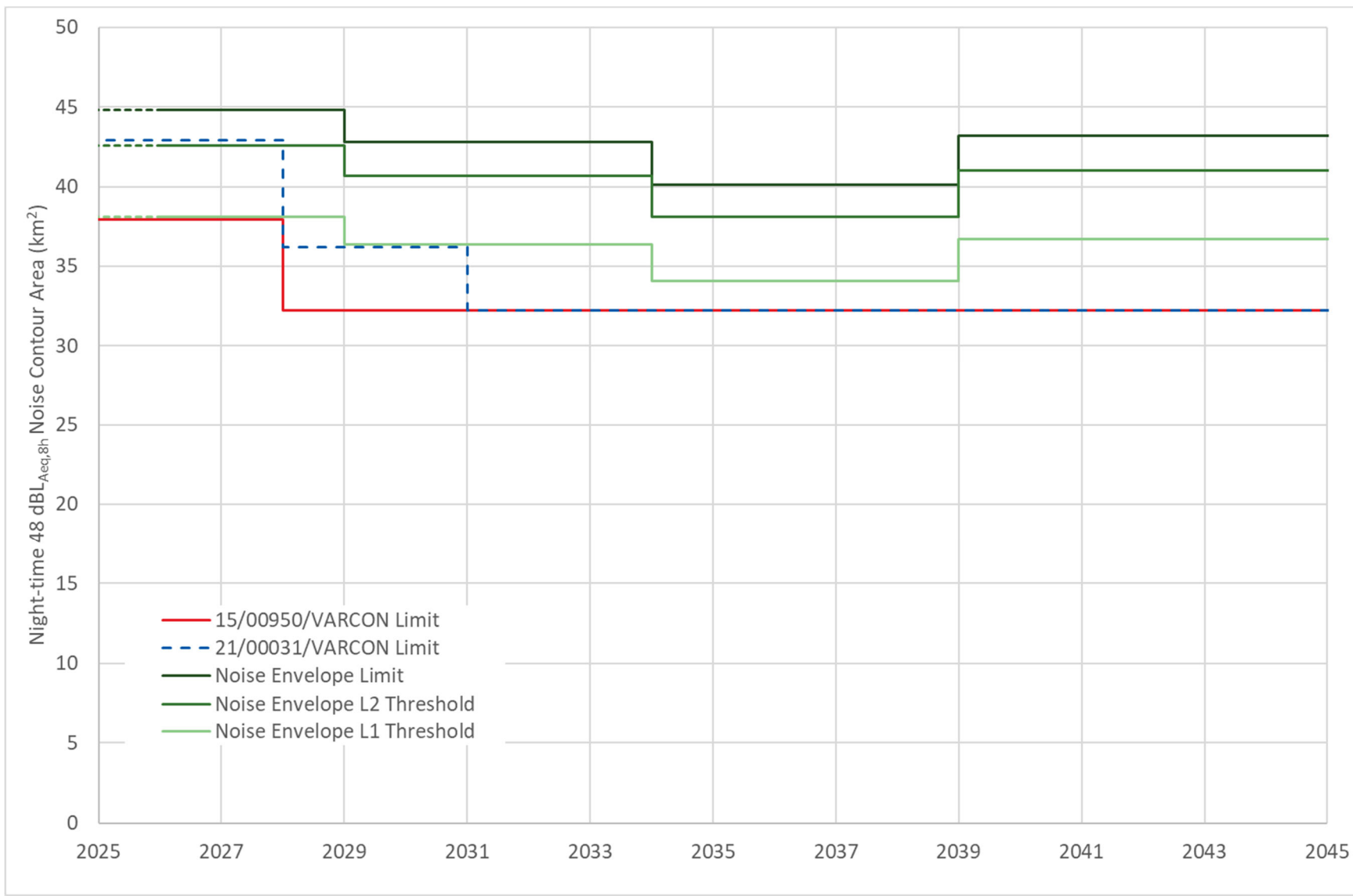
4.1.2 There are mechanisms within the Noise Envelope for the limits to be reduced from 2039 onwards where reasonably practicable (see **Section 3.2 of the Green Controlled Growth Explanatory Note [TR020001/APP/7.07]**). However the potential reductions cannot be quantified at this time and so are not represented graphically in **Inset 1** and **Inset 2**.

4.1.3 It should be noted that relative differences in noise contour areas and Limits do not reflect the same scale of difference in noise levels and potential effects at a given location on the ground. This is because small changes in noise levels tend to result in relatively larger changes in contour areas. This can be illustrated by comparing contour area and noise change tables. For example, **Table 16.34 of Chapter 16 of the Environmental Statement [TR020001/APP/5.04REP1-003]** shows that the difference in the 2027 54dBL<sub>Aeq,16h</sub> noise contour area between the Do-Minimum and Do-Something scenarios is 4.3 km<sup>2</sup> (a 16% increase), whereas the corresponding noise level change shown in **Table 16.38** is less than 1dB.

Inset 1 Comparison of noise contour area Limits, calculated in AEDT (daytime)



### Inset 2 Comparison of noise contour area Limits, calculated in AEDT (night-time)



## GLOSSARY AND ABBREVIATIONS

<b>Term</b>	<b>Definition</b>
AEDT	Aviation Environmental Design Tool
CAA	Civil Aviation Authority
DCO	Development Consent Order
ESG	Environmental Scrutiny Group
<del>GCG</del>	<del>Green Controlled Growth</del>
LBC	Luton Borough Council
LLAOL	London Luton Airport Operations Limited
LPA	Local Planning Authority
INM	Integrated Noise Model
TCPA	Town and Country Planning Act
QC	Quota Count

## REFERENCES

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- Ref 1 Her Majesty's Stationery Office (2006), The Environmental Noise (England) Regulations.
- Ref 2 ISO 20906:2009, Amended 2013. Unattended monitoring of aircraft sound in the vicinity of airports.
- Ref 3 SAE-ARP-4721:2006. Part 1: Monitoring Aircraft Noise and Operations in the Vicinity of Airports: System Description, Acquisition, and Operation. Part 2: Monitoring Aircraft Noise and Operations in the Vicinity of Airports: System Validation.
- Ref 4 Civil Aviation Authority, CAP 1691 Departure Noise Mitigation: Main Report, 2018