



# Gatwick Airport Northern Runway Project

Environmental Statement  
Appendix 14.9.7: The Noise Envelope

**Book 5**

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## 1 Introduction

- 1.1.1 The Northern Runway Project (NRP) is being promoted by Gatwick Airport Ltd (GAL) through the Development Consent Order planning process.
- 1.1.2 This document explains the development of the noise envelope that the NRP will operate within, how remaining within the envelope will be independently verified by the CAA, and the process for future reviews of the envelope to ensure it remains relevant. It is structured as follows:
- 1.1.3 **Section 2** describes the existing comprehensive suite of measures put in place by the Government and GAL to limit and, over time, reduce noise at Gatwick Airport. The noise envelope to be introduced in connection with the operation of the NRP will complement these measures, provide certainty to the public regarding the maximum levels of noise which are permissible at Gatwick Airport, and that over time they will reduce.
- 1.1.4 **Section 3** introduces the requirements for a noise envelope based on Government policy and guidance. It refers to the Airports National Policy Statement (2018), the Aviation Policy Framework (2013) and CAP 1129, a research paper published by the CAA into how noise envelopes could be defined at airports.
- 1.1.5 GAL has undertaken extensive public consultation on the NRP and on the development of the noise envelope. Airlines and industry trade bodies, Local Authorities and Community Noise Groups were all consulted on the noise envelope. **Section 4** reviews the consultation undertaken, including the formation of the Noise Envelope Group which brought together the relevant stakeholders and reported through Gatwick’s Noise Management Board.
- 1.1.6 **Section 5** sets out the noise metrics which are used to define the noise envelope. These are termed “primary metrics” – those which are used to quantify noise impacts and which will control the airport’s noise by reference to the area of noise contours over day and night periods<sup>1</sup>. In response to consultation feedback, GAL will also report through the Noise Envelope a number of secondary noise metrics which are not used to determine

impacts, but which are still able to convey noise exposure. These will provide more information on average noise levels, the frequency of noise events, and the performance of the airport’s fleet over time.

- 1.1.7 **Section 6** explains the noise limits and contour areas to be adopted, and how these will change over time as Gatwick Airport grows with the NRP. 9 years after the NRP opening, and despite the growth in movements, noise levels at Gatwick with the Northern and Main Runway in coordinated dual operation will be guaranteed to fall below the noise levels in 2019. After this, reviews will take place at 5-year intervals to ensure the envelope remains relevant.
- 1.1.8 **Section 7** explains how Gatwick will monitor the noise envelope and forecast ahead to ensure it remains in compliance with it (both the extant limit and predicted compliance with future defined step-downs); and the role of the CAA as an Independent Reviewer for this process. It also sets out the actions that Gatwick will take in the event of a breach of the extant envelope limits, or if future forecasts indicate a breach may arise if further action is not taken.
- 1.1.9 **Section 8** sets out the factors to be taken into account during the review process for the noise envelope. Reviews of the noise envelope limits will be undertaken at 5-year intervals and will consider how noise may change at the airport over the next 5-year period. The review will be presented to the CAA for scrutiny and verification. If the Review identifies that the noise envelope contours should reduce, and that this reduction constitutes the introduction of a new operating restriction, then further consultation would be required with airlines and other parties in accordance with Regulation (EU) No 598/2014<sup>2</sup>.

## 2 Existing measures to control noise in place at Gatwick Airport

- 2.1 **Gatwick Airport’s status as a “designated” aerodrome under the CAA Act 1982**
  - 2.1.1 By virtue of the Civil Aviation (Designation of Aerodromes) Order 1981 Gatwick Airport is a designated aerodrome for the purposes of Section 78 of the Civil Aviation Act 1982.
  - 2.1.2 Section 78 of the CAA Act 1982 provides for the regulation of noise and vibration from aircraft. The reason for the designation for noise purposes relates to Gatwick Airport’s strategic importance to the UK economy as a London Airport, and Government considering it appropriate for it to take decisions on the right balance between noise controls and economic benefits, reconciling the local and national strategic interests<sup>3</sup>.
  - 2.1.3 The provisions within Section 78 are wide ranging and allow the Secretary of State for Transport to publish notices “being requirements appearing to the Secretary of State to be appropriate for the purpose of limiting or of mitigating the effect of noise and vibration connected with the taking off or landing of aircraft at the aerodrome”.
  - 2.1.4 These are notices which operators of aircraft using the airport must comply with, which control aircraft operations, and which provide directions to those responsible for managing the airport. Section 78 also allows for sanctions against operators who do not comply with the published notices. The effect of the notices published pursuant to Section 78 is therefore that the Secretary of State for Transport assumes responsibility for the measures controlling noise at Gatwick Airport.
  - 2.1.5 The controls at Gatwick are promulgated in the UK Aeronautical Information Publication<sup>4</sup> and include:
    - noise abatement procedures for take-off and landing, including use of departure noise preferential routings, use of continuous descent and low power, low drag operating procedures for landing, and general prohibitions on certain areas not to be overflown;

<sup>1</sup> The terminology for primary and secondary noise metrics accords with that used in CAA CAP1616 Airspace Change document – see paragraph B54.

<sup>2</sup> As amended by The Aviation Noise (Amendment) (EU Exit) Regulations 2019.

<sup>3</sup> See the Aviation Policy Framework (Cm 8584, March 2013); §3.10.

<sup>4</sup> See the UK Aeronautical Information Publication, London Gatwick entry, EGKK Section AD 2.21 Noise Abatement Procedures.

- departure noise limits; and
  - the imposition of further operating restrictions, movement limits and quota limits for aircraft operating within the night period.
- 2.1.6 The night noise restrictions at Gatwick are published by the UK Aeronautical Information Service on behalf of the Department for Transport in a notice twice yearly for the Summer and Winter scheduling periods<sup>5</sup>. Aircraft operating in the “night quota period” (2330-0600 local time) are limited by summer and winter seasonal movement limits and are also given a “Quota Count” (QC) score dependent on engine fit and weight, and the quota points used are counted against permitted seasonal quota limit totals. The noisiest types of aircraft with QC 8 and 16 may not operate at night (between 2300 and 0700 local time) and aircraft with QC 4 may not be scheduled within the night quota period. There is some flexibility permitted to carry over unused night quota and movements from season to season, and also scheduling penalties if the movements or quota limits in a season are exceeded.
- 2.1.7 The night noise restrictions also contain provisions to disregard movements under particular circumstances (known as dispensations) – for example emergencies, where there is an immediate danger to life or health, whether human or animal; widespread and prolonged Air Traffic disruption and delays as a result of disruption leading to serious hardship and congestion at the airfield or terminal.
- 2.1.8 Section 14.2 of **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) gives further descriptions of existing noise management at the airport.
- 2.2 Economic regulation by the CAA and other controls**
- 2.2.1 GAL’s charges to operators are regulated by the CAA. Within the regulatory structure, noisier aircraft pay more to operate. The airport also sets penalties for aircraft which breach the DfT departure noise limits.
- 2.2.2 Additionally, GAL is required to submit a Noise Action Plan at 5-year intervals to the Secretary of State for Environment, Food and Rural Affairs<sup>6</sup>. This is as a requirement of the Environmental Noise (England) Regulations 2006. Noise Action Plans have to

be developed in the context of the existing regulatory background and must include a description and assessment of the existing framework of control relating to noise from the airport. They are designed to manage noise issues and effects, including noise reduction if necessary.

2.2.3 The measures and processes above are applied to meet Government policy to limit and where possible reduce the number of people significantly affected by aircraft noise over time.

### 3 Requirements for a Noise Envelope

#### 3.1 Introduction

3.1.1 This section summarises government policy and relevant guidance on Noise Envelopes. It does not cover wider government policy on aircraft noise, which is summarised in **ES Chapter 14: Noise and Vibration** (Doc Ref. 5.1) and **ES Appendix 14.9.2: Air Noise Modelling** (Doc Ref. 5.3).

#### 3.2 Government Policy on Noise Envelopes

3.2.1 The concept of a Noise Envelope was first introduced in government policy in the Aviation Policy Framework (APF) in 2013, relevant paragraphs of which provide as follows:

3.2.2 **3.12 The Government’s overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction with industry.**

3.2.3 **3.13 This is consistent with the Government’s Noise Policy, as set out in the Noise Policy Statement for England (NPSE) which aims to avoid significant adverse impacts on health and quality of life.**

3.2.4 **3.24 The acceptability of any growth in aviation depends to a large extent on the industry tackling its noise impact. The Government accepts, however, that it is neither reasonable nor realistic for such actions to impose unlimited costs on industry.**

3.2.5 *Instead, efforts should be proportionate to the extent of the noise problem and numbers of people affected.*

**3.29 The Government wishes to pursue the concept of noise envelopes as a means of giving certainty to local communities about the levels of noise which can be expected in the future and to give developers certainty on how they can use their airports. Following any such recommendations made by the Airports Commission, in the case of any new national hub airport capacity or any other airport development which is a nationally significant infrastructure project, the Government is likely to develop a National Policy Statement (NPS) to set out the national need for such a project. The Government would determine principles for the noise envelope in the NPS having regard to the following:**

- *The Government’s overall noise policy.*
- *Within the limits set by the envelope, the benefits of future technological improvements should be shared between the airport and its local communities to achieve a balance between growth and noise reduction.*
- *The objective of incentivising airlines to introduce the quietest suitable aircraft as quickly as is reasonably practicable.*

3.2.6 **3.30 At other airports, local communities are encouraged to work with airports to develop acceptable solutions which are proportionate to the scale of the noise problem and be involved in discussions about the acceptable limits of noise. The Government believes that the process of designing and consulting on a noise envelope could be a suitable mechanism to achieve this. The CAA will produce further guidance on the use and types of noise envelopes which may be used in the context of any proposals for new airport capacity and the work of the Airports Commission.**

3.2.7 The Airports National Policy Statement (ANPS, June 2018) (paragraph 5.60) includes policy relating to the proposed third runway at Heathrow. The NPS requires Heathrow to put forward a noise envelope for its third runway proposal:

*‘Such an envelope should be tailored to local priorities and include clear noise performance targets. As such, the design of the envelope should be defined in consultation with local communities and relevant*

<sup>5</sup> See United Kingdom Aeronautical Information Service current Supplements page (<https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/aip-supplements/> and current notice available

at [https://nats-uk.ead-it.com/cms-nats/export/sites/default/en/Publications/aip-supplements/EG\\_Sup\\_2023\\_007\\_en.pdf](https://nats-uk.ead-it.com/cms-nats/export/sites/default/en/Publications/aip-supplements/EG_Sup_2023_007_en.pdf))

<sup>6</sup> See DEFRA Guidance for Airport Operators to produce noise action plans under the terms of the Environmental Noise (England) Regulations 2006 (as amended) July 2013

stakeholders and take account of any independent guidance such as from the Independent Commission on Civil Aviation Noise. The benefits of future technological improvements should be shared between the applicant and its local communities, hence helping to achieve a balance between growth and noise reduction. Suitable review periods should be set in consultation with the parties mentioned above to ensure the noise envelope's framework remains relevant.'

3.2.8 For the NRP, the Planning Inspectorate's (PINS) Scoping Opinion (see section 4) identified that a Noise Envelope should be developed, and specifically referenced the Airports NPS in this regard as follows:

*'The Inspectorate notes that there is no reference to a defined 'noise envelope' as referred to in paragraph 5.60 of the Airports NPS, and the Applicant should make efforts to agree the need for such provisions with relevant consultation bodies as a mechanism to manage noise effects.'*

3.2.9 In March 2023, the Government updated the strategic objective of its Aviation Noise Policy from that contained in the Aviation Policy Framework to the following:

*'The Government's overall policy on aviation noise is to balance the economic and consumer benefits of aviation against their social and health implications in line with the International Civil Aviation Organisation's Balanced Approach to Aircraft Noise Management. This should take into account the local and national context of both passenger and freight operations and recognise the additional health impacts of night flights.'*

*The impact of aviation noise must be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise'.*

### 3.3 CAA Guidance on Noise Envelopes

3.3.1 In December 2013 the CAA published CAP 1129: Noise Envelopes.

3.3.2 CAP 1129, unlike other CAPs, does not prescribe rules and procedures, rather it is a report of research carried out by the

Environmental Research and Consultancy Department of the CAA into how noise envelopes can be defined. In a Gatwick Noise Management Board Meeting on 9<sup>th</sup> March 2022 the CAA was asked to confirm the status of CAP1129. They subsequently advised '...CAP 1129 is a guidance document that was commissioned by the DfT and produced for them by colleagues in the Environmental Research and Consultancy Document. The CAA has no statutory powers and/or regulatory role in terms of enforcing the content.'

3.3.3 The development of the noise envelope has taken account of the key conclusions and example scenarios from the study set out in CAP 1129 insofar as it applies to the NRP. **ES Appendix 14.9.5 Noise Envelope Background** (Doc Ref 5.3) gives further details.

3.3.4 CAP 1129 emphasises the need for consultation with stakeholders. The consultation undertaken to arrive at the proposed noise envelope is summarised in Section 4 below.

3.3.5 GAL has developed the Noise Envelope for the NRP, in the context of and having regard to aviation policy and relevant reports and guidance. In summary, the Noise Envelope provides that noise levels are limited as the airport expands and also that they will reduce over time, so as to give communities certainty of future aircraft noise levels.

## 4 Consultation

### 4.1 Introduction

4.1.1 This section summarises the process followed to arrive at the Noise Envelope in connection with the NRP. Further details are available in the ES and the following documents which are submitted in support of the application for development consent for the NRP:

- **ES Appendix 14.3.1 Summary of Stakeholder Responses** (Doc Ref 5.3)
- **ES Appendix 14.3.2 Summary of PEIR and Updated PEIR Responses – Noise and Vibration** (Doc Ref 5.3)
- **ES Appendix 14.9.8 The Noise Envelope Group Output Report** (Doc Ref 5.3)
- **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope** (Doc Ref 5.3)

### 4.2 Summary of consultation undertaken

4.2.1 In September 2019 GAL submitted a Scoping Report to PINS outlining the NRP proposal and the methodology proposed to assess its environmental impacts. In September 2021 GAL published a Preliminary Environmental Impact Report (PEIR) for public consultation.

4.2.2 The PEIR addressed comments from PINS and others on the Scoping Report and provided a description of the NRP proposal and preliminary information in respect of its likely significant environmental effects, including from aircraft noise.

4.2.3 Prescribed parties were written to and advised that the NRP included proposals which could constitute a new 'operating restriction' in accordance with how that term is defined in Regulation (EU) No. 598/2014 (Regulation 598). Those persons prescribed by Article 6(2)(d) of Regulation 598 were invited to review the PEIR documents and respond to the NRP consultation, including the preliminary assessment and the proposed mitigation measures relating to aircraft noise emissions.

4.2.4 GAL carried out further engagement with stakeholders in 2022, including through a Noise Envelope Group, to seek views on and develop the noise envelope for the NRP. More information relating to how the noise envelope was developed through this process is provided in **ES Appendix 14.9.5: Noise Envelope Background** (Doc Ref 5.3).

### 4.3 Noise envelope published for consultation in the PEIR

4.3.1 The PEIR provided an outline of the noise envelope and sought views on how it should be developed. The proposal gave proposed noise limits and a brief outline of the proposed management process, seeking views on each. It also provided the objective of a noise envelope for the NRP, as follows:

*The Project will:*

- *avoid significant adverse impacts on health and quality of life from noise;*
- *mitigate and minimise adverse impacts on health and quality of life from noise;*
- *where possible, contribute to improvements to health and quality of life; and*
- *provide certainty to the communities around Gatwick that noise will not exceed contour limits and will reduce over time consistent with the ICAO Balanced Approach.*

4.3.2 There were 5,941 comments on the PEIR which were relevant to the Consultation Report heading 13b – Managing and mitigating effects: Noise Envelope. Of these:

- 9% supported the Noise Envelope proposal;
  - 4% opposed the principle of the proposed Noise Envelope; and
  - 87% made suggestions to improve the Noise Envelope proposal.
- 1,000 comments specifically referred to the Noise Envelope. Several organisations made multiple comments. These have been considered in developing the Noise Envelope.

#### 4.4 Formation of a Noise Envelope Group

4.4.1 Following analysis of the consultation responses received during the Autumn 2021 consultation, GAL formed a Noise Envelope Group (NEG) in May 2022 to seek further views on the noise envelope and to help inform the development of the final Noise Envelope proposal. Terms of reference were produced, and two sub-groups were established; the Local sub-group and the Aviation sub-group, to facilitate discussions with local communities, local authorities, and aviation stakeholders. Twelve two-hour meetings were held between 26 May and 11 October 2022. These were structured around four themes drawn from the PEIR consultation responses and CAP 1129 as follows:

- Developing the Noise Envelope – policy, guidance, PEIR consultation response
- Options – metrics etc.
- Operating the Noise Envelope – monitoring, reporting, actions GAL can take
- Enforcement – periodic review, enforcement

4.4.2 All of these aspects of a noise envelope were discussed and debated. Details can be seen in **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope, June 2023** (Doc Ref 5.3), which provides copies of the various presentations given, papers submitted and notes on the meetings held. The final two meetings focused on producing **ES Appendix 14.9.8, Noise Envelope Group Output Report, November 2022** (Doc Ref 5.3).

4.4.3 Taking into account the NEG engagement, GAL identified changes and modified the original proposal to improve it (see later below). Unfortunately, the majority of the further proposals

put forward by GAL were not agreed by the community noise action groups on the NEG, many of whom oppose any expansion of Gatwick Airport. Other suggestions made were considered by GAL to be disproportionately complex or onerous in the context of the scale of likely noise impacts associated with the NRP.

4.4.4 The form and detail of the Noise Envelope was discussed with Local Authorities and in the Noise Topic Working Groups during 2022 and January 2023. Some of the suggestions put forward by Local Authorities are also referenced in the sections below and discussed in **ES Appendix 14.9.5 Noise Envelope Background** (Doc Ref 5.3), such as choice of noise metrics, choice of noise levels, model accuracy, and review processes.

## 5 Noise Metrics

### 5.1 Noise metrics defining the envelope

5.1.1 CAP 1616 Airspace Design: Guidance on the Regulatory Process for Changing Airspace Design including Community Engagement Requirements, fourth edition (CAA, 2021) defines two categories of metrics for describing aircraft noise – Primary and Secondary metrics. The Noise Envelope adopts the same terminology. The noise metrics adopted in CAP 1616 use the 92 day summer period because it is the noisiest period at UK airports. The Noise Envelope follows this guidance.

5.1.2 CAP 1616 paragraph B54 explains this distinction as follows:

5.1.3 *When considering noise impacts, the CAA will weigh the outcomes from 'primary' metrics over 'secondary' metrics. Primary metrics will be those that are used to quantify significant noise impacts, such as WebTAG outputs. Secondary metrics will be those that are not being used to determine significant impacts, but which are still able to convey noise effects, such as N65 contours and Lmax levels.*

5.1.4 The primary noise metrics and levels used to set the limits for the Noise Envelope are listed in Table 1. The secondary noise metrics are listed in Table 2.

**Table 1: Primary Noise Metrics:**

L <sub>eq, 16 hour day</sub> 51 dB contour area <sup>7</sup>	The area enclosed by the 92-day summer season average mode noise contour.
L <sub>eq, 8 hour night</sub> 45 dB contour area	The area enclosed by the 92-day summer season average mode noise contour.

5.1.5 Gatwick airport, like other UK airports, has its highest air traffic in the summer so is noisiest in the summer, and government research has historically shown that summer season noise contours correlate better with annoyance than those for other seasons.

5.1.6 L<sub>eq, 16 hour day</sub> 51 dB and L<sub>eq, 8 hour night</sub> 45 dB summer season noise levels represent the daytime and night-time Lowest Observable Adverse Effect Level (LOAELs) for day and night. The area of the contours for these metrics is considered to give the clearest and simplest indication of area affected by aircraft noise, consistent with government guidance, although it is recognised that some people are affected at lower noise levels.

5.1.7 In addition to the noise envelope contours for the summer season, broader controls in relation to the NRP include a cap on the overall number of Air Transport Movements (ATMs) annually at the Airport. Whilst this control is not directly related to limiting aircraft noise emanating from the airport, it will have a limiting effect by providing a constraint to growth beyond that figure.

5.1.8 As a result of engagement with Consultees, the following secondary noise metrics described below will be reported annually within the noise envelope reporting process.

**Table 2: Secondary Noise Metrics:**

Airport Fleet Average Aircraft Noise L <sub>max</sub> dB <sup>8</sup>	The average L <sub>max</sub> noise level from all aircraft measured under the Departure Noise Limits monitoring regime over the summer season or a representative part of it.
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<sup>7</sup> All noise contours shall be produced using the ANCON model by the CAA, or equivalent as approved by the Independent Reviewer.

<sup>8</sup> This metric was promoted by Community Noise Groups, as discussed in Section 2 of **ES Appendix 14.9.5: Air Noise Envelope Background** (Doc Ref 5.3).

N65 Day 20 contour area <sup>9</sup>	The area enclosed by the 92 day summer season average mode noise contour.
N60 Night 10 contour area	The area enclosed by the 92 day summer season average mode noise contour.
L <sub>eq, 16 hour day</sub> 51 dB contour population <sup>10</sup>	The population enclosed by the 92 day summer season average mode noise contour both with reference to a fixed point in time such as the opening year of the Project, and thereafter noting population change using the latest available updated dataset (currently CACI <sup>11</sup> ).
L <sub>eq, 8 hour night</sub> 45 dB contour population	The population enclosed by the 92 day summer season average mode noise contour both with reference to a fixed point in time such as the opening year of the Project, and thereafter noting population change using the latest available updated dataset (currently CACI)
L <sub>eq, 16 hour day</sub> 63 dB contour area <sup>12</sup>	The area enclosed by the 92 day summer season average mode noise contour.
L <sub>eq, 8 hour night</sub> 55 dB contour area	The area enclosed by the 92 day summer season average mode noise contours.
Annual L <sub>eq, 16 hour day</sub> 51 dB contour area <sup>13</sup>	The area enclosed by the annual average mode noise contour.
Annual L <sub>eq, 8 hour night</sub> 45 dB contour area	The area enclosed by the annual average mode noise contour.

5.1.9 **ES Appendix 14.9.5 Noise Envelope Background** (Doc Ref 5.3) discusses all of these noise metrics and others considered for the noise envelope, including their strengths and weaknesses.

5.1.10 Further reasons debated for including these as secondary noise metrics are captured in **ES Appendix 14.9.8 The Noise Envelope Group Output Report** (Doc Ref 5.3) and **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope** (Doc Ref 5.3).

5.1.11 Limits on noise will not be set in relation to the secondary noise metrics, which are to be reported on for information only and to help track and forecast noise performance and provide additional information on future noise exposure around the airport.

## 6 Noise Limits

### 6.1 Noise Limits

6.1.1 The PEIR provided for a noise envelope based on L<sub>eq</sub> day and night contours with two points - from when the NRP opened, and then when the airport reached 382,000 ATMs.

6.1.2 During consultation at the NEG, concern was expressed that the L<sub>eq</sub> contours controlled noise in the summer period only, and that there was no control on noise, or growth in noise, outside of this period. Gatwick Airport has never been busier outside of the summer period than within it. Moreover, the basis of the research supporting use of the summer L<sub>eq</sub> contours includes the operation at Heathrow, which is also busiest in the summer, but busy throughout the year. There is not a realistic prospect of Gatwick Airport being busier outside of the summer period than within it, or any evidence to support that Gatwick Airport becoming busier over the whole year would lead to higher levels of community annoyance. Accordingly, it is considered that the primary noise metrics to be employed in the noise envelope remain the most appropriate to limit noise from the airport.

6.1.3 Whilst this sets out why the use of metrics which relate to the 92 day summer season is appropriate for the purposes of the noise envelope, it is also relevant that Gatwick Airport with the NRP will be subject to an overall annual ATM limit of 386,000 movements (which represents the proposed maximum ATM throughput of the

Project), and that this will serve to ensure there is an overall limit to the amount of aircraft that may use Gatwick Airport in any given year, which inherently limits the overall amount of noise that may be made by aircraft using Gatwick Airport.

6.1.4 The noise envelope sets noise limits for an initial period after opening which is then stepped down. The PEIR had proposed that the step down would be triggered only when the airport met a given throughput of 382,000 ATMs (on the basis that this represented when the Project is assumed to be fully built out at 2038).

6.1.5 During consultation this raised concern that the noise limit step-down point, based on ATMs, which was expected to occur about 9 years after the NRP opened, might never be triggered if the airport never grew to a throughput of 382,000 ATMs. Notwithstanding that GAL expects airlines to continue to invest in new aircraft and hence noise levels to fall over time, we acknowledge this concern and are proposing that, 9 years after opening, the step down in the permitted contour area will occur where throughput has not reached 382,000 ATMs.

6.1.6 Finally, there was extensive discussion at the NEG regarding how the noise envelope should be monitored and reviewed, and how the reviews should be administrated. In August 2021, the Government wound down the Independent Commission on Civil Aviation Noise (ICCAN) and transferred most of the technical, research and policy advisory functions of ICCAN to the CAA. Accordingly, we are proposing that the CAA as the Independent Reviewer for the purposes of the noise envelope, and that 9 years after opening, reviews take place every five years to ensure the envelope remains relevant<sup>14</sup>.

6.1.7 In summary, as a result of the consultation process, the noise envelope proposed within the PEIR has been developed to provide for a guaranteed step-down for the noise envelope at a given point after opening and to provide a commitment for periodic monitoring and reviews to keep the envelope relevant. It is also proposed that the information used to administer the noise

<sup>9</sup> N65 and N60 metrics were favoured by community and local authority stakeholders, as discussed in Section 2 of **ES Appendix 14.9.5: Air Noise Envelope Background** (Doc Ref 5.3).

<sup>10</sup> Day and night metrics including populations were promoted by local authority stakeholders, as discussed in Section 2 of **ES Appendix 14.9.5: Air Noise Envelope Background** (Doc Ref 5.3).

<sup>11</sup> CACI Ltd provide updates to the latest Census (currently 2011) each year giving population by postcode. By reporting population within contours using the population distribution in a fixed year (eg 2029) the effect of population growth or change over time can be disaggregated.

<sup>12</sup> Metrics set at day and night SOAELs were promoted by local authority stakeholders, as discussed in Section 2 of **ES Appendix 14.9.5: Air Noise Envelope Background** (Doc Ref 5.3).

<sup>13</sup> Day and night Metrics quantifying noise exposure over 12 months were promoted by local authority stakeholders, as discussed in Section 2 of **ES Appendix 14.9.5: Air Noise Envelope Background** (Doc Ref 5.3).

<sup>14</sup> The Airports National Policy Statement (2018) anticipated that the noise envelope would take account of any guidance from ICCAN (§5.60)

envelope will be subject to independent scrutiny and validation by the CAA, as discussed in Section 7.

6.1.8 The Noise Envelope for the NRP is set out below:

**1<sup>st</sup> Noise Envelope Period: From commencement of dual runway operations to the end of the 1<sup>st</sup> Noise Envelope period**

By the end of the first year after opening of the NRP, the area enclosed by the 92 day summer season average mode noise contours for the Airport shall not exceed:

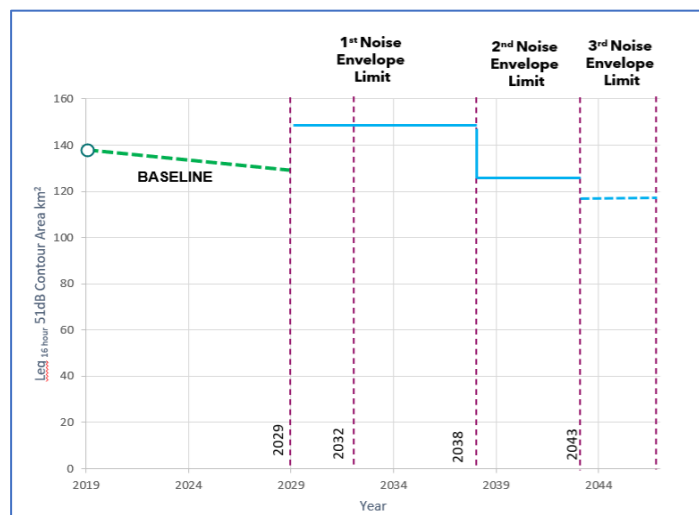
- Leq 16 hour day 51 dB 146.7 km<sup>2</sup>
- Leq 8 hour night 45 dB 157.4 km<sup>2</sup>

**2<sup>nd</sup> Noise Envelope Period: From the end of the 1<sup>st</sup> Noise Envelope Period for the period of 5 years**

6.1.9 Nine years after the opening of the NRP or by the end of the year when annual commercial ATMs reach 382,000 (whichever is the sooner), the area enclosed by the 92 day summer season average mode noise contours for the Airport shall not exceed:

- Leq 16 hour day 51 dB 125.7 km<sup>2</sup>
- Leq 8 hour night 45 dB 136.1 km<sup>2</sup>

6.1.10 The diagram below illustrates the daytime noise envelope limits for the 1<sup>st</sup> Noise Envelope Period, the following five years which represents the 2<sup>nd</sup> Noise Envelope Period, and an example of what the limit may be for the 3<sup>rd</sup> Noise Envelope Period (being the period of 5 years following the end of the 2<sup>nd</sup> Noise Envelope Period) following a review of the noise envelope limits, discussed further below.



**6.2 Provision for 5-year reviews**

6.2.1 Within not more than 12 months following (1) the end of the ninth year of the operation of the NRP; or (2) the end of the year when annual commercial ATMs reach 382,000 (whichever is the sooner) (being the end of the 1<sup>st</sup> Noise Envelope Period), GAL will review the limits set for the areas enclosed by the 92 day summer season average mode noise contours.

6.2.2 The review will be in accordance with the process set out in Section 8 and based on the most up to date aircraft traffic forecasts for the operation of the airport. It will determine the area enclosed by the 92-day summer season average mode noise contours for the five-year period beginning with the end of the 2<sup>nd</sup> Noise Envelope Period (i.e. for the 3<sup>rd</sup> Noise Envelope Period).

6.2.3 The outputs from the review of the area enclosed by the 92-day summer season average mode noise contours shall be submitted to the CAA for scrutiny and verification. Where verified the new summer season average mode noise contour limits shall be complied with from the relevant date for the duration of the applicable noise envelope period. This process shall be completed at five yearly intervals thereafter for the lifetime of the NRP.

6.2.4 The results of the review may identify that the noise envelope contour area needs to remain at the current position as at the time of the review, to reduce, or to increase.

**6.3 Changes in market profile**

6.3.1 The noise envelope should always remain relevant and should reflect evidence of the improvements in average fleet noise performance over time. The envelope should not function to prevent airlines serving changing markets. As noted above, the outcome of review for the 3<sup>rd</sup> Noise Envelope Period and subsequent noise envelope periods may require the noise envelope contour to change, which may include a reduction or an increase. (Subject to not exceeding the noise contour area required to be achieved during the 1<sup>st</sup> Noise Envelope Period). This is to ensure that the Airport can meet changing market needs in terms of routes served and aircraft types used.

**6.4 Extraordinary Reviews**

6.4.1 There are also three extraordinary circumstances in which GAL may seek the approval of the Secretary of State for a different

contour area or to amend when reviews are undertaken, and these are as detailed below.

**6.5 Airspace Change**

6.5.1 The CAA are in the process of bringing forward the Future Air Space Implementation South (FASI-South) Programme to modernise the use of airspace in the south of England. As a consequence of this, the departure and arrival routes and procedures for Gatwick Airport may be required to change, and this could have consequential impacts on the noise envelope. Whilst GAL feeds into this process, and one of its purposes is to reduce overall noise, it is a process which is led by the CAA and the Department for Transport and GAL will be bound in due course to comply with any changes which are required as part of the wider airspace change masterplan. Other airspace change proposals could also feasibly be brought forward by the CAA and the Department for Transport (or any successors to the functions of those) which could have similar effects. Any such Airspace Change proposals would be subject to their own impact assessment to determine whether they are acceptable, and their own decision-making process.

6.5.2 Given this is a matter which is beyond the control of GAL, and whilst a stated objective of FASI-South is to reduce noise where practical, where any such Airspace Change proposals are brought forward GAL would want the opportunity to consider whether such changes affect the basis of the noise envelope. In those circumstances, the changes may be reviewed by GAL and, in accordance with the process and procedures provided for in Section 8, a revised noise envelope may be set taking them into account following approval by the Secretary of State. In those circumstances the noise limits secured in the DCO would no longer apply, and the new noise contour limits approved which are the outputs of that review would then apply.

**6.6 The introduction of Low Carbon Emissions Aircraft**

6.6.1 In addition, it is acknowledged that there are competing environmental objectives and a key environmental focus for all sectors is to rapidly reduce carbon emissions so as to achieve Net Zero and assist with mitigating the impacts of climate change. It is anticipated that in the future aircraft which provide for significant carbon emissions savings may be brought into mass production, and airlines may want to or be required to incorporate such aircraft into their fleet to achieve carbon emissions reductions. We cannot discount that such aircraft may be noisier



than the aircraft they replace, particularly in the first generations whilst they evolve and their performance is optimised.

6.6.2 GAL does not wish for the DCO to preclude the use of such aircraft where they give rise to significant environmental benefits that may align with future government policy. Accordingly, provision is made to allow for an increase in the noise envelope limits where this is to accommodate aircraft which provide for carbon emissions savings. In the interest of ensuring transparency, any such proposals will be established following the process in section 8 and would also be required to be approved by the Secretary of State, who would consider the justification for this change and whether it strikes an acceptable balance, taking into account the competing environmental objectives, benefits and disbenefits and relevant legislative requirements for Net Zero.

## 6.7 Force Majeure

6.7.1 It is also recognised that force majeure circumstances may arise outside the control of GAL which have an effect of reducing or otherwise affecting operations at the airport and which have a knock-on effect on the rate of airline fleet transition. This is what was seen, for example, during the COVID-19 pandemic, where restrictions were placed by Government on air travel to reduce the rate of spread of disease, resulting in the grounding of aircraft and disruption to manufacturers' delivery schedules. The grounding and then delayed deliveries of the B737 MAX meant that a planned fleet replacement, which would reduce noise, was disrupted beyond airlines' control.

6.7.2 Where force majeure circumstances arise which have a significant impact on the operation of the airport, GAL may seek approval under the DCO to amend the points at which the review of the noise envelope is required, including providing justification and identifying when it is anticipated the next review will be undertaken. Again, in the interest of ensuing transparency any such request will be required to be approved by the Secretary of State.

## 7 Monitoring Compliance

7.1.1 In order to provide certainty on future noise levels and to evidence compliance with the applicable noise envelope limits, GAL will report compliance with the noise envelope limits annually and a forecast of noise levels 5 years ahead to confirm projected compliance with the known future noise envelope limits.

Such reports are to be known as "Annual Monitoring and Forecasting Reports", or "AMFR".

7.1.2 The CAA will act as the Independent Reviewer to scrutinise and verify the AMFR submitted by GAL in accordance with the process provided for in the DCO.

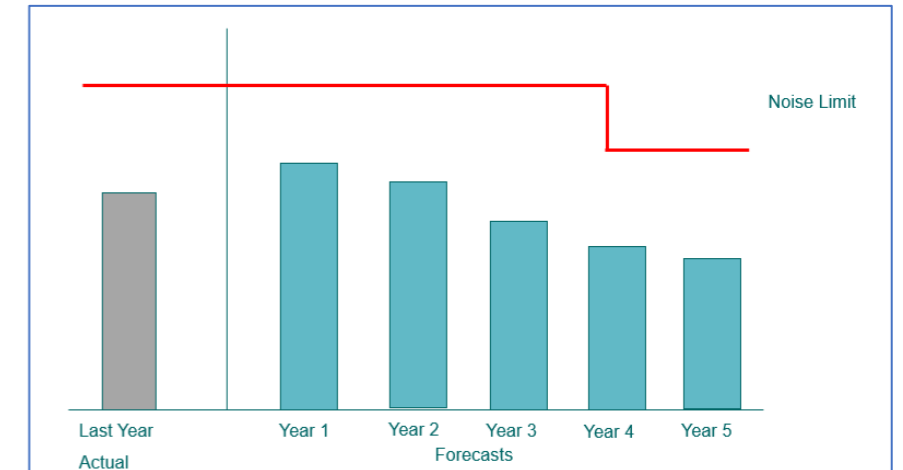
7.1.3 GAL must submit the AMFR to the CAA by not later than the first occurrence of 1<sup>st</sup> July after the date which is 12 months following the commencement of dual runway operations at the Airport, or by not later three months following receipt of Environmental Research and Consultancy Department (ERCD,CAA) noise modelling data of the actual noise levels for the previous full year of operation (whichever is the later) following the commencement of dual runway operations at the Airport.

7.1.4 GAL must submit the AMFR to the CAA for scrutiny and verification annually thereafter.

7.1.5 Within each AMFR, GAL will provide as a minimum the following information:

- The previous year's actual noise levels;
- Forecast noise levels for the next 5 years;
- Necessary supporting information; and
- Details of actions required to remain in compliance (if any).

7.1.6 Noise levels will be modelled and reported for all primary noise metrics to evidence both compliance in the previous 12 month period of operation and forecast compliance in the next 5 years, including predicted compliance with any future noise envelope limit that will come into effect within that 5 year period. The diagram below illustrates the process schematically.



7.1.7 Supporting information will include data from the secondary metrics, details of the noise modelling, any changes in operational practices and other details relevant to the noise forecast being provided.

7.1.8 The CAA will undertake a technical review to provide assurance that the report has been prepared properly in accordance with processes set out herein and is supported by competent analysis prepared by competent industry specialists in aviation forecasting and noise assessment.

7.1.9 On satisfying itself that an AMFR has been competently prepared and identifies compliance with the relevant extant noise envelope limits and any future noise envelope limit that will come into effect within the subsequent 5 years of operation, the CAA will confirm its satisfaction and approve the AMFR.

7.1.10 Where the CAA is not satisfied of those matters, the CAA shall inform GAL and detail its reasons why it is not satisfied, and GAL must then submit further information within 28 days (or such longer period as is agreed with the CAA (but in all cases not longer than 56 days), or otherwise appeal the decision to the Secretary of State in accordance with the terms of the DCO.

## 7.2 Action Plans

7.2.1 In the event that a noise envelope limit is shown to have been exceeded during the previous 12 months of operations from the airport and/or where compliance is forecast to not be achieved at any point within the subsequent five year period (including compliance with any known future noise envelope limits which will come into effect within that 5 year period) within the AMFR produced by GAL, GAL must also submit an action plan to reduce

- noise to the CAA at the same time as submitting the relevant AMFR, which must include as a minimum:
- An explanation of why noise levels were higher than previously forecast;
  - Action(s) to ensure any under-estimation error is not repeated, if appropriate;
  - Actions proposed to reduce aircraft noise in the next year(s) to achieve compliance, including capacity management measures if necessary; and
  - Revised forecasts for next 5 year period taking into account the impact of the proposed measures detailed in the action plan, to confirm compliance with the relevant extant and known future noise limits within that period.
- 7.2.2 In the event that a noise envelope limit is shown to have been exceeded during the previous 12 months of operations from the airport and/or where compliance is forecast to not be achieved at any point within the subsequent five year period (including compliance with any known future noise envelope limits which will come into effect within that 5 year period) within the AMFR which is approved by the CAA or the Secretary of State, GAL must produce and submit an action plan (which must include as a minimum the same information detailed above) within not more than 3 months of the approval of the relevant AMFR which identified the exceedance.
- 7.2.3 Any measures proposed to reduce noise within an action plan will have to comply with prevailing UK Law and the UK's international obligations (including respecting, for example, historic slot rights). They would also be in the context of the Airport's regulation by the DfT and the CAA and ensuring compliance with the same.
- 7.2.4 Any measures which impact on users of the airport will require appropriate consultation and stakeholder agreement, and it will be GAL's responsibility to manage this with its stakeholders to achieve the best use of the airport's resources whilst respecting the environmental limits.
- 7.2.5 A right of appeal to the Secretary of State will be retained by GAL in relation to any approval by the CAA or non- determination by the CAA within the stated timescales.
- 7.2.6 GAL must publish on a website (or a page on a website) hosted by them for that purpose each approved AMFR and action plan within not more than 45 days following the date on which those are approved.

- 7.3 Further Capacity Declaration Restrictions**
- 7.3.1 GAL shall not be permitted to declare any further capacity for additional air traffic movements from the airport where;
- two consecutive AMFR either when submitted to the CAA or when approved by the CAA or by the Secretary of State (as is relevant in the circumstances) identify that the same relevant noise envelope limit has been exceeded during the previous 24 months of the operation of the airport; or
  - an AMFR either when submitted by GAL or when approved by the CAA or by the Secretary of State (as is relevant in the circumstances) identifies that a noise envelope limit is forecast to be exceeded, until an AMFR has been approved by the CAA or by the Secretary of State (as is relevant in the circumstances) which confirms compliance with the noise envelope limits identified to have not been exceeded or which was forecast to not be complied with (as is relevant in the circumstances).
- 7.4 Additional check of input data**
- 7.4.1 Separately, the noise monitoring data used to verify the noise model, including the siting of the Noise and Track Keeping terminals and processing of data, will be reviewed by an independent expert on a periodic basis.
- 7.4.2 This review will be undertaken to evidence compliance with the minimum standards set for Category A airports in CAP 2019, CAA Policy on Minimum Standards for Noise Modelling, 2021.
- 7.4.3 The independent review will be carried out within not more than 6 months following the end of the period of 12 months beginning with the commencement of dual runway operations at the airport and at 5-year intervals thereafter.
- 7.4.4 The independent expert will be appointed by GAL, and their credentials to carry out the study must be approved by the Institute of Acoustics to ensure the quality of the study being undertaken.
- 7.4.5 GAL will submit the findings of the study undertaken by the independent expert to the CAA for information, and where identified to be necessary this will also include recommendations to improve the validity of the noise modelling in future years. The results of the review will be published by GAL on a website (including a page on a website) hosted by them for that purpose.

- 8 Future Reviews of the Noise Envelope to ensure it remains relevant**
- 8.1 Overview**
- 8.1.1 The noise envelope has been developed taking into account the noise impacts predicted in the Environmental Statement submitted with the DCO application, including the local situation and the impacts predicted in connection with the future operation of Gatwick Airport with the NRP.
- 8.1.2 Whilst the air traffic forecasts used in the ES for the initial years of operation are considered a reliable and robust basis for the noise envelope limits, projections for the longer term are inevitably less reliable. For this reason, the noise envelope limits are to be set for the first 14 years after the commencement of dual runway operations, to provide sufficient certainty of what will be achieved in the initial operating period, and every 5 years thereafter the limits will be subject to a review to ensure they remain relevant.
- 8.1.3 Reviews of the noise envelope limits will be prepared on behalf of GAL by a Specialist Aviation Forecaster, and will be based upon past performance, ATM and fleet transition forecasts, any changes to aircraft routings, relevant changes to government policy, and noise modelling forecasts.
- 8.1.4 In addition, at any point following the commencement of dual runway operations the undertaker may submit to the Secretary of State an extraordinary review of the noise envelope limits to take into account changes required as a consequence of approved airspace change proposals or the incorporation (including the proposed incorporation) of aircraft which provide for significant carbon emissions savings into the airline fleets operating from the airport which aligns with government policy in relation to carbon emissions reduction and climate change.
- 8.1.5 The following explains the process by which GAL will undertake the future reviews.
- 8.2 Noise envelope limits review process**
- 8.2.1 GAL will provide to the Specialist Aviation Forecasters at least 12 months' information relating to markets served and airlines using the airport, as well as assumptions relating to year-round utilisation levels.

<p>8.2.2 The approach to modelling Gatwick’s future fleet starts with establishing the baseline position of current throughput, and then assessing forecast scenarios for the following 10-year period in order to develop a robust 5-year forecast for the next relevant noise envelope period. As part of the process, an allowance is factored in for ‘other’ ATMs which reflect non-commercial movements, to ensure all relevant aircraft noise sources are captured. A share of previous years’ activity for non-commercial movements (e.g., positioning flights, General Aviation and training) is to be assumed for this purpose.</p>	<p>8.2.7 For carriers where Gatwick is a smaller share of their operational fleet and operated by a specific aircraft type, the transition between one generation and the next for a specific fleet type may occur over a shorter timescale compared to their total fleet.</p>	<p>transition is delayed by 4-5 years from the central case, to represent a robust sensitivity and account for circumstances that may arise over the relevant 5-year period that are beyond the control of the airport.</p>
<p>8.2.3 Data from Gatwick’s historical aircraft operations will be used to categorise activity by aircraft type and generation for each major airline or airline group<sup>15</sup>. Assumptions from a combination of news announcements, individual airline investor reports as well as industry order books will be used to inform the rate at which new aircraft are assumed to enter an airline’s fleet. These outputs will then be tailored to Gatwick, based on market intelligence and informed judgement.</p>	<p>8.2.8 For carriers where no clear orders for new aircraft exist, or limited guidance is provided around future fleet, it is necessary to consider aspects including:</p> <ul style="list-style-type: none"> <li>▪ <b>Age of current fleet:</b> How old are their current aircraft? What is their history?</li> <li>▪ <b>Fleet ownership:</b> Leased or owned?</li> <li>▪ <b>Carrier strategy:</b> Do they historically run aircraft to end of effective life? What is their business model?</li> <li>▪ <b>New fleet:</b> What is the most likely appropriate replacement/growth aircraft for their network / Gatwick operation?</li> <li>▪ <b>Availability:</b> When will fleet become available?</li> </ul>	<p><b>8.4 Submission of a proposal for a review to the CAA</b></p> <p>8.4.1 Prior to the submission of a proposal for revised noise envelope contour limits (including a report detailing the process followed and findings of the review) to the CAA for verification, GAL will provide a draft to the CAA who shall have a period of 42 days within which to provide any comments on the draft. GAL will subsequently have regard to comments received and submit a final noise envelope review proposal for approval. The CAA will scrutinise and, as appropriate, approve the noise envelope review proposal in accordance with the decision-making process contained in the DCO.</p>
<p>8.2.4 The Specialist Aviation Forecaster will then make assumptions relating to future fleet types as well as utilisation patterns through the year (e.g. seasonality) and day (e.g. night vs day).</p>	<p><b>8.3 Providing for uncertainty</b></p> <p>8.3.1 The above fleet modelling process is intended to represent a best estimate of the future fleet transition trends at Gatwick; however, fleet transition is not within the control of the airport and depends on multiple factors, including (without limitation):</p> <ul style="list-style-type: none"> <li>▪ a slow down in aircraft deliveries from Boeing/Airbus (as in the case of B737MAX);</li> <li>▪ the need to allow for the noise characteristics “in-operation” of new aircraft to be verified;</li> <li>▪ Gatwick’s carriers delaying fleet replacement or sourcing aircraft from the secondary (used) market;</li> <li>▪ a change in Gatwick’s user base in favour of airlines with an older fleet or slightly noisier fleet in service;</li> <li>▪ a buy-out of Gatwick slots with the acquiring airline operating different aircraft;</li> </ul>	<p>8.4.2 In the event that the review results in a proposal for a reduction of the noise limits, this may require a consultation under UK Regulation 598/2014 to have been undertaken before those noise limits are effective. Any necessary consultation would take place prior to any new noise limits being secured by the DCO to ensure the lawful imposition of those, Under the Environmental Noise (England) Regulations 2006 airports are required to provide Strategic Noise Mapping and Noise Action Plans every five years, in 2024, 2029, 2034, 2039, 2044, 2049 etc., and whenever a major development occurs affecting the existing noise situation<sup>16</sup>. The Noise Action Plan process includes for consultation on the draft Noise Action Plan ahead of submission to DEFRA for approval. The review of the noise envelope limits will be reported in the Noise Action Plans required under the Environmental Noise Regulations.</p>
<p>8.2.5 Given that Gatwick only accounts for a proportion of any carrier’s operations, assumptions also need to be made for which future fleet types will utilise Gatwick and when. For carriers such as easyJet, Gatwick accounts for a significant share of their total network and the fleet at Gatwick has historically been comparable to their network average. Taking their current fleet and order book (including assumptions regarding any fleet ‘on option’) as well as further orders anticipated in the subsequent 10-year period will enable a modelled view on their aircraft mix at Gatwick in future years.</p>	<p>8.3.2 Assumptions for the airline groups can also be modified to reflect more pessimistic or optimistic assumptions based on knowledge of their operations and markets they serve.</p>	
<p>8.2.6 Consideration of fleet transition, the rate at which it occurs and the aircraft types assumed, will be an important part of the process. For each of the main airline groups a corresponding fleet transition profile will be required down to the level of individual aircraft type (e.g. A320neo). This requires a review of the expected performance in particular years as well as year on year trends for the main airline groups.</p>	<p>8.3.3 The noise envelope contour areas will be set based on a slower fleet transition forecast. This involves predicted movements being kept the same as in a central case forecast, but with assumptions being applied which mean that the rate of anticipated fleet</p>	

<sup>15</sup> Given Gatwick’s broad user base across domestic, short haul & long haul markets as well as full service, LCCs, ULCCs and regional carriers, a major airline/ airline

group led approach has been developed and will probably continue to be used. It is noted that this approach may be less suited to other airports.

<sup>16</sup> Regulation 19(4)(a) of the Environmental Noise (England) Regulations 2006.

