

Natural England
Air Quality services for Lydd
Airport expansion proposals

Technical (Air Quality) Rebuttal

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ATKINS



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1. Technical Rebuttal (Air Quality)



1.1. Context

Appendix 10 (NE3/B) of Jo Dear's proof of evidence provides the findings of the Atkins review of the air quality work contained within the Environmental Statement and its supplementary statements. A Statement of Common Ground on Air Quality Matters in Relation to Ecosystems (SOCG) has since been agreed.

The following are technical clarifications of the information within Dr Tuckett-Jones' proof (LAA/8/A). Points are made using the structure and paragraphs of Dr Tuckett-Jones' proof.

1.2. Introduction

In paragraph 1.4.5 Dr Tuckett-Jones conclusion of "no significant adverse effects" is based on a definition of 'vegetated shingle' (used here to encompass areas of vegetated shingle and perennial vegetation of stony banks) which does not include all those areas recognised by Natural England as sensitive and an important part of the designated feature. In particular, Dr Tuckett-Jones proof does not appear to include the area of A2S calcifuges grassland adjacent to the junction between the airport access road and Romney Road. This is difficult to check, as no information is provided in the proof on what areas within the air quality study area are defined as vegetated shingle. The December 2009 submission (CD1.45) included figures showing the area of shingle, but these did not accord with the vegetated shingle areas provided as GIS data by Natural England.

1.3. Regulations

In 2.5.4 bullets and 2.5.5, Dr Tuckett-Jones defines assessment locations, referring to the Air Quality Standards Regulations 2010 (CD.5.17), and argues that areas in the immediate vicinity of the airport could be discounted on this basis. However, the assessment location criteria referred to relate to the siting of sampling points and not to the definition of relevant locations for scheme assessment.

Even if the location criteria were taken as read, in any event Schedule 1 Part 2 paragraph 8 also states that "*A sampling point may be sited at a lesser distance or to be representative of air quality in a less extended area, taking account of geographical conditions or opportunities to protect particularly vulnerable areas.*" A SSSI and a SAC are defined as 'particularly vulnerable areas' which overrides any issue of proximity.

1.4. Methodology

Paragraph 3.3.1 implies that the approach to the modelling of airport emissions only applies to the assessment of the terminal application (500,000 passengers), when the approach is relevant to, and was applied to, the runway extension application (300,000 passengers) as well.

In 3.3.4 Dr Tuckett-Jones introduces the definition of a "Lower growth" scenario, also referred elsewhere in the proof as a "More realistic" and "revised scenario". The proof is unclear as to

whether these scenarios have been formally assessed or modelled or whether their effect is presented by inference. There is inadequate information provided to give clarity or to allow replication of the results (a requirement of an environmental statement). Reference to Figure 15 to 18 suggests that Dr Tuckett-Jones has estimated the critical level and the critical load for the SAC and the SSSI using the December 2009 maxima location. However which maxima locations are used are not described or justified, and so comparisons between the core case and the lower growth scenario may not be under constant conditions.

In 3.4.4 Dr Tuckett-Jones defines sensitive habitats for air quality assessment. However the figures in her appendices no longer show the area of vegetated shingle and perennial vegetation of stony banks, and there is no reference in the proof text (or cross-reference to previous correspondence) on how these have been defined. This makes misunderstandings of the maxima locations shown in section 5 and the appendices quite likely, and does not allow direct comparison between the evidence on maxima provided by Dr Tuckett-Jones and in Appendix 10 of Jo Dear's proof of evidence.

1.5. Baseline

In 4.2.9 Dr Tuckett-Jones has estimated the additional concentrations above background from the existing airport by removing from the background concentration (derived as agreed using local diffusion tube data) the car park monitoring site DT12. This gives an additional airport contribution of around $2\mu\text{g}/\text{m}^3$. Dr Tuckett-Jones offers this as an illustration of model performance by drawing comparison with the modelled airport contribution in the base year. However comparable information on modelled airport contribution is not provided (here or in Section 5). Comparing 4.2.9 with Table 3 in Appendix A of Dr Tuckett-Jones proof shows that background concentrations in the future do not have the modelled airport contribution removed, as outlined in the agreed SOCG. As such, resultant total concentrations will be worst-case and will be different to those included in Appendix 10 of Jo Dear's proof, which follows the agreed SOCG method.

4.2.10 refers to Figure 2 as illustrating the downward trend used in forecasting background concentrations forward. In practice the best fit line used to mathematically determine future year concentrations (as agreed in the SOCG) was defined in a different manner, and did not make use of the additional period of data in 2010 as shown here (as this data from later in 2010 is unratified¹).

¹ Ratification (Monitoring) involves a critical review of all information relating to a data set, in order to amend or reject the data. When the data have been ratified they represent the final data to be used. The process of data *ratification* involves a more thorough checking of the data, for example data rescaling to allow for drift in the calibration standards, or data adjustments following site audits which have identified problems that could not have been identified remotely (for example, internal sampling leaks). Authorities must always use validated data, and are advised to use ratified data from the national networks, wherever possible. If provisional data must be used, it should be noted that the process of ratification will be unlikely to affect the measured annual mean, but may change the number of shorter-term (for example, hourly or 15-minute) means. Taken from Defra Technical Guidance LAQM.TG(09)

1.6. Operational Impacts

Throughout Section 5.1 Dr Tuckett-Jones provides maxima results (critical levels and critical loads) based on a definition of 'vegetated shingle' which does not include all those areas recognised by Natural England as sensitive. In particular, when defining the maxima Dr Tuckett-Jones does not appear to include the area of A2S adjacent to the junction between the airport access road and Romney Road, and so the maxima for the SSSI are underestimates. The locations of the maxima are not reported (in the text or graphically in the figures). For example, Figure 7 in Dr Tuckett-Jones appendices indicates a maximum nitrogen deposition in the SAC of less than 10kgN/ha/yr. Using Appendix 10 of Jo Dear's proof the equivalent value would be 10.7kgN/ha/yr (using Dr Tuckett-Jones position on a minimum specified MO of 10m).

In 5.1.18 Dr Tuckett-Jones asserts that levels of Nitrogen deposition are indistinguishable up to 2023 when comparing the situation with or without the airport development. Figure 16 in the appendices of Dr Tuckett-Jones proof clearly shows that the effect of the airport can be distinguished from 2017 onward.

In 5.4.2 c to g, Dr Tuckett-Jones outlines results under the realistic (lower growth) scenario. The proof is unclear as to whether these scenarios have been formally assessed or modelled or whether their effect is presented by inference. There is inadequate information provided to give clarity or to allow replication of the results (a requirement of an environmental statement). Reference to Figure 15 to 18 suggests that Dr Tuckett-Jones has estimated the critical level and the critical load for the SAC and the SSSI using the December 2009 maxima location. However which maxima locations are used are not described or justified.

In 5.4.2 g Dr Tuckett-Jones outlines the area affected with the airport development. Without a definition of the area of the sensitive sites (vegetated shingle) the validity of the areas affected is unclear.

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