

Air Quality Modelling of SERAS Options Technical report

**Produced by BAA Plc with
Technical input by AEA
Technology**

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Introduction

The Department for Transport (DfT) in its Consultation paper 'Future Development of Air Transport in the United Kingdom: South East' has put forward a number of options for increasing airport capacity in the South East of England, including the options of:

- a third short runway at London Heathrow airport (LHR)
- single close parallel runway at London Gatwick Airport (LGW)
- single wide spaced parallel runway at LGW
- single wide spaced parallel and northern runway at LGW

The SERAS (South East and East of England Regional Air Services) work that underpinned the Consultation paper was carried out for the years 2015 and 2030, and included an air quality assessment of these options, focusing on the pollutants NO₂ and PM₁₀.

Assuming no special measures are taken by the aviation industry, local government or nationally to reduce emissions the DfT's assessment predicted exceedences of the EU Daughter Directive NO₂ limit value for each of these options.

BAA have commissioned independent research to review the government's air quality assessments described in our submission "responsible growth" and in more detail within this report.

Objectives

It is recognised in the Consultation documents that the SERAS air quality methodology was intended primarily for the comparison of options, may tend to overestimate absolute pollutant concentrations and is subject to significant uncertainty. Recognising this uncertainty in the modelling as well as the need to demonstrate how air quality impacts of the proposed runway options can best be mitigated BAA have commissioned detailed air quality modelling work that aims to:

1. Improve the absolute accuracy and reduce the level of uncertainty of the Gatwick and Heathrow SERAS model by generating improved baseline models indicative of predicted air quality impacts under SERAS core assumptions.
2. Provide an assessment of the mitigation potential of options to improve air quality based on an improved baseline model.
3. Identify the scope of future work to address any residual uncertainties in the modelling and feasibility of potential mitigation options.

In our submission to the DfT "Responsible Growth" we describe our approach to meeting these objectives, the results and our conclusions. This document sets out the technical work that underpins our submission and is offered to stakeholders for comment and information. This report is also being distributed to a select panel of independent experts for peer review.

Summary of BAA's Technical Work

BAA's response to the Government consultation "The Future Development of Air Transport in the United Kingdom: South East (SERAS) was published on the 12th May 2003. This report describes the results from our review of air quality assessments of SERAS options at Heathrow and Gatwick.

The technical work supporting our submission is included here and detailed below in Table 1.

Table 1: Technical Air quality reports

Author	Title	Key objective	Appendix
AEA Technology	BAA SERAS Response: LHR Air Quality Study	To improve the absolute predictive accuracy of the Heathrow E4 air quality assessment	See Appendix I
AEA Technology	BAA SERAS Response: LHR AQ Mitigation Scenarios	To provide indicative assessment of mitigation potential of options to improve air quality associated with the Heathrow E4 options	See Appendix II
AEA Technology	BAA SERAS Response: LGW Air Quality Study	To improve the absolute predictive accuracy of the single close parallel, wide spaced parallel and northern runway option assessments for Gatwick	See Appendix III