



Bristol Airport Limited

12 mppa Planning Appeal

Rebuttal Proof of Evidence —
Air Quality, Martin Peirce



Report for

Bristol Airport Limited

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Glossary of abbreviations

Table 1.1 Glossary of abbreviations

Abbreviation	Explanation
APU	Auxiliary Power Unit
AQAL	Air quality assessment level
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Standard
ASAS	Airport Surface Access Strategy
BAL	Bristol Airport Limited
COMEAP	Committee on the Medical Effects of Air Pollution
CS	North Somerset Core Strategy 2017
CURED	Calculator Using Realistic Emissions for Diesels
Defra	Department of the Environment, Food and Rural Affairs
DfT	Department for Transport
EFT	Emission Factors Toolkit
EPUK	Environmental Protection UK
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESA	Environmental Statement Addendum
GSE	Ground Support Equipment
HIA	Health Impact Assessment
IAQM	Institute of Air Quality Management
IES	Institution of Environmental Sciences
LAQM	Local Air Quality Management
mppa	Million passengers per annum
NPPF	National Planning Policy Framework
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen: nitrous oxide (NO) + NO ₂ collectively

Abbreviation	Explanation
NSC	North Somerset Council
PCAA	Parish Councils Airport Association
PHE	Public Health England
PM	Particulate matter, PM ₁₀ or PM _{2.5}
PM ₁₀	Particulate matter smaller than 10 µm in diameter
PM _{2.5}	Particulate matter smaller than 2.5 µm in diameter
PSDH	Project for the Sustainable Development of Heathrow
SAC	Special Area of Conservation
SAF	Sustainable Aviation Fuel
SOCG	Statement of Common Ground
UFP	Ultrafine particulate
WHO	World Health Organization
µg m ⁻³	Microgram per cubic metre

1. Introduction

1.1.1 My name is Martin Peirce. This rebuttal has been prepared to respond to points made by Dr Broomfield (North Somerset Council, NSC) in his Evidence presented on air quality.

1.1.2 My qualifications and experience are as detailed in my main proof of evidence.

2. Evidence of Dr Mark Broomfield

2.1 Main issues raised

2.1.1 I would like to respond to three of the major themes in Dr Broomfield's evidence:

- The policy test for determining the acceptability of the air quality impacts;
- Uncertainty around the aircraft fleet forecast, especially with regard to Jet2; and
- Mitigation.

2.1.2 I will address each of these themes in turn.

2.2 The policy test for determining the acceptability of the air quality impacts

2.2.1 Dr Broomfield presents a long overview of relevant policy on air quality, in which he identifies correctly the key texts of relevance. However, I disagree with some of his interpretations of policy, and with his overall conclusion about the appropriate policy test to be applied.

General air quality policy

2.2.2 Dr Broomfield summarises general policy on air quality, and correctly notes that there is a general expectation that air quality should be progressively improved, even where it meets the existing legal limits or Air Quality Strategy objectives. He says, for example (paragraph 35):

2.2.3 *"Compliance with those limits is certainly an important factor to be taken into account in assessing the air quality impacts of a development, but this does not provide a complete assessment of the potential impacts of the proposed development in the context of wider policy and emerging understanding of the effects of air pollution on health."*

2.2.4 This has long been recognised. As I stated in my main proof, the assessments in the Environmental Statement (ES) and the Environmental Statement Addendum (ESA) take account of the importance of managing air quality even where it meets air quality objectives (AQOs) or other established assessment levels. They do this by following the guidance from the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK), which provides that adverse impacts to air quality may be considered 'slight', 'moderate' or even 'substantial', even where assessment levels are met. Within this framework, however, I am able to conclude in the ESA that the air quality impacts of the Appeal Proposal are at worst 'slight' and affect a small number of receptors, and therefore are not significant in EIA terms.

2.2.5 In paragraph 37, Dr Broomfield states:

2.2.6 *"From this, I conclude that there is a clear policy commitment and direction of travel towards a tightening of the air quality objective for PM_{2.5}."*

2.2.7 I agree that there is a direction of travel towards tightening the standard for PM_{2.5} from the current limit of 25 µg m⁻³ towards the World Health Organization (WHO) guideline of 10 µg m⁻³. However, I do not accept that there is yet *"a clear policy commitment"*, in view of the uncertainty about the deliverability of such a target and the timescales on which it might be reached. I discuss this further in my main proof (paragraphs 5.2.40–5.2.42).

2.2.8 Later in paragraph 37, Dr Broomfield observes that in the ES, *"no attempt was made to assess the impact of the proposed development against [the WHO PM_{2.5}] guideline."* I would point out that the ES was prepared in 2018, before the Clean Air Strategy introduced a target around the WHO guideline. Such an assessment was carried out, however, shortly after the Clean Air Strategy was published, as part of the Regulation 25 information (CD3.4.10). This showed that, based on the modelling for the ES, the Appeal Proposal was consistent with the target on PM_{2.5} introduced in the Clean Air Strategy.

Aviation policy

2.2.9 In paragraph 45 and 46, Dr Broomfield draws attention to the government's 'Next steps towards an aviation strategy' (CD6.3). This says (at paragraph 6.25) that the aviation sector should play *"an appropriate role in managing the emissions that it can control."* I would add that it also says that *"Surface transport continues to be the main contributor to local air quality emissions around airports which will be tackled through approaches such as the air quality plan for nitrogen dioxide published last year."* This is a recognition that Government itself has the major role to play in managing air

quality around airports, through national measures acting on the wider set of emissions sources, especially road traffic.

2.2.10 In paragraph 47, Dr Broomfield refers to the government's 'Making best use of existing runways' policy statement (CD6.4) and quotes paragraph 1.22:

2.2.11 *"1.22 The government recognises the impact on communities living near airports and understands their concerns over local environmental issues, particularly noise, air quality and surface access. As airports look to make the best use of their existing runways, it is important that communities surrounding those airports share in the economic benefits of this, and that adverse impacts such as noise are mitigated where possible."*

2.2.12 I see this paragraph as reflecting the trade-off between environmental issues and economic benefits as part of the planning balance. As such it is evidence that single issues such as air quality should not be seen in isolation, but evaluated as part of the whole. This is the approach taken by Mr Pyper in his evidence in which he weighs the small adverse health effects of air quality impacts against other relevant factors, including beneficial economic impacts.

2.2.13 In paragraph 49, Dr Broomfield quotes from the Airports National Policy Statement (CD6.9) as follows:

"5.42 In order to grant development consent, the Secretary of State will need to be satisfied that, with mitigation, the scheme would be compliant with legal obligations that provide for the protection of human health and the environment."

"5.43 Air quality considerations are likely to be particularly relevant where the proposed scheme:

- *is within or adjacent to Air Quality Management Areas, roads identified as being above limit values, or nature conservation sites (including Natura 2000 sites and Sites of Special Scientific Interest);*
- *would have effects sufficient to bring about the need for new Air Quality Management Areas or change the size of an existing Air Quality Management Area, or bring about changes to exceedances of the limit values, or have the potential to have an impact on nature conservation sites; and*
- *after taking into account mitigation, would lead to a significant air quality impact in relation to Environmental Impact Assessment and / or to a deterioration in air quality in a zone or agglomeration."*

2.2.14 The ESA has shown that the Appeal Proposal would be “compliant with legal obligations that provide for the protection of human health and the environment” and does not meet any of the criteria under which “air quality considerations are likely to be particularly relevant” given in paragraph 5.43 of the Airports National Policy Statement. This is important in setting part of the policy framework for considering this issue in relation to airport infrastructure.

Policy on air quality impacts of developments

2.2.15 Moving to more specific policy on the management of development proposals, Dr Broomfield says in his discussion of the National Planning Policy Framework (NPPF) (paragraph 58):

“Emissions to air associated with airports should thus be expected to reduce over time, and not increase.”

and goes on to conclude (paragraph 62) that:

“It is clear from the national policy context that the test for whether a development can be viewed as delivering improvements in air quality is to compare:

a) The future situation if the proposed development goes ahead

b) The future situation if the proposed development does not go ahead

63. Air quality is forecast to generally improve over the coming 10 to 20 years. However, a new development cannot identify this general improvement as delivering conformance with the policy requirement to deliver improvements in air quality. The development itself must deliver this improvement.”

2.2.16 These conclusions are not supported by the NPPF. The NPPF (paragraph 170) says that developments should not result in “unacceptable” levels of air pollution, and (paragraph 181) that decisions “should sustain and contribute towards compliance with relevant limit values or national objectives”. As shown in the ES and ESA, and as accepted by the Officer’s Report into the ES, the Appeal Proposal meets these tests. The NPPF states (paragraph 170) that “Development should, wherever possible, help to improve local environmental conditions such as air and water quality” (emphasis added). I do not believe that this wording is intended to provide carte blanche to polluters, but to acknowledge that there are trade-offs between policy objectives as part of the planning balance. As such, it should be interpreted as acknowledging that a development may worsen air quality (but not to an “unacceptable” degree) when there are other policies that support the development, especially when these are more specific to the development in question. That is

clearly the case for the Appeal Proposal, which will result in small adverse impacts on air quality, but is supported by wider policy and has other beneficial impacts.

2.2.17 Local policy is similar. Policy CS3 of the North Somerset Core Strategy 2017 (CD5.6) again says that adverse impacts from developments must be at an “acceptable” level. This is a clear acceptance that some developments may have adverse air quality impacts, but without being ‘unacceptable’. Policy CS26 requires a Health Impact Assessment (HIA); the purpose of such an assessment is to look at health impacts in their totality, allowing trade-offs to be taken into account if appropriate. Further evidence on the HIA for the Appeal Proposal is given by Mr Pyper.

2.2.18 I therefore disagree with Dr Broomfield’s conclusion (paragraph 103) that:

“To assess whether the proposed development would give rise to an improvement in air quality, the correct test is to compare the future situation if the proposed development goes ahead with the future situation if the proposed development does not go ahead. Applying this test, I conclude that the proposed development would give rise to increases in air pollution.”

2.2.19 All relevant policy recognises that developments may result in an increase in air quality impacts, but that these should be kept at an “acceptable” level. In my view, as well as that of NSC’s officers, the Appeal Proposal meets that test.

2.2.20 At paragraph 87, Dr Broomfield states that *“it is not sufficient to conclude that because air quality standards or objectives are met with the proposed development, that there would be no adverse health impact arising from the development.”* We have not made that claim. Rather, the ESA (CD2.20.1) states (paragraph 9.5.13):

“The conclusion reflects the UK Government view that compliance with UK Air Quality Objectives demonstrates an acceptable level of health protection and that these air quality protection measures are produced in the knowledge that particular groups within a population will have particular health vulnerabilities. The minor adverse (rather than negligible) score for vulnerable groups represents a conservative assessment on the basis of scientific uncertainty (and emerging evidence) about non-threshold health effects of NO₂ and PM_{2.5}. This is a public health acknowledgement of the incremental contribution to air pollution that the Proposed Development would make, but also recognition that, at the project level, this should not be considered a significant effect on population health.”

2.3 Uncertainty around the aircraft fleet forecast

2.3.1 Any assessment of air quality impacts from future developments relies on forecasting and modelling, and so is inevitably uncertain to a degree. A key element of managing this uncertainty is

to ensure assumptions are conservative or worst-case, within the reasonable bounds of such uncertainty; this means that modelled impacts are unlikely to be underestimated.

- 2.3.2 Dr Broomfield suggests that the emissions of particulate matter calculated using an alternative fleet forecast with Jet2 aircraft may be 16% higher than presented in the ESA. Mr Brass, in his rebuttal evidence, has explained however why Mr Folley's forecast 2030 fleet mix, upon which Dr Broomfield relies in his own proof, is untenable. In any event, my main proof of evidence already reviews a hypothetical scenario in which aircraft emissions are 20% higher than assumed in the ESA (paragraph 5.2.58 et seq.). This concludes that the overall impacts are unlikely to be substantially changed and so the conclusions of the assessment would not be materially affected by this level of uncertainty in the aircraft fleet forecast.

2.4 Mitigation

- 2.4.1 In Section 6 of his proof, Dr Broomfield discusses mitigation measures which BAL is proposing to implement, and suggests further measures which might be valuable.
- 2.4.2 As Dr Broomfield has recognised, much of the air quality impact from Bristol Airport (like other airports) is from surface access. Accordingly, this has been a major focus of BAL's mitigation efforts, including the development of the Airport Surface Access Strategy, the staff travel plan, and the junction improvement works to reduce queuing traffic. Evidence on these is being given by Mr Witchalls.
- 2.4.3 In addition, a draft Carbon and Climate Change Action Plan (CCCAP) has been prepared and submitted to the inquiry. Many of the measures within the CCCAP will also have air quality benefits. Further evidence on this is being given by Mr Ösund-Ireland.
- 2.4.4 In Section 6.3, Dr Broomfield suggests a range of additional mitigation measures to reduce the air quality impacts of Bristol Airport's operation. BAL has committed, through a proposed Section 106 agreement, to develop an Air Quality Action Plan (AQAP) within six months of permission for the Appeal Proposal being given. The AQAP will be a live document, which will be reviewed regularly to ensure that it continues to achieve the objectives set. I would expect that the process for developing the initial AQAP will include considering the range of possible mitigation measures, including those suggested by Dr Broomfield, to determine their likely costs and benefits, including co-benefits and trade-offs with other factors such as noise and carbon. This will allow BAL to implement measures which are well-targeted, cost-effective and proportionate to the small air quality impacts that are predicted from the Appeal Proposal.

3. Conclusion

- 3.1.1 I have reviewed the matters raised by Dr Broomfield and consider that none of these affect the outcome of my assessment of air quality impacts.