Aviation Environment Federation Consultation Response to the Airports Commission's Air Quality Assessment

May 2015

About the Aviation Environment Federation

The Aviation Environment Federation (AEF) is the principal UK NGO concerned exclusively with the environmental impacts of aviation. Supported by individuals and community groups affected by the UK's airports and airfields or concerned about aviation and climate change, we promote a sustainable future for aviation which fully recognises and takes account of all its environmental and social impacts.

Summary

Our response to the Airports Commission[1]'s consultation 'Increasing the UK's long-term aviation capacity' set out our views on the challenges that the short-listed options pose for achieving and maintaining legal limits for air quality[2]. Although the timing is late, we welcome the additional information published in this consultation and the opportunities it provides to review and reinforce our earlier comments and conclusions on this issue. However, we maintain our position that the work presented in this consultation should have been completed in time for the original consultation. We strongly believe its absence will have influenced respondents' answers to the overall consultation.

We appreciate that modelling air quality is a complicated and technical issue and therefore requires an in-depth level of analysis. However, air quality is a significant public health issue and we believe that the Commission should have presented its findings and assumptions in a clearer and more transparent manner so as to be understood by policy makers and the public as well as those with technical expertise.

It is important to recognise that since the original consultation on the short-listed options, air pollution has become more prominent in the national policy context. Our view is that the recent Supreme Court ruling on air quality will have profound implications for the context in which all future major developments will be viewed[3]. The Supreme Court ruled that that the UK Government must draw up a new action plan by the end of 2015 to tackle air pollution and ensure that the period of failure to comply with the EU limit values for air quality is 'as short as possible'[4].

The level of ambition of the new plan will affect whether ambient air quality can be reduced sufficiently below the EU legal limit to create the headroom required to allow for a new runway at Heathrow or Gatwick. It also means that breaches of the air pollution limit that are currently anticipated, such as at Marylebone Road, may not be tolerated. Any increase in pollution as a result of the building or operation of a new runway may delay compliance with the legislation. We therefore consider that any judgement on the air quality impact of airport expansion should be

[1] Referred to as Commission throughout this consultation response
[2] February 2015 available from http://www.aef.org.uk/uploads/AEF-response-to-AC-final-consultation.pdf
[3] Press summary of the ruling is available here: https://www.supremecourt.uk/decided-cases/docs/UKSC_2012_0179_PressSummary.pdf
[4] Ibid

reviewed once the UK Government introduces a new action plan for achieving legal limits as soon as possible.

On the basis of the current modelling, however, our assessment is that the three expansion options all carry very likely risks of having significantly negative impacts on air quality, whether considering the National Emissions Ceiling Directive, compliance with EU legal limits, or Critical Load for ecosystems. We draw particular attention to the below findings:

- Unmitigated Heathrow expansion would delay compliance in the London area for health based EU limit values of nitrogen dioxide (NO_2), according to the Defra PCM model. Worsening air pollution above limit values is inconsistent with EU Directive 2008/50/EC which requires the danger to public health to be remedied 'as soon as possible'[5].
- The assessment concludes that Gatwick expansion would not breach legal limits in relation to air quality. However, using the indicators outlined in the original air quality report[6] (as part of the overall consultation) the modelled air quality levels around Gatwick from both the Defra PCM model and the local dispersal model would be rated as having a 'high' risk of exceeding the legal limit (having a maximum annual NO_2 average of 35-40 μm^2).

It is our conclusion that on the basis of the modelling results both Heathrow options should be ruled out. We consider that there is good reason to also rule out expansion at Gatwick Airport given it is inconsistent with sustainable development. We note in this context the requirement under the Directive 2008/50/EC that where air quality is already good, Member States should "*endeavour to preserve the best ambient air quality compatible with sustainable development*"[7]. This reflects the fact that air pollution is harmful even at levels below the legal limits.

Finally, we are disappointed that there is limited consideration of the potential effectiveness of certain mitigation measures (in addition to those assumed in the modelling) in reducing air pollution to within limit values, despite it being outlined as a priority in the original assessment.

Assessment of the air quality impacts should have been carried out for dates beyond 2030 to assess the possible air quality impacts of the scheme when fully utilised.

Answers in response to Airports Commission consultation questions

Q1: What conclusions, if any, do you draw in respect of the three short-listed options?

1.1 The limit values for nitrogen dioxide (NO_2) must be achieved urgently and 'as soon as possible'[8] to protect public health. The recent Supreme Court ruling on air quality requires Defra to submit a new plan to tackle air quality, by the end of 2015, to demonstrate compliance with the EU limit value 'as soon as possible'. Limit values are absolute obligations that must be attained universally irrespective of cost and they must not be exceeded once attained.

[5] Ibid
[6] See the table on p.21 of original report, available from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/372557/Air-Quality--National-and-Local--Assessment.pdf
[7] http://cleanair.london/wp-content/uploads/CAL-269-Letter-of-clarification-from-the-Commission-190214_Redacted.pdf
[8] See 2

1.2 All three options would worsen air quality for significant numbers of people (up to 120,000 for Heathrow North West Runway) which would have related health impacts.

1.3 If the National Ceiling Directive is tightened as with current plans, the UK would be in breach of the ceiling in 2030 with or without expansion but all three schemes would worsen non-compliance.

1.4 The assessment highlights that Heathrow expansion would cause a new exceedence of the critical level of NOx for ecosystems at a Special Protected Area and a Site of Special Scientific Interest close to the airport. Gatwick expansion would increase NOx concentrations in locations where the Critical Level is already exceeded. However, the report states that the Government's interpretation is that the critical level does not apply at these locations.

1.5 The results from the local air quality assessment suggest that at least both of the Heathrow expansion options should be ruled out on air pollution grounds. There have been breaches of the legal limit at several sites close to the airport in recent years and according to the results of the Defra PCM model, breaches are forecast to continue in 2030, exacerbated by a new runway. Worsening air pollution above limit values is inconsistent with meeting limits 'as soon as possible'.

1.6 If unmitigated the Defra PCM model indicates that Heathrow expansion would lead to the area having the highest level of air pollution in the UK and would delay compliance with the EU limit in the London zone. It is evident that both Heathrow options fail the Commission's objective to '*improve air quality consistent with EU standards and local planning policy requirements*'.

1.7 There is also a clear case for ruling out Gatwick expansion on air quality grounds. Despite claims made by the airport[9], appendix E of the air quality report reveals that a breach of the legal limit was recorded close to the airport in 2014 (table E3, p.158). The results of the dispersal model and Defra's PCM model provide figures for the highest average NO_2 level which is within the 'high' risk category as set out in the first air quality assessment[10]. Like Heathrow expansion, a new runway at Gatwick would also lead to increased air pollution that would worsen the breach of the National Emissions Ceiling Directive (if amended as planned).

1.8 In addition, we note the non-deterioration principle which exists in the EU ambient air quality Directive. As outlined in a letter[11] from the European Commission to the air quality campaign group Clean Air in London, under Directive 2008/50/EC Member States should "*endeavour to preserve the best ambient air quality compatible with sustainable development*", and so air quality should not be allowed to diminish.

1.9 In Chapter 2 of the local air quality assessment, the Commission highlights that the National Planning Policy Framework states that planning, as part of the Government's agenda of sustainable development should *"contribute to…reducing pollution".* Given all three options are modelled to worsen local air quality, it is evident that all three are incompatible with sustainable development.

[9] See for example http://www.gatwickobviously.com/air-quality
[10] See 5 (p.21)
[11] http://cleanair.london/wp-content/uploads/CAL-269-Letter-of-clarification-from-the-Commission-190214_Redacted.pdf

1.10 As all three options are in the high or likely risk category of breaching EU legal limits it is our conclusion that they should be ruled out on air quality grounds. The first consultation document promised to determine '*the influence of mitigation measures*'[12] on air quality following expansion, yet this has in some cases been presented only as a high level, qualitative commentary. The consequences of mitigation measures failing to materialise or being insufficient would be increased levels of pollution, continued breaches of the legal limit or even the potential for limits on the use of a new runway.

1.11 The local assessment only considers the impacts on air quality of a new runway in 2030, shortly after a new runway would have opened according to the Commission's assessment. As a result it is impossible to consider the impact on air quality of the new runway operating at full capacity.

Q5: Do you have any comments on how the Commission has carried out its appraisal of specific topics (as defined by the Commission's 16 appraisal modules), including methodology and results?

2.1 We stand by the comments we made in our response to the original consultation that the work published recently, while welcome, should have been completed in time for the original consultation. The new consultation provides a large volume of technical data with limited time to review, assess and submit comments, and with little opportunity to seek clarifications. We are concerned that responses to this consultation will have little meaningful influence on the Commission's final report, considering it is required to be delivered by the end of Summer 2015.

2.2 We are concerned about the apparent disparity in the results from the Defra PCM model (which is used to assess the possibility of preventing UK compliance with EU limit values) and the local dispersal model (the ADMS-Airport model). While the first air quality consultation made clear that the Defra PCM model was a static model while the dispersal model is dynamic, there is a lack of explanation about the varying results in the latest consultation. For the Heathrow North West runway, the apparent difference appears to be related to the inability of the PCM model to allow for assumptions about realigned roads. However, no detail is provided about which properties would be affected by the newly aligned road and whether or not it will continue to be identified as an official exceedence once the road is re-routed.

2.3 For the Heathrow Hub scheme, where there is no realignment of Bath Road, there is a difference in the maximum average NO_2 of 18.6μm^2 between the two models while for Gatwick the difference in the maximum average NO_2 is modelled to be only 2.7μm^2. More detailed commentary about the differences should be provided. See point 2.5 for our further view on the clarity of the results.

2.4 No explanation is provided about why using the dispersal model, Gatwick is forecast to have a maximum average NO_2 level that is higher than both the Heathrow options despite being in an area with lower background levels of NO_2, often blamed by Heathrow as the reason for exceeding the air quality limit, and the model only incorporating 'mitigation by design'.

2.5 We also believe that there is a lack of commentary explaining the differences in figures produced for the first air quality assessment and the latest assessment. Several figures produced for the

[12] Ibid

first assessment are considerably different to the figures provided in this assessment such as estimates of total emissions and associated monetised costs.

2.6 While we appreciate that air quality is a complicated issue to model, it is our belief that some of the vital Information provided in this assessment should have been presented more clearly and with additional explanation. The additional information sheet published during the consultation period provides only limited assistance[13].

2.7 The assessment document still lacks information on key issues, including on the assumptions made about future surface access and modal share. We presume that the assumptions for future modal share of surface access are based on the work carried out for the Appraisal Framework Module 4 Surface Access but no direct link is made in the report. While the report states that "*surface access modal share and traffic volumes assumed in this Airports Commission assessment have been built into the dynamic modelling*." (P.73) and in answer to the Technical G question of the additional document published[14] that "*the independent modal share predicted an increase in passengers accessing Heathrow ENR by public transport",* it is not clear where that information is derived from.

2.8 Our view is that there is still work to be carried. The first air quality assessment promised that "*the influence of mitigation measures would need to be determined during second stage assessment"*[15] but the new assessment has only considered some important mitigation measures qualitatively. For example, in reference to Heathrow's plans to increase the share of public transport the report concludes "*it is not clear whether this is deliverable*" (p.51). This is identified as being because the Commission's model was unable to differentiate between airport related and non-airport related traffic

2.9 The consultation repeatedly refers to a document produced by Jacobs in 2015, 'Surface access to Heathrow: managing demand*',* but this document is not publicly available. We requested it but were told "*We do not consider that the Jacobs Report to which you refer is needed by consultees to respond intelligently to the Air Quality Consultation*"[16]. As a result, we are unable to assess the comments made in the document about the feasibility of a Heathrow congestion charge and other mitigation measures.

2.10 While we are aware that the Defra PCM model does not allow for assessment of air quality after 2030, we believe that the dispersal model should have been carried out for later years. This is because in 2030, a new Gatwick or Heathrow runway would not be operating at full capacity and so it is impossible to assess what the local air quality impact would be of the runway operating at full capacity.

2.11 However, we would like to note that the assessment is carried out for the two highest scenarios produced by the Commission, which is welcome given that we criticised the

[13] Consultation Queries and Responses https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/428234/queries-responses.pdf
[14] Ibid
[15] See 5 p.21
[16] Correspondence from the Airports Commission by email (21/5/15)

Commission's decision for the original consultation to only calculate the costs of expansion under carbon capped scenarios while the benefits were calculated under traded scenarios.

Q6: Do you have any comments on the Commission's sustainability assessments, including methodology and results?

3.1 We would again like to draw attention to the disparity (see point 2.2) between the Defra PCM model and the dispersal model. The local dispersal model produces results for a Heathrow third runway with the lowest, highest average air pollution and Gatwick with the highest (just below the legal limit). In comparison the Defra PCM model suggests that Heathrow expansion of any kind would lead to a maximum average NO_2 above the legal limit and high enough to delay the UK's compliance with the EU limit. The document makes it clear that the results do not include mitigation measures but no explanation is provided about the disparity in the results.

3.2 The assessment of mitigation options to reduce NO_2 is limited given the Commission says it has been unable to assess the impacts of any airport specific surface access measures, such as a congestion charge and Ultra Low Emissions Zone. Mitigation measures that could or should be undertaken anyway to achieve compliance with limit values 'as soon as possible' are not relevant to a development proposal.

3.3 Approving a runway on the assumption that mitigation measures could bring air pollution to within limit values is a high risk approach given the high forecast values provided under the Defra model. This is particularly the case given that previous projections for improvements around Heathrow produced in the context of the last proposed expansion and in terms of both road vehicles and aircraft have failed to materialise as quickly as anticipated. In 2014, Defra announced that compliance with EU limit values would not be achieved until after 2030 under current plans, saying that the reason was "*largely due to the failure of the European vehicle emission standards for diesel cars to deliver the expected emission reductions of NO_x*"[17].

3.4 With regards to the sustainability appraisal, we would like to draw attention to the high number of buildings and people that would be subject to increased levels of air pollution under the expansion schemes. The increased exposure to air pollution would have health effects for large numbers of people, as indicated perhaps by the increase in the air pollution costs now associated with expansion.

3.5 While the report claims airport expansion would have a negligible influence on whether or not the National Emissions Ceiling Directive is achieved, if the limit is revised down as looks likely, expansion at either airport would increase the UK's national emissions and therefore lead to a more significant breach of the limit.

Q7: Do you have any comments on the Commission's business cases, including methodology and results?

[17] http://uk-air.defra.gov.uk/assets/documents/no2ten/140708_N02_projection_tables_FINAL.pdf

4.1 We note that the anticipated costs from air pollution associated with expansion have increased in this new assessment, more than doubling for all the expansion options. We have found no explanation for why the estimated total costs and total emissions have changed between the two assessments. We believe that if there was doubt in the original figure published then there at least should have been an accompanying statement saying that the costs would be expected to change following the local dispersal modelling.

4.2 The cost-benefit analysis of Heathrow expansion (third runway and extended northern runway) presented in table 2.12 of the Sustainability Appraisal and Business Case would now be more negative for three of the five economic scenarios, while negative for at least two of the economic scenarios for Gatwick.

4.3 The costs provided in the original assessment did not take into account either abatement costs for reducing emissions to within legal limits or the costs that could be calculated following an Impact Pathway Assessment. The original air quality assessment stated that an impact pathway assessment and an assessment of abatement costs (as would be required for Heathrow expansion) could be carried out "*following further appraisal of air quality impacts*" including dispersal modelling (p.22). We are disappointed that this does not appear to have been completed as promised. A consequence of mitigation measures failing to materialise or being insufficient could be limits on the use of a new runway, harming its business case.

[redacted]