



Response to the Airports Commission's consultation 'Increasing the UK's long-term aviation capacity' from the Aviation Environment Federation

3rd February 2015

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 amenity affects. As well as supporting our members with local issues, we have regular input into international, EU and UK policy discussions. In 2011 we acted as the sole community and environmental representative on the Government's South East Airports Taskforce. At the UN we are the lead representative of the environmental umbrella organisation ICASA, which is actively engaged in the current talks aimed at agreeing global climate measures for aviation. We have responded only to those questions that are most relevant to our areas of expertise.

Q1 What conclusions, if any, do you draw in respect of the three short-listed options? In answering this question please take into account the Commission's consultation documents and any other information you consider relevant. The options are described in section three.

The Commission should be prepared to conclude that notwithstanding its view that there is a demand case for a new runway, in fact the combined results of its assessments indicate that the costs of expansion at any of the short-listed sites outweigh the benefits.

Our overriding conclusion is that none of the three short-listed schemes is compatible with appropriate environmental objectives, some of which are legally binding, and some of which are simply required to protect public health. We have a number of concerns in relation to the robustness of the Commission's evidence on environmental impacts in that the likely environmental damage associated with expansion appears to be consistently downplayed. But even as it stands, the Commission's evidence demonstrates that:

- When the expected growth at other UK airports is factored in, none of the scheme proposals would be compatible with the Climate Change Act unless new, unspecified (and in our view undeliverable) action was taken by Government to limit emissions.
- None of the proposals would improve air quality, as required by the Commission's assessment criteria, since for each proposal the Commission's analysis – while incomplete – concludes that the impact would be either adverse or significantly adverse
- None of the proposals would bring noise to within levels safe for health, as defined by the WHO and WHO Europe

A significant amount of important evidence in relation to environmental impacts, likely to reinforce these findings, is currently missing, however. This, when available, could have a significant impact on both the political acceptability of the proposals, and the estimated economic benefits of expansion.

The Commission should clarify its decision-making process in terms of (1) how the results of its assessments will inform its final recommendations, and (2) what assumptions it has made regarding future Government policy action or inaction, and the feasibility of these assumptions.

It is unclear how the Commission's analysis is designed to sit alongside the existing policy landscape. In some respects, the Commission appears to suggest that to deliver any of the short-listed schemes while avoiding significant environmental degradation, the Government (either national or local), will need to take policy action.

- On climate, the Commission talks about carbon capped and carbon traded futures as if these are simply alternative scenarios that might naturally arise in the same way as the possible economic scenarios that are modelled. But in fact both assume significant political progress and specific policy action. The carbon capped scenario is completely speculative in that it is entirely unclear how this could be delivered if a new runway is built.
- On air quality, the Commission claims that while the UK is currently breaching concentration limits in specific urban areas, "by the time of scheme opening, action at both a national and local level will have been considered to ensure these limits or any replacements or enhancements are respected." But with even Defra having argued in the recent past that action to ensure air pollution law was respected would be too costly¹ and currently not expecting to be compliant with EU law until 2030, even before considering the impact of a new runway, the Commission should guard against assuming that effective action would be easily deliverable.

Yet in other areas, the Commission explicitly assumes that no new policy action will be taken.

- Despite the ever-mounting body of evidence that annoyance from aircraft noise is increasing (Defra having published a study reaching this conclusion even during this consultation period²), and despite the Government having committed to increasing the stringency of the night noise regime for regulated airports to take account of improvements in aircraft technology, the Commission explicitly assumes in its analysis that no new policy action is taken to control noise.

The Commission should clarify precisely what assumptions it is making in terms of future Government policy to tackle environmental impacts. Where the achievement of environmental objectives depends upon new policy action, the impact of building additional runway capacity on the cost and deliverability of these policies should be carefully analysed. Where the Commission is assuming policy stasis, this should be clearly stated. Sensitivity analysis should be undertaken in relation to all environmental assessments, allowing for the possibility of a range of future scenarios.

More generally, the Commission should clarify how the results of its assessments will inform its final recommendations. For example, the 'place' assessment for Gatwick expansion says "place impacts will be consistently negative", while the main consultation document comments that "Any development at Heathrow will be adding development to an area that is already under environmental stress." But there is no indication of how much weight would be given to such factors in the Commission's final recommendations.

¹ <http://www.theguardian.com/environment/2012/feb/27/pollution-caroline-selman>

² National Noise Attitude Survey 2012, <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18288&FromSearch=Y&Publisher=1&SearchText=no0237&SortString=ProjectCode&SortOrder=Asc&Paging=10>

Q2 Do you have any suggestions for how the short-listed options could be improved, i.e. their benefits enhanced or negative impacts mitigated? The options and their impacts are summarised in section three.

The Commission should clearly demonstrate whether or not short-listed schemes can be compatible with the environmental objectives set out by UK green NGOs in September 2014.

Along with other environmental organisations, in 2014 AEF published a manifesto aimed at political parties which outlined what environmental conditions would need to be met if a new runway was to be built³. Collectively, these set out our views of what mitigation measures would need to accompany any new airport capacity, regardless of its location. The conditions include but are not limited to the following.

- Ensuring that UK aviation emissions do not exceed 2005 levels by 2050, while allowing for the possibility that this cap may need to be tightened in future pending further research on aviation's non-CO2 impacts, which are currently not accounted for

If a new runway were to be built, this could require:

- The introduction of a carbon tax, rising with time to between £329 and £1316 by 2050 according to your analysis
- The introduction of planning caps on activity at regional airports
- Requiring sectors other than aviation to make cuts in emissions beyond the level currently deemed feasible by the Committee on Climate Change, to allow for further leniency for aviation

- Ensuring that aircraft noise is reduced over time such as to be consistent with World Health Organisation guidelines (set out below in our comments on noise)

This could require:

- Releasing new runway capacity only to the extent that there is headroom against these guidelines
- Imposing a total ban on night flights from 11pm-7am

- Ensuring that all locations within the surrounding area of any proposed runway site are compliant with legal limits on air pollutants including nitrogen dioxide, PM10 and PM2.5, and ozone before beginning construction of a new runway

This could require the imposition of restrictions on use of this runway capacity if necessary to help maintain compliance with these limits, not least given the possibility that these may be tightened to reflect the latest evidence from the WHO.

³ <http://www.aef.org.uk/uploads/Aviation-joint-environmental-policy-proposals.pdf>

Q3 Do you have any comments on *how* the Commission has carried out its appraisal? The appraisal process is summarised in section 2.

The Commission should make any new analysis it completes after the close of this consultation available for public comment. Any material not made available for third party comment should clearly be identified as such in the Commission's final publication. The Commission should clearly identify any areas where it has been unable to complete all the necessary analysis.

We are concerned that overall the appraisals appear to have been undertaken in a hurry. Significant elements are missing, as discussed elsewhere in this response, and numerous updates and additional publications have appeared during the consultation period, with no indication in the updated documents of where changes have been made, making it even harder for respondents to the consultation to reflect on all the material presented.

Q4 In your view, are there any relevant factors that have not been fully addressed by the Commission to date?

Yes. There are several significant factors that have not been effectively addressed.

The first two of these relate to phase 1 of the Commission's work.

1. The Commission should have identified the wider economy cost of limiting aviation CO₂ to 37.5 Mt and fully incorporated this in its economic analysis.

We remain concerned that the Commission's analysis of need was essentially a consideration of demand, with an implicit assumption that demand should be met. The fact that the Commission has not expressed a view in terms of a desirable future mix of long-haul versus short-haul traffic or leisure versus business travel helps to underline this. A full consideration of need, by contrast, would in our view have presented a robustly evidenced consideration of economic costs and benefits, and reserved judgment on whether or not a new runway should be built until analysis of the likely key environmental costs was complete.

Making robust cost estimates of environmental impacts is undoubtedly challenging, with numerous possible approaches likely to yield significantly varied results. On climate change, however, much more precise cost estimates can be made given the legislative requirement to limit UK aviation emissions to a specific target level by 2050, and the existence of emissions budgets for non-aviation sectors.

We have always argued that the challenge of keeping aviation CO₂ emissions to the level the CCC considers compatible with the UK's 2050 climate objective is significant enough to throw into question the case for a new runway. One way of considering the scale of this challenge would be through a modelling of the costs required to limit aviation emissions to 37.5 Mt if a new runway is built. The advice of the Committee on Climate Change to the Airports Commission in its open letter of July 2013 was quite clear on the need for the Commission's economic analyses to reflect the legislative requirement for aviation emissions to be limited such as to be compatible with the Climate Change Act.

In our view, this analysis should have been undertaken during the Commission's assessment of need phase. If it was impossible to complete the work in time, the Commission should have kept open the question of whether or not to recommend expansion until a later date. Indeed we note that the work was undertaken at a crude level, which indicated a possible carbon cost of £600 per tonne of CO₂, though this finding was buried in an appendix and never reflected in any way in the interim report's confident finding that the UK needs a new runway. Instead, the Commission jumped ahead to a phase 2 assessment of the carbon associated with specific expansion options, thereby obfuscating the main point.

We are extremely disappointed that the Commission has now published its final consultation, including a raft of technical papers, and that – still – not one of them, even those focussing entirely on carbon, addresses the single headline piece of advice from the CCC, despite the Commission's clear declarations from the start that its work would reflect the UK's climate change commitments and be consistent with them.

2. The Commission should have identified the policies needed to close the gap between the carbon traded and carbon capped worlds with a new runway, or at the very least highlighted the need for Government to develop such policies.

Another way of assessing the scale of the challenge in ensuring that airport expansion is consistent with climate change commitments is to consider what possible policy measures would be required to ensure that the carbon cap (which remains an entirely speculative assumption in the Commission's analysis) is delivered. This has been a significant gap in terms of policy analysis ever since the CCC's publication in 2009 of its report on aviation and the UK carbon target, as even without a new runway, Government forecasts have since at least 2009 predicted a significant overshoot of the carbon target. We find it extraordinary that the Commission has expressed no concern about this ongoing policy gap given that its recommendation for a new runway would, as forecasting from both DfT and the Commission clearly demonstrates, mean that even greater effort would be required to constrain emissions.

We note that the Commission's forecasts, both for passenger traffic and for CO₂ per passenger, appear to be significantly lower than the DfT's forecasts, effectively reducing the scale of the challenge that would be faced by a Government considering adding a new runway's worth of emissions to the UK total. We return to this point in relation to the Commission's assessment of carbon below. Even so, it is clear from the figures in Appendix 5 of the Commission's Forecasts paper in relation to necessary assumed carbon costs to close the gap between the carbon traded and carbon capped forecasts under different expansion options (which anticipate costs of between £329 and £1316 per tonne of CO₂e), that even under these lower forecasts, closing this gap would be difficult and/or costly.

3. The Commission should have presented indicative PSZ contours

There are two other areas that we would have liked to see covered by the Airports Commission's assessment methodology. The first is the development of indicative PSZ contours for each runway proposal, which would give an indication of the impacts of expansion both in terms of any increased risk to local people, and on non-aviation infrastructure development.

Inclusion in a Public Safety Zone imposes restrictions on changes to personal dwellings and on the construction of new infrastructure – both transport and buildings – in order to limit population growth in areas exposed to significant risk of aircraft crashes. The size of the PSZ around a runway therefore imposes effective costs on the local area in terms of house values and opportunities for new development, as well as on safety itself. For local authorities looking for ways to accommodate the predicted population increases in the South East, particularly around Heathrow, this could be an important consideration.

4. The Commission should have undertaken health impact assessments.

The final significant omission from our point of view is in relation to assessment of health impacts. While we appreciate that some work has been undertaken in relation to quality of life, air quality and noise impacts, it is hard to get an overall sense of the potential impact of expansion on public health, both physical and mental. Such assessment should be undertaken prior to publication of the final report, and should consider how different groups of people in society might be impacted, with particular attention paid to vulnerable groups. (Information is presented based on national averages, but particular attention needs to be given to how vulnerable groups in the relevant areas could be at risk).

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?

Each of the proposals would clearly have very significant local impacts. We welcome the fact that the Commission has undertaken analysis in terms of community impacts, impacts on buildings and townscapes and other local issues. Feedback from our members suggests that it is often impossible to make a fair judgement about such impacts without a detailed understanding of what people in the local area most value. We would strongly encourage the Commission to give appropriate weight to community responses to its proposals and to reflect them in its final analysis. If there are communities who would be affected by the proposed runway projects but who may not be fully aware of this, we urge the Commission to highlight the need for further outreach as part of its final recommendations and not to assume that a lack of response indicates implicit support.

1. Strategic fit

Assessment of strategic fit should have considered a more nuanced analysis of 'need' than one that looks only at demand.

We note that the Commission's key question in relation to its short-listed schemes has been the extent to which they are able to provide sufficient capacity to meet the Commission's forecast for future demand, which is equated with need in the Commission's analysis. We have set out above why we consider that a full assessment of need would have addressed wider issues and this would in turn affect the Commission's assessment of strategic fit.

2. Economy impacts

The Commission should fully reflect the cost of restraining aviation emissions to 37.5 Mt while building a new runway in its economic analysis, in line with advice from the Committee on Climate Change. The Commission should make clear in its final report that, even in the absence of this work being complete, some of its own forecasts for the direct economic impact of short-listed schemes are net negative.

The clearest message we can take from the Airports Commission's analysis of potential economic impacts from a new runway is that they are highly uncertain.

The interim report suggested in its Executive Summary that the costs of not building a runway

...could amount, over a sixty-year time period, to:

- £18-20 billion of costs to users and providers of airport infrastructure.
- £30-45 billion of costs to the wider economy.

Yet it seems that when the Commission got round to actually calculating the costs and benefits of the schemes in practice, some of the numbers were very much lower, with the final consultation document suggesting that:

Under a carbon-traded scenario transport economic efficiency benefits would range from £44.1 billion under the low-cost is king scenario at the high end, to £3.7 billion under the global fragmentation scenario at the low end.

Even this summary in fact, however, conceals the fact that for both Heathrow schemes the Commission's modelling suggests that the economic benefit would in fact be an economic cost under some forecasts.

The main economic analysis for direct effects of building a new runway as set out in the Business Case and Sustainability Assessments for the short-listed schemes can be summarised as follows:

- Gatwick – net economic impact expected to range from substantially positive to marginally positive
- Heathrow extended runway – net economic impact expected to range from positive to negative
- Heathrow North West runway – net economic impact expected to range from substantially positive to marginally negative

We are glad that the Commission explicitly recommends caution in relation to the wider GDP forecasts (produced alongside these forecasts for direct economic effects), given that these not only

take no account of environmental and social disbenefits but make numerous assumptions that we consider speculative.

We note, finally, that all the Commission's estimates of economic impacts will be over-estimates, given that it has failed to estimate the wider economic cost of constraining aviation emissions to a level compatible with the Climate Change Act while building a runway in the South East, a point covered in detail elsewhere in our response.

3. Local economy impacts

The Commission should make clear whether or not there is significant unemployment in areas local to the short-listed schemes, what additional infrastructure and services would be required to cater for any new staff, and who would pay for this.

The prospect of job creation is always going to be of particular interest to politicians and local authorities. It is important, however, to be clear about:

- How much local need there is for new employment (Crawley, for example, recently appeared at number 7 in a list of UK cities with the lowest Job Seekers Allowance claimant count⁴.)
- If there is insufficient local labour to meet the requirement, what this implies in terms not only of new housing but also associated services such as schools, hospitals, transport infrastructure and other services, and who would pay for this
- How airport expansion compares with other possible uses of the land that would be required in terms of likely job creation

5. Noise

The Commission should model noise to levels that reflect health-based objectives, and should highlight the need for such objectives.

The Commission's objective for the purpose of this assessment reflects Government policy 'to minimise and where possible reduce' noise impacts. We have always argued, however, that this policy is effectively meaningless without any quantitative noise targets. The focus of the Commission's assessment has been on comparing the possible impact of a new runway with the current situation, with a 'do minimum' forecast, and with alternative short-listed schemes. In order to help the future Government determine the possible acceptability of runway expansion options, however, the Commission should also, we believe, have considered the impact of the short-listed schemes against meaningful noise objectives.

Given the particularly weak starting point in terms of Government policy, we welcome the Commission's consideration of noise in terms of a range of noise metrics, the modelling of Leq contours down to 48 dB, and the inclusion of a 54 dB contours in the main consultation (as well as 57 and 69 dB contours). However, we continue to believe that the Commission should have modelled noise impacts with reference to the maximum noise exposure levels recommended for health by the WHO and WHO Europe.

⁴ <http://www.centreforcities.org/wp-content/uploads/2015/01/15-01-09-Cities-Outlook-2015.pdf>

The longstanding WHO community noise guidelines published in 1999 indicate that moderate annoyance in the daytime and evening begins at 50 Leq (16 hour) for outdoor noise, and 45 Leq (8 hour) outside bedrooms to avoid sleep disturbance (and 60 L_{Amax}, fast). The adoption of the N60 metric could be seen as reflecting this advice, though in fact there is little justification provided except that the metric has been adopted for Sydney Airport. No justification at all is provided for the decision to model the N60 impact down only to 25 events as a minimum. If 60 L_{Amax},outside is the level at which night awakenings start to occur, 25 events at this level looks a very large number. A strong case could be made for modelling N60 >1 for night time periods. In addition, consideration should be given to whether noise events in tranquil areas are disturbing at lower levels than 60 L_{Amax}.

More recent recommendations from WHO Europe, reflecting the large body of research undertaken since 1999, revise the night time recommendations to a maximum of 40 N_{night} (Leq) outside. We are disappointed that no attempt was made to model noise down to this level.

There are good reasons to anticipate that the Government's approach to noise management may in future become more stringent than is at present, which would lead to a reduction in the modelled 'do minimum' noise levels. The Government has been committed since 2012⁵ to a future tightening of the night noise regime for Heathrow, Gatwick and Stansted, for example. In terms of research evidence, in addition to the updated WHO noise work discussed above, recent evidence published by the UK Government itself underlined the point that people are annoyed by noise at lower levels than in the past and that this applies particularly to aircraft noise. Nearly 1 in 3 people from a representative sample across the UK were found to be bothered, annoyed, or disturbed to some extent by aircraft noise, up from 1 in 5 people in 2000, despite this being a period during which average airport noise contours have been shrinking⁶.

The Commission should make clear the numbers of people newly exposed to noise by each scheme

One of the most significant factors in terms of the political acceptability or otherwise of the short-listed proposals, we believe, will be the extent to which people are newly affected by noise as a result of expansion. Recent trials of more concentrated flight paths at both Heathrow and Gatwick have led to levels of public outcry that neither airport anticipated, and all trials have been halted pending a review by the CAA. While the trials are not directly related to the Commission's work, they do give an indication of the likely strength of feeling among people exposed to aircraft noise for the first time. We therefore regard the numbers of people newly overflowed to be an important consideration alongside total local or national noise impacts that should have been explicitly considered in the Commission's analysis.

The Commission should employ a metric such as L90 to indicate current background levels at sites short-listed for expansion and how these might change

Another important consideration in terms of how noise is experienced is the level of background noise. We argued in our response to the appraisal framework that the noise impact will differ significantly in this respect at Heathrow compared with Gatwick. Alongside the numbers of people

⁵ <https://www.gov.uk/government/speeches/night-flying-restrictions-at-heathrow-gatwick-and-stansted-airports>

⁶ See footnote 2

exposed to noise at given levels at short-listed sites, therefore, it would be valuable for the Commission to undertake modelling based on a metric such as the L90, which describes the average equivalent noise level (Leq) for 90% of the time (discussed in the Jacobs report on noise but not in fact used) to allow a consideration of the different degree of impact that aircraft noise might have in different locations.

The Commission should clearly explain the basis for its assumptions on future fleet mix and on flight paths, and should present sensitivity analysis indicating what effect alternative assumptions might have on noise impacts.

Technical documents accompanying the consultation set out in some detail the assumptions made in terms of the future fleet mix at different sites. But the basis for these assumptions is unclear, referring in part to a publication by the aviation industry (the Sustainable Aviation Road Map, to which it appears to attribute both 0.1 and 0.3 dBA annual reduction assumptions), which could be expected to be optimistic in comparison to more independent research. We consider it a major flaw in the Airports Commission's analysis that no sensitivity analysis has been included to indicate the potential effect of different assumptions on the conclusions, especially since some of the findings are counterintuitive (in relation to the potential noise reductions associated with building a North West runway at Heathrow).

We have similar concerns about the assumptions made by the Commission in relation to future flight paths. While we accept that it is impossible to know at this stage precisely what the future flight paths might be, we feel it is unacceptable for the Commission to have failed to demonstrate whether or not significantly different findings in relation to noise impacts would be reached if different patterns of air traffic were assumed. NATS have so far only produced only a series of indicative flight paths for expansion at Heathrow or Gatwick – with Heathrow Hub provided with only one option. The Commission should, in our view, have published indicative flight paths for a range of scenarios. It is clear from the consultation materials that modelling was carried out for the Heathrow North West runway option where a range of options were considered such as to reduce the number of people newly overflown or to provide respite. However, insufficient information has been provided about the flight paths for these alternative options.

6. Air quality

The Commission should complete detailed air quality assessments as soon as possible, should make these available for public scrutiny, and should undertake sensitivity testing that allows for the possibility that any anticipated air quality improvements may not materialise in the timeframe anticipated.

We welcomed the modification of the original air quality objective to include reference to legal limit values. The final Appraisal Framework stated that the assessment methodology would consist of two elements: "impacts on health, in terms of changes in exposure to pollution at affected properties in the study area; and non-compliance with EU Limit Values." (paragraph 6.13). However, to date neither has been fully assessed. We are further disappointed that it is not clear if or when the detailed assessment will be available, and that no commitment has been made to consult further on this or to allow the modelling to be scrutinised.

The lack of a detailed local air quality assessment is a significant omission given its importance for examining whether EU limit values would be breached and for assessing health impacts. Local modelling is also vital for assessing how effective possible mitigation measures would be in preventing EU limit values from being breached. Heathrow has talked about possible future congestion charges and other measures in relation to road vehicles to improve local air quality which it claims would mean a runway could be built without breaching legal limits. However, without the local modelling and a full detailed assessment including cost benefit analysis of the mitigation proposals, it is impossible to say how high a congestion charge would have to be or whether even such a drastic step would be sufficient. The Airports Commission should also model local air quality impacts if future mitigation measures are not put in place.

We note that the Airports Commission concluded in its appraisal of the Gatwick expansion option that "there is a potential risk of exceedance associated with the baseline situation without any expansion although this is much lower than equivalent risks at Heathrow. These risks are only likely to be exacerbated by the unmitigated emissions associated with the additional traffic caused by expansion" (paragraph 10.9). However, the airport itself has claimed to have no air quality problem and has therefore made no proposals for mitigating local air quality impacts. Any local modelling by the Airports Commission in relation to Gatwick should therefore assume that no mitigation measures are taken by the airport.

The Airports Commission's Business Case and Sustainability Appraisals say in the introduction to the Air Quality Assessment section that "predicting future air quality impacts of airport expansion is not a simple process" and that the assumptions made "can profoundly affect the results". The Commission should therefore also present clearly the assumptions made in the local modelling and the sensitivity of the results to these assumptions.

In paragraph 10.15 of the Airports Commission's Heathrow North West Runway Business case and Sustainability Assessment the Commission states:

Currently the UK is breaching concentration limits in specific urban areas (not around Gatwick) and by the time of scheme opening, action at both a national and local level will have been considered to ensure these limits or any replacements or enhancements are respected. These include any changes in the road network including orbital and access routes to London. Such action would fundamentally alter the context in which the scheme's performance on this issue should be viewed, resulting in reduced emissions and potentially improved performance nationally from national level policy measures. The Commission will be developing a better understanding of these effects.

It is worth recalling that when the Government published the 2006 Progress Report on the Air Transport White Paper (2003), it quoted modelling suggesting that even if a third runway was built, air quality was likely to improve as a result of both more efficient aircraft engines and new standards for road vehicles. But both assumptions failed to materialise, such that air quality at the monitoring station closest to Heathrow remains persistently above legal levels for NO₂. Improvements in new vehicle standards did not deliver the anticipated benefits in the real world, while a 2012 paper by Drs Carslaw and Beevers of Kings College London⁷ found, 'strong evidence that there has been no change in aircraft NO_x emissions at Heathrow Airport over the past 11 years.'

⁷ <http://www.sciencedirect.com/science/article/pii/S136481521200237X>

We are particularly concerned therefore, that any analysis from the Airports Commission of policies that could be introduced to reduce emissions around Heathrow (to the point where a third runway could be built without breaching legal air quality limits) must be subjected to independent peer review.

Finally, it will be important for the Commission’s final recommendations to Government to take account of the fact that the Supreme Court is expected to issue a judgement this year requiring the Government to achieve air quality limits much sooner than 2030, as Defra currently anticipates, which may well trigger a review of infrastructure plans. This follows a ruling from the European Court of Justice that the UK must take action to ensure that air pollution is reduced to legal levels in the shortest time possible.

8. Carbon

The Commission should account for why its emissions forecasts are lower than the latest figures from the Department for Transport, even where its passenger forecasts are comparable or higher.

We noted above that critical questions in relation to the impact of expansion in the context of the Climate Change Act remain to be addressed. The Commission has clearly, however, published a large volume of analysis relating to the additional emissions associated with the construction and operation of a new runway.

It is interesting to compare both the baseline forecasts in terms of passenger numbers and CO₂ for Heathrow and Gatwick that were prepared for the Commission by Jacobs to the latest forecasts from the Department for Transport. While the forecast for passenger numbers are either comparable or higher in the Jacobs report, the CO₂ figures are considerably lower. No explanation is provided for this discrepancy, indeed the report indicates that it has used similar CO₂ modelling assumptions to the Department for Transport⁸.

	DfT 2013 Aviation Forecasts Mt CO ₂ central max use constrained	Jacobs CO ₂ baseline	DfT 2013 Aviation Forecasts central demand constrained mppa	Jacobs 2050 mppa baseline	AC Forecasts document table 5.1 with 5 scenarios carbon traded mppa	AC Forecasts document table 5.1 with 5 scenarios carbon capped mppa
Heathrow	18.2	16.6	92.9	93.5	91-95	94-97
Gatwick	4.3	3.9	44.2	46.6	45-47	44-47

Similarly, the Airports Commission’s forecasts of future emissions in the absence of a new runway, while varying by scenario, are nevertheless all lower than the DfT’s central estimate of 47 Mt CO₂,

⁸ “Detailed descriptions of how passenger demand and ATM forecasts are converted into CO₂ emissions forecasts are given in the last published DfT forecasts. These forecasts also outline how the UK passenger aircraft fleet evolves over the forecast period and give baseline assumptions for the fuel efficiency of new aircraft, operational practices, biofuel uptake and behavioural change. These base assumptions, which reflected the work of the CCC in 2009, have been retained for the Commission’s CO₂ forecasting.” Jacobs report, Carbon Baselines

even under the sensitivity test whereby the carbon price is removed altogether, and again with no explanation provided.

	Base case 2050, no carbon price	Base case 2050, carbon traded
Assessment of need	44.1	39.9
Global growth		46.6
Relative decline of Europe		41.8
Low cost is king		46.8
Global fragmentation		37.8

This being the case, it is very difficult to have confidence in the Commission's assessment of the total CO2 forecasts with a new runway, which look surprisingly low.

We note that despite this, the Commission anticipates CO2 levels exceeding the carbon cap for each of the short-listed schemes in the absence of new and unspecified Government action to reduce emissions.

10. Place

The Commission should undertake more detailed analysis of impacts on tranquillity.

The Airports Commission's assessment of tranquillity notes for Gatwick Airport that "some areas of high tranquillity may be affected by new flight paths" (p.131 of the Gatwick Appraisal). The place assessment document provided by Jacobs notes that "No attempt is made within this report to quantify these changes in terms of acceptability or nuisance, or indeed the level at which a landscape character area may be significantly affected, as this is beyond the technical expertise of the author." (Appendix B: Landscape Methodology). We consider this a significant gap for the Commission to address.

Our comments on the Commission's noise assessment, above, include some concerns about whether the Commission's choice of noise metrics paints a sufficiently complete picture of likely levels of disturbance, including whether for tranquil areas noise events of less than 60 dB may cause significant disturbance. Consideration of noise impacts at lower levels where these would occur in areas of low background noise would provide a useful quantitative measure for considering impacts on tranquillity.

The assessment underlines the significant uncertainty in the flight paths assumed for modelling, which are integral to any understanding of tranquillity impacts. Effects on tranquillity should therefore be assessed under a range of flight path scenarios. The Jacobs report makes a

recommendation that further analysis of tranquillity and landscape impacts should be carried out once detailed airspace information is available. But by that point, a decision is likely to have been made on building a runway. Whether or not a scheme might unavoidably have unacceptable impacts on tranquillity would by this stage not be open for consideration.

11. Quality of life

The Commission should avoid making unsubstantiated claims about the impacts of expansion on quality of life, and should report accurately its consultants' findings.

We welcome the fact that the Commission has attempted to consider the potential impact of expansion on quality of life – potentially an important complement to analysis of economic impacts. We are disappointed, however, by both the limited issues considered in the research, and by the way in which the Commission has reported its findings in the scheme appraisals.

We note that in contrast to the Airport's Commission's summary of findings in relation to quality of life, PWC's own Executive Summary of its research conclusions has a particular focus on noise impacts, and beginning "Living within a daytime aircraft noise contour (over 55dB) is negatively associated with all subjective wellbeing measures: the presence of daytime aircraft noise is associated with lower life satisfaction, lower sense of worthwhile, lower happiness, increased anxiety and lower positive affect balance". We feel that this insight should have been referenced by the Commission. Nevertheless, it is perhaps unsurprising that most people, if asked if they like aircraft noise, say no.

An alternative approach to considering the quality of life impacts pertinent to the political decisions that will need to be taken might have been to collate qualitative narratives describing how people give meaning to their local areas, what they value, what if anything they would like to change, and how they would feel about the kind of changes that airport expansion would bring. This could usefully have included consideration of the impacts of expansion on quality of life for different groups of people. Since impacts are likely to be highly variable on, for example, frequent flyers, vulnerable people living locally, or children in local schools, this might have yielded more useful information than overall summary statements about average national or local level impacts.

Alternatively, if the aim was to generate quantitative information, the Commission might have considered commissioning a cost benefits analysis that explicitly addresses social concerns, such as the Social Return on Investment, a technique that has in the past been used by the New Economics Foundation, for example, to consider the potential impacts of Heathrow expansion⁹.

But even the relatively innocuous findings of the research commissioned are, we feel, inaccurately portrayed in the scheme appraisals, with none of its headline findings on noise for example being referenced. Instead, the single conclusion that the Commission has taken from PWC's research, repeated in each scheme assessment, seems to have been that the quality of life impact of expansion would be 'broadly neutral'. This is followed in each case by a claim that "However, expansion at [this site] is likely to result in improvements in quality of life at national level, due to the improved connectivity and its attendant economic and social benefits." No evidence is provided for this latter statement, suggesting it is in fact based only on supposition.

⁹ <http://www.neweconomics.org/publications/entry/grounded>

12. Community

The Commission should explain how the damage to community cohesion that would be associated with expansion could be mitigated.

We note that the Airports Commission states that there is limited information on “secondary impacts of development”, for example where displaced households will be relocated to and the effect on existing communities. Providing recommendations for appropriate mitigation to tackle these issues should be a priority for the Airports Commission in developing its final report in order to demonstrate to the communities that will be affected that their concerns are being seriously considered.

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

We have provided detailed comments above to specific aspects of the sustainability appraisals.

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

We have not commented on the business case assessment. However, the future environmental impact of any option can only be guaranteed (an important consideration for communities) if there is a policy to limit new runway capacity to ensure compliance with air quality limits, noise commitments or climate change policy. We would like the Airports Commission to consider that there could be serious implications for the business cases if the use of the new runway is restricted in this way.

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