

To: Owen Bellamy, Senior Analyst, Committee on Climate Change

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Dear Owen Bellamy

Friends of the Earth analysis of Airports Commission interim report relating to climate change headroom

We spoke in January about how the Airport Commission's Interim Report published in December 2013 bears on the relationship between aviation emissions and airport capacity. I explained that (although a volunteer and not a staff member) I am acting as Friends of the Earth's aviation campaigner, having worked on the aviation brief since 1998, and written the organisation's submissions into the 2003 White Paper process, the Coalition Government's Aviation Policy Framework, and lastly the Airports Commission's consultations. For the last decade the FOE aviation work has focused on the relationship to climate change, and we commissioned studies from Tyndall Centre which were amongst the first I think to quantify the increasing share that rising aviation emissions would over time represent of a reducing UK carbon budget. I said I would write to you further about the Friends of the Earth analysis, but I'm afraid I then got swamped by other work. I'm acutely conscious of your timescales (since you will include your response to the Commission's study in your Annual Progress Report) so here at least is an outline of our analysis of their work.

I said that the FOE position *post* the Interim Report is that we are not clear that the Airports Commission (AC) had demonstrated that the expansion of airports capacity of the scale they have identified in the report is compatible with an emissions cap of the type proposed by the Committee on Climate Change, and that we had noted the [Guardian article](#) in which David Kennedy had voiced similar reservations, saying (amongst other things): "He said it was an open question whether government targets could be met if a second runway at Heathrow was proposed or expansion was allowed at Gatwick.) The article itself expressed the view that "The Davies Commission interim report, published last week, referred to the previous recommendations of the Climate Change Committee, but was opaque on how those targets could be met, expansion permitted." These are conclusions which we also reached.

From the beginning of our engagement with Davies we wanted to clarify with the Commission whether they also accepted that a 'CCC 2009 report compatible analysis framework' should be the basis for their own work - because the DfT Aviation Policy Framework, related government decisions including that relating to the inclusion of aviation within the UK carbon budget, and finally the brief for the Commission's work, collectively all left this critical choice harmfully ambiguous. So you will see from our earlier Climate Change submission (attached) that we took them systematically and laboriously through the policy background, to reach a conclusion that there was no other option except to work from such a CCC 2009 framework; and we followed this up in conversation directly with Sir Howard Davies. Fortunately there was probably little doubt that in any case that they would do anything different, so that intention was indeed confirmed in his October speech and then the interim report. Friends of the Earth believes that obviously you are the better masters and defenders of your own framework, and that therefore the most appropriate course of action is for us to raise our issues and analysis with you, and for yourselves to then subject them to your own scrutiny.

In particular paragraphs 24-29 of our submission set out the initial version of an analysis suggesting that other parties - such as the Mayor of London and Policy Exchange - who also accepted the CCC 2009 framework had nonetheless misanalysed the extent to which the 55% increase in ATMs that it allowed to 2050 would be available for new, as against existing, capacity. See our *Stage 5* section below.

Our stage-by-stage analysis of the Davies October speech + December Interim Report relating to the availability of emissions 'headroom'

Stage 1) We referenced the Commission's own acceptance of the need for compatibility with CCC 2009: "The question is whether the growth that the CCC has said is compatible with the UK's climate objectives implies an expansion in runway capacity"; and then reminded them that we had previously suggested that in fact there simply would not be available any ATM 'headroom' to permit new capacity at an expanding London hub FOE Climate Change response paras 26-28.

*Stage 2) We pointed out that the DfT 2013 forecasts already exceeded the limits set by CCC 2009. Growth was limited by CCC 2009 as an increase in ATMs 'to no more than around 3.4 million in 2050', up from 2.2m in 2005; that is an increase of 1.2m ATMs in 45 years. The most recent DfT Forecasts projected growth as follows: 2010 – 2.0m ATMs; 2030 – 2.72m; 2050 – 3.77m; that is a larger and faster increase of 1.8m ATMs in 40 years. Clearly the constraining effect of the combined DfT input assumptions – which include **no new runways Annex F.1 footnote 3** 'Modelled results from s02 scenario (maximum use of existing runways)' – had not applied sufficient restraint to arrive at compatibility with the CCC maximum.*

Stage 3) Consequently a new CCC compatible ATM projection would need to be calculated This would be the ATM trajectory that would allow the Commission to identify what total UK ATMs will have to be constrained to at five yearly intervals - a critical planning assumption and tool. Unfortunately there was no such ATM trajectory in CCC 2009. And then actual ATMs did not display the anticipated increase from CCC's 2005 baseline of 2.2m but instead dropped to 2.0m in 2010. The DfT forecasts did not anticipate ATMs reaching that baseline level until around 2018 Annex F.1 Consequently the Commission's own ATM trajectory would need to be rebased and reprojected. FOE could not anticipate what that would be but, as a simple exercise, if we applied the same proportions that the DfT Forecasts project for anticipated growth between 2030-2050 (63% of the total between 2010-2050) to an assumed CCC 2009 compatible trajectory then this might allow around 2.6 ATMs to be provided for in 2030. The DfT forecasts were projecting this as 2.724m ATMs.

Stage 4) We suggested that the Commission should adopt a 2030 (rather than 2050) key decision horizon. Dividing the full 2050 period into two parts (up to, then after 2030) would be useful because it contributes to limiting the extent of pre-emptive seizure by aviation of the ever-reducing emissions space in the total UK carbon budget. Choosing 2050 would substantially increase both the emissions abatement costs and infrastructure investment misallocation risks for all sectors of UK Plc.

Stage 5) We then fitted forecast 'non-hub' growth to the available calculated headroom With 2012 ATMs at 2.1m this would leave a headroom of around 500,000 ATMs to be allocated to airport capacity up to 2030 up to this assumed 2.6m threshold. We identified two groups of airports where such growth should reasonably be expected - competitors to the Heathrow hub; and selected strong regionals - therefore excluding smaller regional airports with available capacity to which SE growth could not however be reallocated. The DfT 2013 forecasts record that Heathrow ATMs are already fully constrained at their maximum of 480th but Gatwick is projected to increase by 14.4% to 2030, Stansted by 82%, Luton by 75%, London City by 78%, and Birmingham by 91%; thus a 337,000 ATM increase at major airports serving the greater SE catchment within the 500,000 available. Secondly the strong regional airports such as Manchester, Edinburgh, Bristol and Southampton are forecast by DfT to add another 163,000 ATMs. These two groups of growing airports - none of whom could be expected to willingly surrender any ATM 'allowance' in order to permit the Heathrow hub to grow instead - would therefore together take up the full 500,000 ATM headroom.

*Stage 6) Consequently we reaffirmed the initial conclusion previously submitted to the Commission – that **there did not appear to be any ATM headroom available for an enlarged London hub within a CCC 2009 compatible framework** – and then pointed to the incompatibility between this and other Commission findings. We acknowledged the complexities and movements within the above totals: so ATMs at many of the peripheral regional airports are projected to fall, but these are most probably being reallocated to adjacent strong regionals. And whilst if capacity at a London hub – the role at present occupied by Heathrow – was to be deconstrained in some way (including by the provision of an additional runway), then a fraction of the other London system airport growth would reallocate back to the hub, but this would only occur very late in the 'to 2030' period and consequently would be at the margin.*

So if the Commission was also arguing that "we will need some net additional runway capacity in the south east of England in the coming decades" – but had accepted as well that this would need to be met within a CCC-compatible ATM framework – then how exactly would this be achieved? We also pointed out that CCC 2009 Table 7.1b *Projected runway capacity, utilisation and target compatible ATMs in 2050 (Likely scenario assumptions)* did not appear to offer much scope for new hub capacity within its 3.4m ATM limit.

Stage 7) Then allow for the ATM headroom being reduced still further in the Interim Report's Technical Appendix

Paragraph 5.11 of Appendix 3, commenting on the Commission's rerunning of their revised CCC 2009 framework, stated: "But the most significant difference between the CCC and Commission forecast is in the number of ATMs that can be accommodated within the carbon cap. While ATMs in the CCC forecasts grew by 55% from 2.2 to 3.4 million, in the new forecasts they grow by just 33%* to 2.9 million. The difference is driven mainly by the modelling of, and underlying assumptions about, the loads on aircraft (passengers/ATM) and the distances passengers will be flying." So the Commission is now projecting an ATM headroom all the way through to 2050 that is significantly (42%) smaller than CCC 2009: 0.7m ATMs compared to 1.2m ATMs. If we apply the same 'rule of thumb' ratio around the before/after 2030 breakpoint this releases just 400,000 additional ATMs for the period to 2030 – so less than the 500,000 which the two *Stage 5* groups of airports will take with their existing runways.

*NB the number is 33% in this appendix but 38% in the main report 4.16. It's not clear why. *Technical Appendix* table 5.1 has the actual numbers which compute to 33% but says that these exclude freight

Stage 8) We confirmed our interpretation therefore that the Commission's own forecasts are not compatible with any new capacity, and in addition will require constraint mechanisms being applied to already consented capacity We believe it is significant that nowhere in the Interim Report did the Commission set out in detail how its new ATM forecasts are compatible with a CCC framework, which they have also accepted. The responsibility to make that reconciliation rested with them so consequently they need to be challenged.

Stage 9) A need to resolve a further inconsistency with the CCC allowance for aviation emissions in the UK carbon budget As you will know Table 1 of CCC 2012 *Scope of carbon budgets I Statutory advice on inclusion of international aviation and shipping* included the 'planning assumption' that aviation emissions should be flatlined at 31MtCO₂e per annum (just below their 2010 level) up to 2030 and by clear implication beyond. This is different from the position derived from the so-called 2005-2050 target (which Friends of the Earth does not accept, nor is it now government policy) and which was analysed in CCC 2009, that aviation emissions could continue to rise over future decades and beyond 37.5 MtCO₂ before (possibly) returning to the 2005 level in 2050. The trajectories within the Commission's climate change consultation document in figures 4.2 (the DfT CO₂ forecasts) and 5.2 described as the Commission's own analysis, both had aviation emissions approaching 50 MtCO₂ per year in 2050, hugely in excess of the CCC planning assumption of 31 MtCO₂e per year.

But in the Commission's Technical appendix figure 5.5 p.72 (i) the emissions 'target level' is set at 37.5 MtCO₂, and (ii) the 'capacity constrained' line starts at the lefthand end from a 2010 base and 32MtCO₂. However if the line had extended back to 2005 it would have risen

back to 37.5, reflecting the subsequent emissions trough that came with recession. But instead of rebasing aviation emissions down to the new reduced 2010 level of 32m - and thus aligning baselines with CCC 2012 (and of course also sequestering 5.5 MtCO₂) - aviation is instead permitted by this forecast to increase first back up to 37.5 MtCO₂ and then to continue upwards before finally coming back to 37.5 in 2050 ('It therefore follows that emissions can, and do, exceed 37.5MtCO₂ prior to 2050.' *Appendix 5.4*). There is in fact (from our perspective) a perverse relationship between these rising emissions and the ATM headroom analysis above. The former are a consequence of the ATM (=emissions) headroom disappearing as the London+Regional airports grow their traffic.

Stage 10) Need also to account for the Commission's failure to incorporate the constraint of emissions arising from the existing capacity into its framework You will have noted that in paragraph 4.33 of the Interim Report the Commission has excluded taking responsibility for rising emissions from existing capacity (see *Stage 5* above) within its decision-making framework; instead it passes this responsibility to government and yourselves: "It is ultimately for Government, with advice from the CCC, to determine the appropriate framework for controlling aviation emissions." Since this would possibly allow it to make a recommendation to increase new capacity at a specific location whilst also arguing that total demand/ATMs ought in parallel to be constrained downwards to a sufficient extent by some other mechanism not yet available, then this unreal assumption needs to be challenged.

As before I apologise for the late submission of this analysis - which I'm sure you will have already worked your way through independently (and maybe found some flaws therein!) - but I thought it worthwhile spending some of this Bank Holiday making sure that you did have it available to you. Please do contact me should you require any further information.

Yours sincerely

Anthony Rae

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