

Revised Draft Airports National Policy Statement: new runway capacity & infrastructure at airports in the SE of England + 2017 UK Aviation Forecasts

Consultation Response from Campaign for Better Transport - December 2017

1. This is a follow-up to the consultation response made by Campaign for Better Transport to the original draft NPS for a Heathrow Third Runway and, like that submission, focuses almost exclusively on carbon impacts. Its principal task is to examine the implications of the new 2017 aviation forecasts for the conclusions of our original response (enclosed as an appendix), whilst reviewing any revisions to the revised draft NPS.

2. That document makes a substantial reliance on the new aviation forecasts:

- "The updated forecasts show that, nationally, **aviation demand is expected to be higher than previously forecast in the years up to 2030**, reflecting recent growth in passenger numbers. Much of this additional demand is concentrated in London and the South East. The updated forecasts demonstrate that without expansion, London airports would be even more constrained than previously forecast, operating at full capacity by the mid-2030's. This further reinforces the need for the right additional capacity to be delivered as soon as possible." and - "**Carbon emissions are now forecast to be substantially lower than previously forecast**, as aircraft are expected to fly shorter distances and airlines are using more fuel-efficient aircraft."¹

3. As AEF set out in their Transport Select Committee submission (paragraphs 8-10) the starting point for the CBT analysis is the substantial change in the 2050 CO2 forecast made between the 2013 and 2017 forecasts (referred to as *2013F* and *2017F* respectively), and consequently that whilst 'with the new forecasts there is still set to be an overshoot of the target, [because] this is now approximately halved, the possibility of closing the gap looks more achievable'. For environmental consultees this therefore requires an unpacking of the forecasts' component parts and assumptions 'to see if we can identify convincing evidence or rationale to explain the large disparity between the two emissions forecasts' AEF. Consultees have to undertake this analysis themselves because neither the revised forecasts, or the reference to them in revised NPS, provide an explanatory text substantiating what are highly significant revisions. As we noted in our May submission the task of consultees particularly concerned with carbon impacts has been made much more difficult by the absence of an adequate disclosing narrative.

4. In the first instance the task requires a resolution of the apparent paradox that the faster (and therefore higher) passenger and ATM growth in 2017F compared to 2013F results not in increased but *reduced* CO2 emissions at the 2050 date (47MtCO2 in 2013, down to 37Mt in 2017 baseline and 39.9Mt in the proposed HR3 scenario). That faster growth then feeds through into revised statements in draft NPS about the capacity of the London system. The original version stated: "All major airports in the SE are expected to be full by 2040, and by 2050 demand in the SE of England is expected to outstrip capacity by 13-15%, even on the lowest demand forecasts." Now the new version states: "All major airports in the SE are expected to be full by the mid 2030s, with four out of five full by the mid 2020s. By 2050 demand at these airports is expected to outstrip capacity by at least 34%, even on the department's low demand forecast."

5. Beginning with the unconstrained forecasts, a comparison between 2013F and 2017F reveals a major alteration to the spread of the 2050 Low-Central-High cases, which transforms from *2013F* 350-**482**-661mppa to *2017F* 468-**494**-533mppa² but still with an increase to the overall Central case, confirming that the substantial 2010-16 baseline increase from 211 to 267mppa continues to apply throughout the period to 2050. This confirms a starting position for the analysis that 2017F represents an increase in

¹ DfT *Consultation on the revised draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the south-east of England* 3.9-10. In preparing this submission CBT has also reviewed the submissions to the Transport Select Committee's NPS inquiry made by [WWF](#) and [AEF](#) and where appropriate will reference those texts rather than recapitulate their narrative or analysis.

² DfT 2013F Annex D.1 and 2017F Table 55

unconstrained demand.

6. The following table then brings together the passenger, ATM and CO2 forecasts in the constrained scenarios *including* Heathrow R3), and disaggregated between London system and regional airports.

Passengers/ATMs/CO2 2016-50: Baseline + HR3

	2016	% incr	2030	% incr	2040	% incr	2050	Total %
passengers total UK	266m	28.9%	343m	12.8%	387m	12.4%	435m	63.5%
ATMs 000s	2119	16.1%	2460	9.6%	2697	11.7%	3012	42.1%
CO2 MtCO2	37.3	16.6%	43.5	-2.8%	42.3	-5.7%	39.9	7.0%
passengers London	162	37.0%	222	8.6%	241	2.9%	248	53.1%
ATMs	1101	23.8%	1363	6.1%	1446	1.8%	1472	33.7%
CO2	26.5	22.6%	32.5	-8.6%	29.7	-14.1%	25.5	-3.8%
passengers Regional	104	16.3%	121	20.7%	146	28.1%	187	79.8%
ATMs	1018	7.8%	1097	14.0%	1251	23.1%	1540	51.3%
CO2	8	0.0%	8	22.5%	9.8	39.8%	13.7	71.3%

7. A response provided directly by DfT to AEF adequately roots the substantial reduction in the CO2 forecast in an upward revision of ATM loading factors³ This in itself is a welcome confirmation of the longtime analysis of Stop Stansted Expansion that 2013F over-estimated the growth in the number of ATMs needed to cope with rising passenger demand. But whilst the amount of passengers > ATMs > CO2 consequently reduce sequentially (for both the UK total/London system) as might be anticipated, it can't be said that the projected reduction of passenger growth in the London system after 2030 - where the 60mppa increase in the 14 years 2016-30 is followed by growth of just 26mppa in the 20 years between 2030-50 - carries the same plausibility.⁴ An annualised growth rate of 2.2% across the former period is claimed to be followed by a reduction to 0.8% and then just 0.3% over the next two decades *table 65*.

³ "In relation to your main question around why there has been an approximate 25% drop in the number of ATMs, there are three main reasons for this:

1. There are forecast to be fewer passengers in 2050 – the forecast has fallen from 447m to 410m.
2. It is reflective of real word changes, in particular passengers per ATM is now much higher in the new base year data – it has increased from 109 in the base year used in the 2013 forecasts (2011) to 126 in the new base year (2016). These changes can be seen in the text box on page 59 of the 2017 forecasts. This growth in passengers per ATM since 2011 is driven by a combination of larger aircraft and higher load factors.
3. The forecast growth in passengers/ ATM is also faster in the 2017 forecasts than in the 2013 forecasts. It was previously forecast to grow from 109 to 119 from over 39 years. It's now forecast to grow from 126 to 141 over 34 years. This follows assumptions from the AC work which assumed that all aircraft sizes grow gradually every year regardless of the level of demand. This assumption stems from research into airline order books and the DfT have retained the assumption." DfT to Tim Johnson, AEF

⁴ But the difference in 2050 between the baseline and the +HR3 forecasts for total passenger demand is just 25mppa, because even with the additional capacity the London system is still fully constrained. Inside the London system with +HR3 Gatwick creeps up in 203/40/50 from 45>50>52mppa; Luton is constant at 18mppa; whilst Stansted drops from 31 in 2016 to 22> 32>35mppa *2017F table 34*. At the same time airports outside the London system are also filling up: 'However airports more accessible to the London area and which share some overlaps of catchment areas with the London airports (e.g. Birmingham and Bristol) experience 'spill' of passengers from London seeking alternatives to London and in time such airports also near or reach capacity even with the expansion in London.' 7.30. Unfortunately the bar charts *Figure D.1* displaying the timeline for the early 100% usage in the London system are only available in the baseline projection, but not the +HR3 one.

8. The attempted rationalisation for this provided in 2017F 7.6⁵ is however undermined by the quite different policy direction set by the *Future of Aviation* draft strategy (July 2017)⁶, pointing - *in addition* to the opening of HR3 - to 'a *requirement* for more intensive use of existing airport capacity ... [and] existing runways including those in the South East', the raising of capacity caps, and clear hints towards a second new London runway (paragraphs 2.10, 7.20, 7.22-23). In other words, the intended future policy response of DfT, when confronted with the extent of capacity constraint projected for the London system after 2030, is **to remove the constraint**.

9. So what the slowdown after 2030 in 2017F is in fact displaying is merely temporarily suppressed demand which the aviation strategy has already signalled it then intends to subsequently release. In which case **the lower ATM forecasts for the period 2030-50 will in due course be breached, and so will the CO2 projection** - which has simply been artificially lowered within the 2017F modelling by the disguising of the future policy intention to further raise capacity. For the purposes of draft NPS the lower CO2 forecasts at the end of the projection period are just a mirage.

10. One has to ask just how sustainable - that is to say both durable over the long-term, and within environmentally limits - can such a policy of continually expanding capacity be? The DfT can see that, within the aviation policy framework it continues to promote, further capacity expansion beyond HR3 will be necessary by 2030, and then again by 2050, and yet it continues to not just permit but actually encourage the expansion of passenger demand without regard for the consequences. It must surely be apparent to everyone else that this strategy of continually expanding capacity only works in the short term, has no future, and has literally run out of road (or in this case, runway).

11. Fortunately the revision of the ATM factors also provides us with a way out of this self-inflicted policy predicament, because from an environmental sustainability perspective, and from a specifically Climate Change Act/UK carbon budgets perspective, what the revised forecasts reveal as well is highly significant and positive:

- that in the London system, which makes up 61% of UK passenger demand, if **53% passenger growth** can be achieved at the same time as a **4% reduction in aviation CO2** - as result of increased efficiencies, but maybe also of capacity constraints working within the system/forecast model - then the way is now clear for **the carbon reduction policy framework applying to aviation to be deliberately tightened** so as to achieve further reductions to aviation carbon (e.g. the 7% total CO2 increase between 2016-50 can become an absolute reduction of X%) whilst still allowing for substantial increases in passenger demand.

- That therefore there's now an opportunity to achieve the **absolute decoupling** of output from emissions in the aviation sector that the *Clean Growth Strategy* figure 1 (following the *CCC 2017 Progress Report* figure 1) has demonstrated is already being achieved across the entire UK economy. The implication is equally clear: what can be the justification for continuing aviation's completely separate and privileged treatment within the UK carbon reduction framework, which is the result of DfT policymakers first creating and then persistently defending a separate and absolute 37.5MtCO2 allocation which permits both the sector and decision/policy makers to game the UK carbon framework in their sole favour. If the UK economy as a whole is meeting its requirement to achieve absolute carbon reduction, and if the shipping sector is also forecast to achieve the same to 2050⁷, then why should a 'rogue' aviation sector alone now be allowed to insist on preferential access to a dwindling UK carbon budget, mostly to the benefit of wealthier leisure travelers, in a way which places the country's entire pathway to 2050 decarbonisation in jeopardy? (And see paragraph 17-19 below).

⁵ "The scenarios reveal a marked slowing of the rate of annual growth. Market maturity, lower economic growth inputs and higher carbon prices combine with capacity constraints to lower the set of central constrained forecasts well below the 445mppa reported in the department's 2013 forecasts."

⁶ DfT *Future of Aviation* "The Aviation Strategy will consider how the need for further growth should be treated beyond the additional runway that is required by 2030." 2.10

⁷ CCC *Sectoral Scenarios for 5th Carbon Budget* figure 5.6

12. The revised 2017 forecasts seem to indicate that **aviation can indeed operate within the carbon reduction approach applying to every other sector**, paving the way for **aviation emissions to now be formally included within the UK carbon budgets**, as specified by section 30 of the Climate Change Act.

13. This is essential for the consideration of draft NPS because one of the reasons identified by the original CBT submission as to why it could not be approved on climate change grounds was that: 'There is in place **no government aviation carbon policy framework** within which such emissions forecasts can be first assessed and then managed and if necessary constrained.' *para.24* As we've already noted, 2017F has to be assessed within the context that also considers the government's future policy intentions: not just its intentions in relation to accepting or removing future capacity constraints (as above), but also its present and future willingness to put in place an aviation carbon policy framework. The *Future of Aviation* does not provide any indication whatsoever of the government's intention to make aviation activity consistent with Climate Change Act, ending what by December 2018 will amount to a decade-long rearguard action by DfT to prevent Section 30 designation, the essential first step to ensure CCA compliance.

14. The original CBT submission also identified a critical understanding - when assessing compliance: that 'a scenario basket of constraint assumptions should not be interpreted as having an actual existence as a framework of carbon policy measures that will implement these constraints' *para.15iii*. In other words, the difference between modelled forecasts and real-world implemented policy. This distinction is visible again in some of the language used by revised draft NPS⁸, whilst 2017F and also the Ricardo Energy & Environment report on *Carbon Abatement in UK Aviation* October 2017 provide additional examples:

- The work on marginal abatement curves will remain only of theoretical interest if it's not located within an implementation framework. Yet Ricardo noted: 'Although the report considers policies that are considered technically feasible, based on discussions with DfT and other Government Departments, and a high level description of each is provided, detailed consideration has not been given to the precise mechanisms by which they would be implemented.' *Introduction*

- As in the previous MAC report the critical fiscal demand management tool was deliberately omitted from the Ricardo review, by DfT instruction using a standard pretext: 'The concept was for an additional tax, similar to the air passenger duty (APD), based on a passenger's carbon footprint. However, discussions with DfT early in the study clarified that policy measures related to taxes should not be included in this study (being a Treasury responsibility).' *Annex 1 A.3.5*

- Carbon prices are an input assumption for 2017F, with the implication being that their substantial increase from £4/tCO₂ in 2016 to £77 in 2030 and then £221 in 2050 will be acting as a real world restraint on activity 5.16 (their proportionate contribution to changes in modelled fares is illustrated in figure 5.4). But in the absence of both an overall carbon policy framework, and specific instruments to give effect to that level of constraint (which neither EU ETS or the ICAO CORSIA will provide), then that restraint will not be achieved in the real world.⁹

- In relation to fuel costs 2017F notes: '... fuel efficiency influences air fares. Modelling the turnover of the future aircraft fleet changes the fuel and carbon cost elements of air fares, as new generations become increasingly fuel efficient' 5.17, but what it doesn't comment on is the critical interaction where increasing fuel efficiency feeds through via the low-cost business

⁸ Para 1.6 describes Ricardo as 'an externally commissioned report on the costs of *potential* policy measures that would reduce the UK's carbon emissions from international aviation'; 3.8 states 'Since the FRSR was published, the Department has made some updates to the methodology it uses for estimating the direct economic and wider economic impacts. The analysis also looks at alternative ways *future* carbon policy *could* address international aviation emissions, assessing whether, if aviation sector emissions were constrained, expansion could still deliver positive impacts.' *our emphasis* This careful selection of language, implying but not committing to action, is deliberately chosen.

⁹ And see AEF paras 19-20.

model into lower fares, consequently into higher demand, and thus higher - not lower - emissions.

15. In the original CBT submission we also pointed to a further problem of any forecast annual exceedances of the CCC 37.5MtCO₂ planning assumption: that they deplete the total UK carbon budget available to 2050.¹⁰ 2017F now allows us to approximately quantify the extent of that depletion. The quantification can only be approximate because only the 2030/40/50 actual numbers for total aviation CO₂ *with* HR3 are provided (so not annualised or 5 yearly amounts); instead, the calculation has to be undertaken by reading from the 'Central' line in 2017F *figure 8.1 LHR-NWR*. However, since almost immediately after 2016 the line rises above the 37.5 level and stays there throughout the period to 2050, the amount of exceedance 'under the graph' is easily visible.

16. When quantified what this shows is an *exceedance on top of* the 37.5MtCO₂ CCC planning assumption of around **65MtCO₂** between 2016-50. The total amount of aviation carbon emissions over that period is forecast to be nearly **1.25 gigatonnes**. Within the 5th carbon budget (2028-32), the last one that has been set and adopted, aviation emissions would amount to fully **1/8th of the total UK carbon budget** (212 out of 1725 MtCO₂). In 2030 2017F projects that **aviation emissions will be around 43MtCO₂**, compared to CCC's 'Total Transport GHG Emissions Central 2030 projection' of **68Mt for all domestic transport**.¹¹

17. So for a second time we need to ask just how sustainable - that is to say both durable over the long-term, and within environmentally limits - can such a policy of continually expanding aviation carbon as a proportion of the total UK carbon budget be? In October 2016 *Carbon Brief* presented its analysis¹²: 'Aviation to consume half of UK's 1.5° carbon budget by 2050, even if the sector's emissions growth is constrained', now taking account of the Paris Agreement - which has subsequently come into force for the UK. Whilst its calculations were based on the higher CO₂ projections of 2013F the analysis was quite correctly trying to anticipate a direction of policy travel consequential to the probable tightening of the 2050 target.

18. The detailed work of CCC in its report *UK climate action following the Paris agreement* (also October 2016) sought to identify some of those implications following the commitment that: 'In line with the Paris Agreement, the Government has indicated it intends at some point to set a UK target for reducing domestic emissions to net zero.' It identified for the total UK carbon budget: 'A linear path from 2014 (when UK emissions were 462 MtCO₂/yr including international aviation and shipping) [which] implies reaching net zero CO₂ emissions by 2033-55 for 2°C and 2026-8 for 1.5°C. *Box 2.3*; and also a *Maximum Effort* scenario for aviation in which 'emissions **15% lower** than 2005 levels; Shipping: full take-up of technological and operational measures; further increases in ship size and use - still limited - of biofuels and LNG. 40 MtCO₂e' - compared to a central scenario of 46 MtCO₂e, and a higher one of 63 MtCO₂e' *table 3.1 our emphasis*. In the Maximum scenario the CCC planning assumption of 37.5 MtCO₂ would thus be reduced to 32MtCO₂.

19. The implications for policy makers from these tightening numbers and policy reflections are clear and stark. With CCC noting yet again that 'It is less clear how to avoid emissions in other sectors, in particular from agriculture, aviation and some parts of industry' *p.40* it

¹⁰ 'There is one more inconsistency, indeed contradiction, in the aviation carbon framework to deal with, but this time as a result of CCC's own application of the '2005-50' national target, which originated in 2009 with the Labour government and which CCC then translated into the planning assumption for building aviation emissions into UK carbon budgets. ... CCC has created an internal contradiction within its own framework: whilst it is an essential characteristic of the CCC overall carbon budgets that any exceedance of their limits in one year counts to reduce the total remaining carbon budget (which is a fixed amount) for all future years, in the case of aviation carbon every year's emissions up to 2049 is permitted to exceed the 37.5MtCO₂ planning assumption, without any upper limit, and thus cumulatively eat into the UK total carbon budget to 2050. So not only is the cumulative 'area under the graph' of the UK carbon budget left eroded, but also there are no internalised reduction incentives built into the aviation carbon framework.' *CBT May 2017 para.32*

¹¹ CBT calculations from 2017F figure 8.1 LHR-NWR, CCC for CB5, and CCC [Sectoral Scenarios for CB5](#) figure 5.12. The latter doublecounts around 1.75MtCO₂ of domestic aviation emissions.

¹² www.carbonbrief.org/analysis-aviation-to-consume-half-uk-1point5c-carbon-budget-2050

cannot be a responsible course of action in 2017 for DfT to continue to promote the unconstrained expansion of air travel which will result in the perilous erosion of the total UK carbon budget, on which all economic and social sectors are dependent, for the benefit principally of the 80% of air passengers (predominantly wealthier people) who use it just for discretionary leisure travel.

The DfT aviation strategy is literally running out of carbon budget, and cannot be compatible with the *Clean Growth Strategy* to which the government is now committed. Ominously, this is already projecting a cumulative shortfall for the total UK carbon budget of 167MtCO₂ by 2032.¹³

Conclusions relating to draft revised NPS

20. The CBT submission in May 2017 concluded (see appendix): that draft NPS had to be determined within a legal framework set by the 2008 Planning Act, which particularly requires that it should 'take account of Government policy relating to the mitigation of ... climate change', but because that requirement had not been adequately met, for a number of reasons, then the NPS **could not be approved** in its current form. The revised 2017 aviation forecasts seemed at first glance to have removed the carbon constraint on future airport expansion, but not only can that appearance be seen, on analysis, to be a sleight of hand - based on a purely temporary suppression of demand - but that in fact their significance is to the opposite effect: that they provide the first evidence in support of a fundamentally essential policy framework that seeks to absolutely decouple aviation demand from carbon emissions. Consequently CBT reaffirms still more strongly its previous conclusion that, before NPS can be approved: 'A government aviation carbon policy framework [has] to be in place, in order to ensure that the UK's overall climate mitigation framework is not destabilised, and other economic and social sectors disadvantaged by an accelerated exhaustion of the UK's cumulative carbon budget to 2050, caused by increasing, rather than decreasing, aviation emissions'.

Anthony Rae – for CBT
19th December 2017

Appendix CBT consultation response May 2017 – Conclusions

87.5% of the proposed Heathrow North West Runway carbon impacts are emissions from flights generated by its additional capacity. The proposed Aviation National Policy Statement, to be reviewed by Parliament later this year, has to be determined within a legal framework set by the 2008 Planning Act, which particularly requires that it should 'take account of Government policy relating to the mitigation of ... climate change'. Because the draft NPS does not adequately meet that requirement, for the following reasons:

- It does **not provide within the DNPS text a quantified assessment prepared directly by the government of the HNWR carbon impacts**, comprehensively defined, - which the government therefore has to stand behind - so as to allow Parliament to understand their future scale and implications.
- There is in place **no government aviation carbon policy framework** within which such emissions forecasts can be first assessed and then managed and if necessary constrained.
- Neither is there in place - as part of such a government aviation carbon framework - any **commitment to mitigate both the increased Heathrow and also total UK emissions** to a level consistent with the UK's climate mitigation framework (the 2008 Climate Change Act) and its adopted carbon budgets; nor, it is believed, is there an intention to provide and implement any such framework.

¹³ BEIS *Clean Growth Strategy* table 2, p.41

- Nor is there in place an **overall government aviation policy framework** which would allow an assessment of the consequences of the HNWR proposal for other UK airports and air passengers in general, whilst proposals to produce a new aviation strategy at a date later in 2017 have been deliberately sequenced so as to prevent parallel consideration of both in Parliament.

- The information that should have been provided within the DNPS in order to allow consultees and Parliamentary decision-makers to reach an informed judgement about the NPS itself, the HNWR proposal being promoted by the government, and its consequences has been **inaccessible, ambiguous and misleading**.

... it therefore **cannot be approved** its current form. The deliberate decision of the Department for Transport not to enact or adopt key components of a policy framework governing aviation carbon emissions means that, in practice, there exists no upper limits to which aviation emissions - either from Heathrow (with or without a third runway), or for UK aviation as a whole - could be restricted within the NPS.

To correct these deficiencies will require:

- the government itself to provide a quantified forecast of those carbon impacts (rather than relying on forecasts prepared by the Airports Commission);

- A government aviation carbon policy framework to be in place (in order to ensure that the UK's overall climate mitigation framework is not destabilised, and other economic and social sectors disadvantaged by an accelerated exhaustion of the UK's cumulative carbon budget to 2050, caused by increasing, rather than decreasing, aviation emissions);

- A government overall aviation strategy also to be in place (in order to ensure that a Heathrow capacity decision does not have consequences which disadvantage other airports, or air passengers in general).

Since such deficiencies cannot however be corrected within the immediate period, any attempt to act on an NPS approved by Parliament which had nonetheless ignored these issues might be susceptible to legal challenge.