

Revised Draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England and 2017 UK Aviation Forecasts

Consultation Response from Campaign for Better Transport December 2017

Campaign for Better Transport is a leading charity and environmental campaign group that promotes sustainable transport policies. Our vision is a country where communities have affordable transport that improves quality of life and protects the environment.

We welcome this opportunity to add to our earlier consultation response on the original draft aviation NPS (May 2017).

Summary

The consultation invites comments on the revised draft Airports NPS or any of the documents set out in the table at pages 7 and 8 of the further consultation document. Our response focuses on CO2 emissions and on surface connectivity, although we note and share the concerns raised by other NGOs on noise, air pollution, and habitat damage.

We note that revised figures indicate that the aviation demand is expected to be higher than previously forecast in the years up to 2030, reflecting recent growth in passenger numbers and an apparent policy of unconstrained demand. We disagree that the appropriate response is to expand airport capacity.

We are sceptical that it is possible to accommodate larger than previously anticipated passenger movements while at the same time, producing lower than previously predicted CO2 emissions. However, should such a reduction in CO2 be deliverable, then there is no longer any justification for leaving aviation outside the constraints of the UK carbon budget.

Given the urgent and overriding need to reduce CO2 emissions, we reject the idea that continuing to expand capacity is a responsible or sustainable approach. 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.

We are clear that expanding Heathrow is not a sustainable option. However, should any airport expansion go ahead, improved surface transport to minimise increased road traffic is essential. A

comprehensive and fully funded surface transport strategy, with milestone targets, should be a prior requirement for the NPS. While welcoming some stronger wording on the need for improved surface connectivity, we feel the requirements are still inadequate to manage the projected passenger numbers, and this inadequacy, combined with the uncertainty of how such additional surface transport will be funded, further undermines the case for expansion.

We therefore continue to reject the conclusion of the draft NPS that there is a need for additional airport capacity in the South East of England by 2030; and consequently oppose proposals for an additional runway at Heathrow.

We reaffirm still more strongly our previous conclusion that, before the NPS can be approved, a government aviation carbon policy framework has to be in place: this is to ensure that the UK's overall climate mitigation framework is not destabilised, and other economic and social sectors are not disadvantaged by an accelerated exhaustion of the UK's cumulative carbon budget to 2050, caused by increasing, rather than decreasing, aviation emissions.

Consultation response: CO2 emission impacts

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 as before, focuses primarily 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. In preparing this submission Campaign for Better Transport has also reviewed the submissions to the Transport Select Committee's NPS inquiry made by WWF-UK¹ and AEF².
2. The consultation paper on the revised draft Airports National Policy Statement makes a substantial reliance on the new aviation forecasts, stating that *"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-2030s. This further reinforces the need for the right additional capacity to be delivered as soon as possible"* (3.9) 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."* (3.10).³
3. As AEF noted in their Transport Select Committee submission, the starting point for a carbon analysis is the substantial downward revision in the 2050 CO2 forecast made between the 2013 and 2017 forecasts. Consequently they state 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"*. However, neither the revised forecasts, nor the reference to them in the revised draft NPS, provides an explanatory text substantiating what are highly significant revisions, and the absence of an adequate narrative only serves to make it harder to hold an informed consultation.
4. The faster growth anticipated in the 2017 aviation forecasts has led to revised statements in draft NPS about the capacity of the London system. The original version of the draft NPS 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."* 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."* There is an apparent paradox that the faster (and therefore higher) passenger and air transport movement (ATM) growth in the 2017 forecasts compared to the 2013 forecasts: this results in reduced CO2 emissions at the 2050 date (47MtCO2 in 2013, down to 37Mt in 2017 baseline and 39.9Mt in the expanded Heathrow scenario).
5. A comparison between the 2013 and 2017 forecasts reveals a major alteration to the spread of the 2050 Low-Central-High cases, which transforms from 350-482-661mppa (2013) to 468-494-533mppa (2017)⁴ but still with an increase to the overall Central case, confirming that the

¹ Written evidence submitted by WWF UK (NPS0017)

² Written evidence submitted by the Aviation Environment Federation (NPS0031)

³ DfT *Consultation on the revised draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the south-east of England*

⁴ DfT the 2013 forecasts Annex D.1 and 2017 forecasts Table 55

substantial 2010-16 baseline increase from 211 to 267mppa continues to apply throughout the period to 2050. This confirms that the 2017 forecasts represent an increase in unconstrained demand.

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

Passengers/ATMs/CO2 2016-50: Baseline + HEATHROW THIRD RUNWAY

		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. We note the response provided directly by DfT to AEF which bases the substantial reduction in the CO2 forecast in an upward revision of ATM loading factors. To quote:

“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.”⁵*

We welcome this confirmation of the analysis of the Stop Stansted Expansion campaign, that the 2013 forecasts over-estimated the growth in the number of ATMs needed to cope with rising passenger demand. However we find it unconvincing that the projected reduction of passenger growth in the London system after 2030, with the 60mppa increase in the 14 years 2016-30, is followed by growth of just 26mppa in the 20 years between 2030-50: that projects an annualised

⁵ DfT to Tim Johnson, AEF

growth rate of 2.2% across the former period claimed to be followed by a reduction to 0.8% and then just 0.3% over the next two decades.

We note that 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.

	2030				2040				2050			
	Baseline	LGW 2R	LHR ENR	LHR NWR	Baseline	LGW 2R	LHR ENR	LHR NWR	Baseline	LGW 2R	LHR ENR	LHR NWR
Gatwick	45	58	45	45	50	74	49	50	52	99	51	52
Heathrow	86	85	125	132	90	89	128	135	93	90	128	136
London City	6	7	5	4	6	7	7	7	6	7	7	7
Luton	18	18	18	18	18	18	18	18	18	18	18	18
Stansted	31	25	23	22	35	32	33	32	35	35	35	35
London total	187	192	216	222	199	220	235	241	205	249	239	248
Birmingham	18	18	16	15	27	24	22	21	33	30	32	31
Bristol	10	9	9	9	10	10	10	10	10	10	10	10
East Midlands	6	6	7	7	9	8	8	8	10	10	10	10
Edinburgh	13	13	13	13	15	16	16	16	18	18	19	19
Glasgow	12	12	12	12	13	13	12	12	15	15	14	14
Liverpool	4	4	5	5	5	5	5	5	8	9	8	8
Manchester	31	31	30	29	39	38	38	37	50	44	46	45
Newcastle	5	5	5	5	5	5	5	5	6	6	6	6
Larger regional airport total	98	97	95	94	123	118	117	116	151	142	145	143
Other regional	28	27	27	27	37	32	31	31	53	42	45	44
Total outside London	126	124	122	121	160	150	147	146	204	183	190	187
Total	313	317	337	343	360	370	382	387	410	432	429	435

Table 34 Passenger demand by airport, central demand, mppa

At the same time, the 2017 forecasts anticipate that airports outside the London system are also filling up, both with local users and with passengers from London seeking alternatives: “*in time such airports also near or reach capacity even with the expansion in London*” (7.30).

8. We note the attempted rationalisation for this provided in the 2017 forecasts: “*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.*” (7.6). However this is undermined by the quite different policy direction set by the *Future of Aviation* draft strategy, which states “*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)⁶, pointing in addition to the opening of a third runway at Heathrow, to the raising of capacity caps, and clear hints towards a second new London runway. In our response to the draft aviation strategy, we set out our concerns that the policy response to the extent of capacity constraint projected for the London system after 2030 is not to manage demand but is to remove the constraint.

9. Our concern is that the slowdown after 2030 in the 2017 forecasts is merely temporarily suppressed demand which the aviation strategy has already signalled it then intends to subsequently release. The lower ATM forecasts for the period 2030-50 will in due course be breached, and so will the CO2 projection, which we fear has been artificially lowered within the 2017 forecasts modelling and would be breached by any future policy to further raise capacity. Consequently, we remain unpersuaded that the lower CO2 forecasts at the end of the projection period in the draft NPS are at all realistic.

⁶ DfT: Future of Aviation (July 2017)

10. We do not believe that a policy of continually expanding aviation capacity can be sustainable: it is not durable over the long-term, and cannot be achieved within the required environmental limits. We are concerned that within the current aviation policy framework, further capacity expansion (beyond a third runway at Heathrow) will be necessary by 2030, and then again by 2050. To encourage the expansion of passenger demand and continually expand capacity without regard for the consequences is not a sustainable policy for the long term.

11. However we welcome the potential to cut CO2 emissions revealed in the revised ATM forecasts as a result of increased efficiencies, and presumably also of some capacity constraints working within the system/forecast model.

If it is the case that in the London system (which makes up 61% of UK passenger demand), 53% passenger growth can be achieved at the same time as a 4% reduction in aviation CO2, then the way is now clear for the carbon reduction policy framework applying to aviation to be tightened so as to achieve further reductions to aviation carbon. If true, then we would argue that the projected 7% total CO2 increase 2016-50 can become an absolute reduction of CO2, whilst still allowing for substantial increases in passenger demand.

12. The revised 2017 forecasts now seem to indicate that aviation can indeed operate within the absolute 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.

This would provide an opportunity to achieve the absolute decoupling of output from emissions in the aviation sector that the *Clean Growth Strategy* (following the *CCC 2017 Progress Report*) has demonstrated is already being achieved across the entire UK economy. 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 the aviation sector should also be required to comply, rather than being given preferential access to a dwindling UK carbon budget. There is no longer any justification for continuing aviation's privileged treatment within the UK carbon reduction framework, in a way which places the country's entire pathway to 2050 decarbonisation in jeopardy.

13. The Future of Aviation does not provide any indication whatsoever of the government's intention to make aviation activity consistent with Climate Change Act. Without such a requirement, the draft NPS could not be approved on climate change grounds as there is no government aviation carbon policy framework on place within which CO2 emissions forecasts can be first assessed and then managed and if necessary constrained. The 2017 forecasts should be assessed within the context of future policy intentions, both the approach to accepting or removing future capacity constraints and the degree of willingness to put in place an aviation carbon policy framework.

14. In our previous submission, we also pointed to a critical issue for the draft NPS : that a scenario basket of modelled forecasts with constraint assumptions (such as the 2017 Forecasts) cannot be misconstrued as actually providing a framework of carbon policy measures that will deliver the necessary constraints in real-world implemented policy. Since an aviation carbon reduction framework does not exist at present then there can be no certainty or probability that all the constraints built into the carbon forecast will ever be achieved.

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

The Riccardo report on carbon abatement, looking at marginal abatement curves, is important yet will remain only of theoretical interest if it is not located within an implementation framework. *“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.”*⁸

We are very concerned that the critical fiscal demand management tool was deliberately omitted from the Ricardo review: *“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).”*

Carbon prices are an input assumption for the 2017 forecasts, 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 with a proportionate contribution to changes in modelled fares. 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 nor the ICAO CORSIA will provide), then that restraint will not be achieved in the real world. As the AEF submission notes, *“While there is a high-level agreement to implement CORSIA, much of the detail that will determine its environmental integrity is still being debated and cannot be taken as offering a guarantee of effective carbon mitigation, while the EU ETS for aviation has been scaled back to cover only intra-EU flights for the foreseeable future.”*

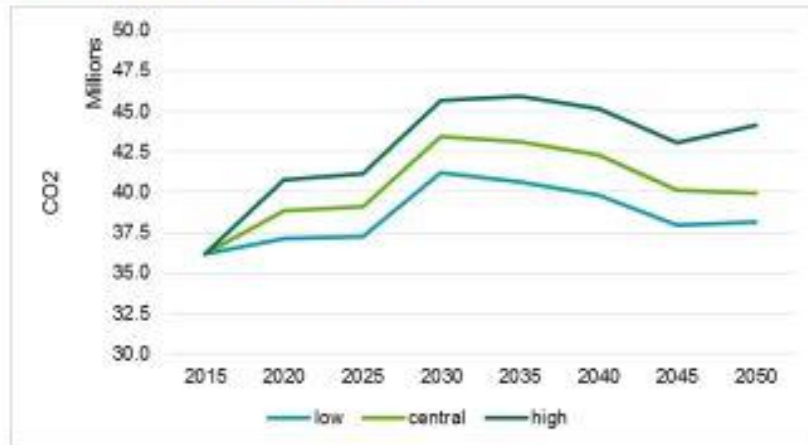
We note that the 2017 forecast acknowledges that “fuel efficiency influences air fares. Modelling the turnover of the future aircraft fleet changes the fuel and carbon cost elements of air fares, as new generations become increasingly fuel efficient”. However we are concerned that this fails to acknowledge the critical interaction where increasing fuel efficiency feeds through via the low-cost business model into lower fares, higher demand, and thus higher emissions.

15. 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. Therefore in the case of aviation carbon, each year’s emissions up to 2049 that is permitted to exceed the 37.5MtCO₂ planning assumption, without any upper limit, will 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.

16. The 2017 forecast allows an approximate assessment of that exceedance based on the ‘Central’ line in figure 8.1 (LHR-NWR) reproduced below.

⁸ Ricardo Energy & Environment report on *Carbon Abatement in UK Aviation* October 2017

LHR Northwest Runway



The line rises above the 37.5 level almost immediately after 2016 and stays there throughout the period to 2050, making the amount of exceedance 'under the graph' easily visible.

Calculating from this figure shows an exceedance on top of the 37.5MtCO₂ CCC planning assumption of around 65MtCO₂ from 2016-50. The total amount of aviation carbon emissions over that period is forecast to be nearly 1.25 giga tonnes. 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, the 2017 forecasts project that aviation emissions will be around 43MtCO₂, compared to CCC's 'Total Transport GHG Emissions Central 2030 projection' of 68Mt for all domestic transport.⁹

17. This confirms our position that it is unsustainable to maintain a policy of continually expanding aviation carbon as a proportion of the total UK carbon budget. As an example of this point we refer to the Carbon Brief analysis of October 2016 made following the Paris Agreement with its intended tightening of the global carbon budget, that aviation would consume half of the UK's carbon budget by 2050, even if the sector's emissions growth is constrained.¹⁰ Whilst its calculations were based on the higher CO₂ projections of the 2013 aviation forecasts, it also made the reasonable assumption of a probable tightening of the UK 2050 target.

18. The detailed work of UK CCC has sought to identify some of the consequential implications: *"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."*¹¹ For the total UK carbon budget, it identified "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" and also a Maximum effort scenario for aviation in which emissions are 15% lower than 2005 levels. In the Maximum scenario the CCC planning assumption of 37.5 MtCO₂ would be reduced to 32MtCO₂.

19. The implications for policy makers from these tightening numbers are clear and stark. With CCC noting yet again that *"it is less clear how to avoid emissions in other sectors, in particular from*

⁹ Campaign for Better Transport calculations from 2017 Forecasts figure 8.1 LHR-NWR, [CCC](#) for CB5, and CCC [Sectoral Scenarios for CB5](#) figure 5.12. The latter double counts around 1.75MtCO₂ of domestic aviation emissions.

¹⁰ Carbon Brief: Analysis: Aviation to consume half of UK's 1.5C carbon budget by 2050 (October 2016)

¹¹ UKCCC: UK climate action following the Paris agreement (October 2016)

agriculture, aviation and some parts of industry”, it cannot be a responsible course of action in 2017 for DfT to continue to promote the unconstrained expansion of air travel. This 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 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. The strategy notes a projected cumulative shortfall for the total UK carbon budget of 167MtCO₂ by 2032.

Table 2: Performance against carbon budgets¹³⁰

		Carbon Budget				
		1 2008-12	2 2013-17	3 2018-22	4 2023-27	5 2028-32
Budget, cumulative emissions, Mt		3,018	2,782	2,544	1,950	1,725
Average reduction vs 1990 emissions, %		-25%	-31%	-37%	-51%	-57%
Existing policies	Projected emissions, cumulative emissions, Mt	2,982 actual	2,650 E	2,453 E	2,096 E	1,972 E
	Result vs. Budget, %	-1.2%	-4.7%	-3.6%	+7.5%	+14.3%
Existing and new policies and proposals ¹³¹	Projected emissions, cumulative emissions, Mt	2,982 actual	2,650 E	2,453 E	2,066 E	1,892 E
	Result vs. Budget, cumulative emissions, Mt	-36	-132	-91	+116	+167
	Result vs. Budget, %	-1.2%	-4.7%	-3.6%	+6.0%	+9.7%
	Cumulative surplus (+) or deficit (-), Mt		+132	+223	+107	-60

20. In May 2017, we concluded (see appendix) that the 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.

21. The revised 2017 aviation forecasts seemed at first glance to have removed the carbon constraint on future airport expansion, based on a purely temporary suppression of demand: however we welcome the fact that they provide the first evidence in favor of an essential policy framework that seeks to absolutely decouple aviation demand from carbon emissions.

22. Therefore we reaffirm still more strongly our previous conclusion that, before the NPS can be approved, a government aviation carbon policy framework has to be in place: this is to ensure that the UK’s overall climate mitigation framework is not destabilised, and other economic and social sectors are not disadvantaged by an accelerated exhaustion of the UK’s cumulative carbon budget to 2050, caused by increasing, rather than decreasing, aviation emissions.

Surface transport implications

23. We are also concerned that the revised draft NPS continues to understate the scale and cost of the necessary surface transport connections required to make expanded airport capacity viable.

We welcome the proposal in the draft NPS that applicants will be required to agree modal shift targets and produce plans for their delivery (5.8) with proposed targets to achieve a public transport mode share of at least 50% by 2030, and at least 55% by 2040 for passengers, and a 25% reduction of all staff car trips by 2030, and a reduction of 50% by 2040 from a 2013 baseline

level.1 (5.16). However without clear enforcement of such targets, the NPS fails to ensure that airport operators play their part in delivering modal shift among airport passengers and workers.

24. The NPS asserts that “the airport scheme promoters have pledged to meet the cost of surface access schemes required to enable a runway to open” (3.38) however that is not borne out by the continued discrepancy between the funding offered by the promoters of the Heathrow third runway, and that identified by Transport for London and others. There is therefore a risk of significant extra calls for public funding to pay for necessary surface access links to enable the third runway and the associated terminal, and especially for the infrastructure and services needed to meet air quality standards, as promised by the airport and the Government. In these circumstances, the Government would find itself forced to channel extra transport spending to London, against its stated wish to rebalance the economy and increase funding to regions outside London and the South East.

25. A surface transport strategy is also necessary to achieve compliance with air quality targets and contribute to CO2 reduction targets. Measures that should be considered, yet are absent from the NPS, include a Heathrow congestion charging zone and the introduction of workplace parking levies for airport employees.

25. A comprehensive and fully funded surface transport strategy, with milestone targets, should be a prior requirement for the NPS. This is necessary to help reduce the overall environmental impacts from the transport sector; relieve environmental impacts on surrounding communities; and improve access to jobs. As currently set out, the NPS leaves a real risk that essential surface transport links will be delivered late in the day and at public expense. This further undermines the case for Heathrow expansion.

Carbon analysis prepared for Campaign for Better Transport by Anthony Rae

December 2017

Campaign for Better Transport's vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

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Appendix: Summary of May 2017 Consultation Response

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'.

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.

- 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 in 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.