

# Draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England

## Department for Transport

### Response from Richmond Heathrow Campaign

25 May 2017

#### Introduction

1. This is the written response of the Richmond Heathrow Campaign (RHC) to the Department for Transport (DfT) on its consultation titled '*draft Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England*'. RHC is responding separately to the DfT consultation on '*UK Airspace Policy Consultation - A framework for balanced decisions on the design and use of airspace*'. There is overlap between the NPS and Airspace consultations.
2. RHC represents three amenity groups in the London Borough of Richmond upon Thames: The Richmond Society, The Friends of Richmond Green, and the Kew Society, which together have over 2000 members. The members of our amenity groups are adversely affected by noise from Heathrow Airport's flight paths, poor air quality and road and rail congestion in west London. We acknowledge Heathrow's contribution to the UK economy and seek constructive engagement in pursuit of a better Heathrow. We are an active participant in the Heathrow Community Noise Forum.
3. Our premise is that it would be preferable to aim for a better Heathrow rather than bigger Heathrow and to capitalise on the world beating advantage of London's five airports, in particular by improving surface accessibility to all five airports, which would be a major benefit to users. Our approach, as explained below, is to continue supporting the case for no new runways in the UK which is a position fully supported by the Airports Commission's evidence in comparing the Do-minimum option and the Heathrow Northwest Runway Option (NWR).
4. Over recent years we have undertaken extensive research on Heathrow and submitted a large number of papers to the Airports Commission (the Commission) and others - all of which can be found at [www.richmondheathrowcampaign.org](http://www.richmondheathrowcampaign.org) and [www.rhcfacts.org](http://www.rhcfacts.org).
5. In preparing our response we have taken into account the Final Report of the Airports Commission 2015, the subsequent publications by the Government and particularly those published along with the announcement of the Government's preferred option in October 2016. We have also taken into account reports by the Parliamentary Treasury and Environmental Audit Committees.
6. We have not had time to appraise in detail the recently published National Air Quality Plan. We are very concerned that the draft NPS is being proposed and consulted on without the timely availability of this and other vital material still to be published. The following list of still to be published material is probably not complete: Demand Forecasts; Carbon Emissions Reduction Plan; Definitive flight paths; Surface Access Plan; National Aviation Policy Framework Update; WebTag valuation update; Heathrow CAA Economic Regulation . There are many issues of great importance not so far dealt with adequately and may not be for a considerable time, if at all - such as binding conditions from Heathrow. Some of these will not be available until after the NPS is presented to parliament for approval late 2017/early 2018.

7. It is clear from the current consultation and pronouncements by the Government that it intends to close down consideration of many important issues upon determination of the NPS and therefore before proper consideration of important issues by the public and parliament. This is irrational, irresponsible and undemocratic. Added to this is the fact that as we have robustly pointed out to the Government in letters to the Prime Minister and Secretary of State for Transport that the Airports Commission's recommendation to expand Heathrow ignores much of the Commission's own evidence. The Government has not recognised this major failing when using the Commission's illogical conclusion as the starting point for concluding its preference for a northwest runway at Heathrow.
8. The cart before the horse approach is very much how the Commission handled its investigation. It closed off the Do-minimum option at the Interim Stage thus excluding what we believe to be the best option in the final option appraisal.
9. We are also concerned at the very obvious partiality of the Government in supporting Heathrow and the NWR scheme. This is clear not only from the public statements but from the current consultation and in particular the recent road shows which were a one-sided promotion of the NWR scheme. *The Statement of Principles* between the Secretary of State and Heathrow Airport Limited sets the scene for collaboration without transparency. It is disheartening to witness the bias in the Commission's recommendation and in the draft NPS and in the decision process. Conversely, the shareholders of Heathrow, of whom 90% reside overseas, must be heartened by the Government's support and looking forward to the returns that the UK taxpayer will inevitably be supporting. In addition, in our view based on the Commission's evidence, the NWR scheme will harm the UK aviation market and regional economies.
10. Our preferred option is to support a better Heathrow and not a bigger Heathrow and to support the functioning of the aviation market without promoting the monopoly of a single airport in the south east at the expense of all other airports. According to the Commission's evidence this option is viable and the best option but as we know was buried at the Interim Stage. We would add to this Do-minimum option the benefit of significant improvement in the surface access infrastructure to all five London airports and where appropriate other UK airports so that passenger journeys and freight can be assured of improved access. We believe this would maximise the return to the UK within the sustainability constraints of climate change, air quality and noise.
11. We continue to believe that there is a high risk that the NWR scheme will not be delivered, if only because of the substantial tangible costs that make Heathrow by far the most expensive major airport in the world and one built on the false premise that Heathrow benefits the UK as its only hub, which the facts demonstrate is fiction.

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## Summary of our response

**Question 1:** We demonstrate the absence for need for another runway in the UK and also demonstrate the harm to the UK aviation market resulting from a 3<sup>rd</sup> runway at Heathrow. Most of the evidence is drawn from the Commission's published reports.

**Question 2:** We focus on the comparison of the Heathrow NWR option with the Do-minimum (no runways). We explain why we base our appraisal on the carbon capped case, which is contrary to the approach adopted without proper substantiation by the draft NPS. The NPS relies almost exclusively on the carbon traded case. Based on the Commission's carbon capped evidence in its Final report 2015 and an update by the DfT in October 2016, the NWR option results in a net present value loss of £4.6 billion over 60 years and a value for money ratio of 0.7, which according to DfT terminology is "poor". This return is no where near sufficient to justify the NWR option. We identify several over optimistic assumptions, such as the unjustifiable inclusion of a benefit of £6.2 billion from international-to-international transfer passengers, reduction in delays and under-estimated environmental costs of noise and air pollution. The under-estimate for the surface access costs necessary to provide adequate capacity to avoid air pollution and road congestion could be £5-£10 billion NPV or more. **We therefore believe the net present value loss of the NWR option is likely to exceed £15 billion.**

The positive NPV in the carbon traded case presented by the draft NPS ranges from £0.2 billion to £6.1 billion (compared to a loss of £4.6 billion in the carbon capped case). If the further adjustments referred to above were included in the carbon traded case, it would result in an NPV loss of between £5 billion and £10 billion or more, which is also far from sufficient to support the NWR option.

**Question 3:** This question seeks a response on NPS assessment criteria for the NWR option. We make some suggestions on the very crude assessment criteria proposed by the draft NPS. We are surprised that the question seems to relate only to the NWR option. Our understanding is that the consultation should be unbiased as to choice of option. We appreciate that the NPS, when finalised, should be capable of assessing the NWR option, but surely that does not mean it should not also be capable of assessing other options, which in our view should include the Do-minimum (no runways) option.

**Question 4:** This question is about surface access. Based on the Commission's evidence we demonstrate that given the near doubling of Heathrow's terminating passengers to 94 million per year (mppa) (2011-2040), the proposed increase in modal share of public transport from 40% to 55% still results in car passengers increasing from 31 mppa in 2011 to 42 mppa in 2040. Heathrow are promising no more cars on the road through either modal shift or various interventions such as charging. This would require a 67% modal share for public transport. We have serious doubts that behavioural change of this magnitude is feasible and doubt it has been achieved anywhere in the world. Similar analysis applies to staff and freight.

But there is another problem, which is that the public transport capacity for Heathrow would need to increase from 21 mppa in 2011 to 52 mppa in 2040 if the 55% modal share were achieved and to 63 mppa if the 67% modal share were achieved. This is a huge increase on top of the probable increase in background demand from London's population growth of over 25% by 2040. Notwithstanding the proposed increase in public transport capacity from Cross Rail (if it ever reaches Heathrow given the current disputes) and increased capacity on the Piccadilly Line and Western and Southern Rail access proposals, the total capacity will be way short of that necessary to provide an adequate service level for Heathrow and other destinations. Moreover, potential operating and funding problems with Western Rail and Southern Rail access projects add to the uncertainty. The investment needed to provide the extra public transport capacity, essential if road congestion and air pollution are not to rise and to provide adequate service levels and meet legal air quality limits, has been estimated by TfL to range between £15 billion and £20 billion.

In our view, the draft NPS fails to deal with the surface access use and capacity issues adequately and barely seems to recognise them. The amount and who will pay for the surface access investment necessary to facilitate reduced air pollution to below legally binding limits and provide adequate service levels on road and public transport has not been sufficiently dealt by the draft NPS. The mitigation steps proposed are not only insufficient but our confidence in their effective implementation is low.

**Question 5:** This questions deals with specific issues and mitigation and compensation relating to air quality, noise and carbon.

Air Quality is a substantial existing problem around Heathrow and it is not clear from the Government's publications that it can be adequately addressed so as to comply with legally binding air quality limits in terms of emissions, the effects on people and the timetable for emissions reduction. The draft NPS does not in our view provide a sufficiently robust basis for decisions to be made about the necessary improvements in air quality and the determination as to whether these are sufficient to enable the NWR scheme to proceed. We have not had time to review the recently published UK Air Quality Plan but from what we have seen we doubt it will deliver a sufficient reduction in emissions to allow the NWR scheme to proceed, at least until after 2030. The improvement in air quality depends very much on surface access and as we have said in Question 4 it is very doubtful the mode shift to public transport will be sufficient and even if it is, there will not be the capacity unless very substantial sums are invested, which at the moment do not appear to be forthcoming.

Noise objectives are inadequate as are the metrics for noise measurement and modelling. We have made some suggestions in our response to the Airspace Policy Consultation. It is questionable as to whether there is sufficient airspace to handle the expansion of Heathrow without over concentration of noise. Definitive flight paths will not be known until shortly before a 3<sup>rd</sup> runway opens in 2025 and we do not think the NPS can be applied until London communities are better informed and consulted.

Carbon emissions from aircraft in flight but also on the ground and arising from construction of a 3<sup>rd</sup> runway are increasing as fast as the growth in passenger travel. In our view assessment of airport expansion needs to be based on a carbon capped case and to consider the effect of expansion for the UK as a whole. We believe the NPS route is seriously at fault in not considering the carbon capped cases but also in effect seeking to rule out the Do-minimum (no runways) option which may be the only viable option to reduce the risk of adverse climate change.

We have examined the mitigation pledges for each of these environment issues and find them wanting. We find the NPS as inadequate in being able to assess the impact and mitigation of the environment issues.

**Question 6:** This question deals with the NPS, DCO and planning process and we only make brief comment. We explain that our response to Question 5 deals with the comments we wish to make on the subject.

**Question 7:** This question deals with the Appraisal of Sustainability. We comment on the list of topics and objectives in our response to Question 3 but also address objectives and mitigation in our responses to Questions 4 and 5.

**Question 8:** Other matters not raised elsewhere. None, thank you.

**Question 9:** Equalities. We have not commented.

## **The need for additional airport capacity (Ch 2 draft NPS)**

**Question 1. The Government believes there is the need for additional airport capacity in the South East of England by 2030. Please tell us your views.**

1. The draft NPS says there is a need for the NWR and relies on the Commission's estimates of the shadow cost of not expanding Heathrow. We do not accept there is a need for additional airport capacity in the South East of England by 2030 for the following reasons:

### **Climate Change Restriction on Growth in the number of flights and passengers.**

2. In its Final report-July 2015 the Airports Commission considered five scenarios for the future aviation market (the five scenarios are defined by the Airports Commission on page 14 of its Strategic Fit Updated Forecasts). Each of which was examined on the assumption that CO2 emissions are dealt with by either restricting aviation growth through a carbon cap or alternatively by an emissions trading scheme, whereby 'gross' CO2 emissions from flights would not increase 'net' global CO2 emissions, since compensatory offsets from elsewhere would be purchased under the scheme.
3. In its Final report the Commission focussed its commerciality and environment tests on the 'Assessment of Need' carbon capped scenario, in which demand is primarily determined by central projections of the OBR, OECD and IMF. The Climate Change Committee's planning recommendation is that UK aviation's CO2 emissions should be no more than the 37.5 million tonne limit and that this therefore constrains demand to 386 million passengers and 3,039,000 flights in 2050.
4. The DfT has said in its Sensitivities Report, October 2016, that it prefers the carbon-traded response to climate change. We do not agree with this view. The Environmental Audit Committee and Climate Change Committee (CCC) and others have expressed serious reservations in respect of the DfT's over-optimistic and incoherent approach to carbon. It is inexplicable how the DfT can dismiss the Commission's carbon capped forecasts that formed the basis of the Commission's Final Report 2015. The Government has yet to publish its Emissions Reduction Plan, the failure of which is another case of determining the NPS on sifting sands. The burden of proof remains with the Government on how it will reduce the very substantial impact of aviation carbon other than by demand management with a carbon cap. We therefore submit our response to the draft NPS on the basis of the Commission's carbon capped evidence detailed as follows.

### **Commission's evidence demonstrates there is no need for additional runway capacity**

5. The Commission's Assessment of need carbon capped scenario constrains demand to 386 million passengers and 3,039,000 flights in 2050. There is sufficient capacity to satisfy this demand without any new runways (i.e. the Do-minimum option), as shown by the Commission's evidence summarised in the following table.

continued/

Passenger demand (millions) constrained by CO2 emissions ceiling. Do-minimum option - Assessment of Need carbon capped - no new runways								
	Total Passengers including I to I transfers				Terminating Passengers excluding I to I transfers			
	2011	2050	Increment 2011 to 2050		2011	2050	Increment 2011 to 2050	
Heathrow	70	94	24	33%	52	86	34	65%
Other London airports	65	107	42	65%	63	107	44	70%
Total London	135	201	66	49%	115	193	78	68%
Regions	83	185	102	123%	83	184	101	122%
Total UK passengers	218	386	168	77%	198	378	180	91%

Source: Airports Commission Strategic Fit Updated Forecasts. Other London airports: Gatwick, Stansted, Luton & City. There are rounding differences.

Terminating passengers start and end their journey in the UK. International to international (I to I) transfer passengers start and end their journey overseas.

6. **Heathrow is not full.** In 2016 there were around 76 million passengers a year using Heathrow compared to runway capacity of 94 million shown in the above table. Heathrow is not full - growth in Total Passenger numbers is set to continue without NWR expansion through use of larger aircraft and higher occupancy. The Commission estimated Heathrow's average aircraft passenger loads would grow from 159 today to 202 by 2050.
  
7. We would remind the Department that the decision to approve the development of a fifth passenger terminal at Heathrow Airport was taken on the basis that Heathrow with 480 000 air transport movements per year and five terminals in full use would reach its forecast passenger capacity of 95 million per year by the end of 2016. But according to the Civil Aviation Authority's statistics, Heathrow handled just under 76 million passengers in 2016. This represents a shortfall of 19 million passengers - twenty per cent - between the forecast capacity and the forecast demand (with the percentage even higher between forecast and actual increases since the base year). And yet the impression created by the aviation sector is that Heathrow is somehow 'full'. The Department should consult on whether the errors in forecasting when the fifth terminal was approved were errors in capacity or demand - or both - in order to ensure that forecasts of capacity and demand through to 2030 do not involve errors of a similar magnitude.
  
8. **Other London Airports are not full.** According to the Commission, London's four other airports all have spare runway capacity. In the Do-minimum option, Stansted flights reach 81% of runway capacity and Luton flights reach 73% by 2050. But Gatwick and City Airport reach runway capacity in terms of flights before 2050. The four airports are at 88% of capacity in terms of flights by 2050. But, as with Heathrow, capacity limits in terms of flights are overcome by the passenger numbers increasing through use of larger planes and loads. Passenger numbers at London's four airports (excluding Heathrow) grow by 65% between 2011 and 2050. Terminating passenger numbers grow by 70%.

9. It is important not just to focus on Heathrow but London as a whole with five major airports. London's five airports served around 135 million passengers in 2011 which was more than any other city in the world. Frankfurt served 35 million, Amsterdam 41 million and New York 105 million, for example. Together the five airports probably provide the best air service of anywhere in the world and it is misleading of the draft NPS to compare just Heathrow.
10. **Capacity is released by reducing International-to-International Transfer Passengers.** In the Do-minimum Case the Commission also forecast a reduction in International-to- International transfer passengers from 18.5 million a year in 2011 to 8 million a year by 2050, as shown in the above table. The number of terminating passengers at Heathrow is therefore forecast to rise by 34 million or 65% to 86 million between 2011 and 2050. We argue that by removing the International-to- International transfer exemption from air passenger duty this decrease would be encouraged and free up as much as 30% of Heathrow's capacity for more passengers and destinations.
11. **Ample Regional Airport capacity.** Runway use in the UK regions outside the south-east, so excluding London's five airports, was 980,000 flights in 2011. According to the Commission these increase to 1,841,000 flights by 2050 (39% of regional runway capacity). Regional passenger numbers grow by 123% to 185 million passengers by 2050. There is substantial unused airport runway capacity across the UK through to 2050 in the Do-minimum option, based on the demand constrained by limits placed on carbon capped emissions.
12. **Capacity made available by reducing misuse of slots.** Heathrow is a high frequency airport with many popular routes but often less than full use. Evidence of three quarter empty planes to and from New York is an example of misuse of existing capacity. We understand BA has flown planes around empty to retain its slots at Heathrow.
13. **Resilience is not at risk.** Heathrow publicly claims to be able to raise traffic throughput by 25,000 flights a year without impact on resilience of the hourly throughput.

#### **Heathrow's expansion is harmful to the UK aviation market according to the Commission's evidence**

14. The issue at hand is not just a question of need. If Heathrow were expanded it will actually harm the UK aviation market.
15. **Heathrow expansion diverts growth from the rest of the UK and reduces overall UK growth.** By 2050 growth of terminating passengers at all UK airports, excluding Heathrow, is estimated to be reduced by 58 million a year as a result of Heathrow expansion (233 million terminating passengers compared to 291 million). The net loss for the UK, including Heathrow's additional 19 million terminating passengers, is 39 million passengers (338 million terminating passengers compared to 377 million).
16. **Aviation growth diverted to Heathrow from the rest of the UK reduces competition and concentrates growth in the relatively overheated southeast.** The diversion of growth in passengers to Heathrow from the rest of the UK translates into reduced growth in flights at virtually all UK airports. As examples, the Commission estimated the number of flights in 2050 at Birmingham airport would be reduced from 206,000 to 113,000 (45%) (2011 – 86,000 flights), comparing no Heathrow expansion with expansion. Growth at Luton would be reduced by 35%, Glasgow: 22%,

Bristol: 26%, East Midlands: 20%, Newcastle: 11%, Belfast International: 10%, Liverpool: 11%, Manchester: 10%, Stansted: 7% and Gatwick: 7%. Total UK flights in 2050 would be reduced from 3.039 million to 2.891 million (i.e. by 5%) as a result of Heathrow's expansion. Heathrow ends up serving 70% of the long-haul passenger market and 35% of UK passengers with many other UK airports left with substantial unused capacity. We submit this concentration at Heathrow negatively impacts airport connectivity and competition. It has a negative impact on the UK as an aviation hub and on most UK airports, some of which may not survive, and on local economies and employment. This outcome works against the Government's aim of re-balancing the UK economy.

17. **The benefit claimed for increased long-haul business passengers, resulting from Heathrow expansion, is not supported by the evidence.** A main economic benefit from air travel is trade enhanced by long-haul business passengers. The claim by the Commission of the increase in long-haul business travel and its benefit to the UK economy appears not to be supported by any evidence. There is evidence from the Commission for business passenger numbers and long-haul passenger numbers but not the two combined. What evidence there is suggests the total number of long-haul business passengers (to and from the UK and overseas) may reduce across the UK as a result of Heathrow expansion, compared to no Heathrow expansion.
18. **Heathrow's expansion reduces the number of air inbound tourists to the UK.** Another economic benefit from air travel is inbound tourism. According to the Commission, by 2050 Heathrow expansion adds at Heathrow 4 million foreign resident leisure passengers to/from the UK compared to the no expansion case. But there would be losses of 2 million at Gatwick, 2 million at other southeast airports and 7 million in the regions. The net loss to the UK would be 7 million foreign resident leisure passengers (from 59 million passengers a year to 52 million), compared to no Heathrow expansion. We submit this would result in a material loss to the UK economy and balance of payments. Inbound tourists spent £22 billion in 2014 and 73% reached the UK by air.
19. **Heathrow's expansion results in no growth in number of long-haul destinations from the UK.** The Commission forecasts that expansion of Heathrow would result in the number of long-haul destinations at Heathrow increasing from 92 in 2011 to 98 in 2050 compared to 89 without NWR expansion. But the number of long-haul destinations across the UK increases from 107 to 130 in both the expansion option and no NWR case. Therefore, UK connectivity in terms of number of long-haul destinations is not improved by Heathrow expansion. What does increase is the frequency of flights to already popular destinations, e.g. New York, which we submit is of limited economic benefit to the UK.
20. **Heathrow's expansion, compared to no runway expansion, results in a negligible change to the number of domestic destinations.** The number of domestic destinations to/from Heathrow is reduced according to the Commission from 7 in 2011 to 3 by 2050 in the no NWR case and to 4 with expansion.
21. **Heathrow's expansion results in growth in short-haul destinations at the expense of other UK airports.** According to the Commission, Heathrow adds 37 new short-haul destinations, compared to no runway expansion, resulting in 96 short-haul destinations by 2050. This is offset by reduced connectivity elsewhere in the UK: the overall number of short-haul destinations from the UK is reduced by 3, compared to no Heathrow runway expansion.
22. **50% of new runway capacity is used for International-to-International transfers for no economic gain.** The Commission estimated in its preferred scenario (carbon capped) that around 50% of the NWR capacity at Heathrow would be used for international-to-international transfers. Heathrow would end up in 2050 with 30 million international-to-international transfer passengers out of 135 million passengers. In the Do-minimum option the corresponding figures would be 8 million and 94



million. This means there would be 22 million additional transfers out of an additional 41 million passengers with the NWR option.

The best kept secret is that Heathrow has little value as a hub airport. The Commission says international-to-international transfers provide little economic value to the UK (a view supported by consultants Oxera and PWC). They do not leave the airport. Moreover, unlike passengers terminating in the UK they are exempt from Air Passenger Duty. We are not referring here to domestic transfers.

The claim that Heathrow is a hub airport that needs transfers to make routes viable is fiction. Evidence from the CAA and DfT demonstrates that in 2011, for example, only 2% of transfers were on Heathrow's thin long-haul routes and only 7 out of 44 thin long haul routes had any international-to-international transfers. For the most part, the transfers are on popular routes. These transfers contribute to a substantial environmental cost in terms of noise pollution and they use up capacity at the expense of UK passengers and they compete with UK business passengers.

The above evidence is contained in our analysis in a 2013 submission to the Commission, which formed the basis of our Long-term proposal for UK aviation upon which the Commission was then consulting. The Commission did respond to our analysis in its Interim Stage Report but completely misinterpreted the evidence. We examined the full list of Heathrow's 191 international destinations and the number of terminating and international-to-international transfer passengers using statistics from the CAA and DfT.

In addition to the above conclusion that thin destinations do not rely on international-to-international transfers to any significant extent, the evidence also demonstrated that transfers are involved with 100% of the high density destinations, 67% of medium density destinations and 7% of low density destinations. This we believe confirms that transfers for the most part add frequency to high frequency destinations and not to the viability of thin destinations. This is illustrated by the diagram in [Annex 1](#) which shows Heathrow international passenger density and service frequency by destination during 2011 totalling 64.6 mppa. This total is divided into terminating passengers (43.7 mppa) shown in red and transfer passengers (20.9 mppa) shown in green. The destinations are divided into high, medium and low density destinations as defined by their annual passenger numbers. As an example, New York (JFK) had the highest density with 1.8 mppa and transfers of 0.9 mppa (33%) and service frequency of 34 arrivals and departures a day.

23. **Heathrow expansion ensures Heathrow is the most expensive major airport in the world.** According to the Commission, Heathrow's aeronautical charges to airlines rise from £22.53 per passenger in 2014 to £31.20 in 2035 with expansion or around £3.7 billion (£ real 2014). This compares with around £9 at Gatwick, £12 at Schipol, £8 at Dublin and Manchester and £11 at New York JFK, for example. The high cost of Heathrow is partly due to facilities for International-to-international transfers, which we submit are of questionable value to the UK. The claim by Heathrow and the Government that there will be no increase in charges seems fanciful given the cash-flow modelling presented by the Commission, from which the above figures are taken. Heathrow's promise not to raise fares seems unrealistic and inconsistent with the Commission's evidence.
24. **Updated Aviation demand forecasts.** The DfT has deferred publication of its demand forecasts. We believe it is unreasonable to consult on an NPS and seek response on demand issues as in this Question 1 without the updated DfT forecasts.

## Summary Key Points on Question 1

1. The Climate Change Committee recommends that aviation growth be demand managed through a carbon cap. The DfT rejects this with little explanation and a promise to publish sometime later an Emissions Reduction Plan. The burden of proof lies with the DfT and in its absence and until otherwise proven, we believe the draft NPS should be based on a carbon capped future for UK aviation,
2. The Commission's evidence for the carbon capped Assessment of Need scenario demonstrates in Dominium option (no additional runways) that there is sufficient capacity in the South East to satisfy demand through to 2050,
3. There are around 76 million passengers a year currently using Heathrow compared to runway capacity of 94 million. Heathrow is not full - growth in Total Passenger numbers is set to continue without NWR expansion through use of larger aircraft and higher occupancy.
4. Heathrow claims to be able to raise traffic throughput by 25,000 flights a year without impact on resilience of the hourly throughput.
5. Heathrow is a high frequency airport with many popular routes but often less than full use. Three quarter empty planes to and from New York is an example of misuse of existing capacity.
6. Were international-to-international transfer passenger numbers to be reduced (for example, by removing their Air Passenger Duty exemption) then this could free up 30% of Heathrow's capacity. Heathrow is not efficiently full,
7. The Commission says international-to-international transfers provide little economic value to the UK,
8. The claim that Heathrow is a hub airport that needs international-to-international transfers to make routes viable is fiction as demonstrated by evidence from the CAA and DfT,
9. The Commission's evidence demonstrates that providing extra capacity at Heathrow will significantly harm the UK aviation market as summarised below. Even if capacity were needed, Heathrow capacity is the wrong type of capacity:
  - a. Heathrow expansion reduces overall UK aviation growth and diverts growth from the rest of the UK at the expense of regional balance.
  - b. Fifty percent of the new Heathrow runway would be used by international-to-international transfers that add little economic benefit to the UK.
  - c. Heathrow expansion has a negative impact on the two main sources of economic benefit: it reduces growth across the UK of inbound tourism and of long-haul business passengers that bring trade to the UK.
  - d. Heathrow expansion results in no material change to the number of destinations from the UK or domestic destinations and hence no improvement in connectivity.
  - e. Air travel would be concentrated with limited competition at a single airport, Heathrow - the most expensive major airport in the world.

### **The Government's preferred scheme: Heathrow Northwest Runway**

**Question 2: Please give us your views on how best to address the issue of airport capacity in the South East of England by 2030. This could be through the Heathrow Northwest Runway scheme (the Government's preferred scheme), the Gatwick Second Runway scheme, the Heathrow Extended Northern Runway scheme, or any other scheme.**

1. Our preferred option is to support a better Heathrow and not a bigger Heathrow and to support the functioning of the aviation market without promoting the monopoly of a single airport in the South East at the expense of all other UK airports. This option is the Do-minimum option (no additional UK runways). According to the Commission's evidence this option is viable and the best option but as we know was unjustifiably buried by the Commission at the Interim Stage. We would add to this a proposal for investment in infrastructure surface access to London's five airports and to others as appropriate, so that passenger journeys and freight can be assured of improved access. We believe this approach would maximise the return to the UK within the sustainability constraints of climate change, air quality and noise.
2. Our response to Question 1 sets out the reasons with detailed evidence from the Commission for our preferred option in terms of the aviation market. The aviation market is clearly significantly worse off as a result of the NWR expansion compared to the Do-minimum option.
3. The aviation market in turn impacts the UK economy and the financial viability of the project and Heathrow. The NWR expansion also negatively impacts the environment in terms of carbon, air quality and noise plus other sustainability issues. It provides a social benefit in terms of local employment but a cost in terms of people losing their homes and probably a loss of jobs elsewhere in the UK due to its negative impact on the aviation market.
4. Our answer to this question 2 concerns the economic and financial appraisal of the NWR scheme compared to the Do-minimum option. Details of the environmental and social issues are dealt with in later questions.

### **WebTag's over-valuation of the NWR option**

5. The Commission's WebTag valuation was summarised in Table 7.1 of the Commission's Final Report, July 2015. The Net Present value of the Carbon Capped case was estimated to be £1.4 billion and for the carbon traded case £11.8 billion.
6. In October 2016 the Government announced its preference for the Heathrow NWR scheme and published a number of supporting documents including one titled '*Further Review and Sensitivities Report - Airport Capacity in the South East*'. This report updated Table 7.1 in the Commission's report for the carbon traded case but not for the carbon capped case.
7. There has been no attempt by the DfT to update the carbon capped case and the link in the Sensitivities Report to the carbon capped case takes one back to the Commission's unamended evidence supporting Table 7.1 of its Final Report. The DfT has made no attempt to justify its dropping of the carbon capped case and we comment on this at the start of our response to question 1. The DfT's position is wholly unjustified.

8. The DfT's Sensitivities applied to the carbon traded case reduce the NPV of £11.9 billion to a range of 0.2 billion to 6.1 billion as shown in Table ES.2 of the DfT's Sensitivity Report, 2016. According to the DfT this is largely due to a reduction of the Wider Economic Benefits of £11.5 billion (included in the Commission's figures) to between £2.0 billion to £3.9 billion so as to avoid double counting. There is every reason to reduce the carbon capped case by similar amount and in the absence of detailed calculations being available, we suggest a reduction of £6 billion which turns the carbon capped economic net present value from a gain of £1.4 billion to a **loss of £4.6 billion**.
9. Furthermore, we believe the several over-estimates to calculations for the original £1.4 billion value remain and are highlighted below, including the under-estimate for surface access of £5-£10 billion NPV and over-estimate of the benefit of international-to-international transfers of £6.2 billion NPV. Also, the environmental costs have been significantly under-estimated, as explained below.
10. The net result is that the value of the carbon capped expansion of Heathrow seems likely to be hugely negative with a net present value loss in **excess of £15 billion**.
11. The net loss of £4.6 billion of present value over 60 years is small in relation to the UK GDP and is with the margin for statistical error. But is material and it is insufficient to absorb the downside risks.
12. The value for money ratio of 1.1 based on Commission's carbon capped case in its Final Report is bordering on "poor" in the DfT WebTag guidelines. The adjusted present value of £4.6 billion loss (see above) results in a value for money ratio of 0.7. A £15 billion loss results in a negative value for money ratio. The value of money ratio is calculated as Net Social Benefit divided by Present Value Cost. These terms are discussed below.
13. **The NWR scheme is not justified by the updated £4.6 billion loss and even greater £15 billion loss with adjustments.**
14. The positive NPV in the carbon traded case presented by the draft NPS ranges from £0.2 billion to £6.1 billion (compared to a loss of £4.6 billion in the carbon capped case). If the further adjustments referred to above were included in the carbon traded case, it would result in an NPV loss of between £5 billion and £10 billion or more, which is also far from sufficient to support the NWR option.
15. The following analysis examines the Commission's evidence for the original £1.4 billion value of a carbon capped Heathrow expansion (i.e. before the suggested £6 billion negative adjustment for the exclusion of Wider Economic Benefits as suggested in the DfT's estimates of adjusted economic value). Details are in Table 7.1 of the Commission's Final Report 2015.
16. The WebTAG transport evaluation model used by the Commission estimates the incremental benefit of the NWR expansion compared to the Do-minimum option. The total benefits include a **Consumer Surplus** based on benefits to passengers such as cheaper flights offset by reduced airline and airport profits; an increase in government revenue; benefit from a reduction in delays and local and wider economic benefits. Offsetting the benefits are the **monetised environmental costs** for noise, air quality and carbon emissions. The total present value benefits less environmental costs results in a 'Net Social Benefit' (NSB) of £17.4bn according to the Commission. The scheme's capital expenditure and an estimate for surface access costs results in Present Value Costs (PVC) of £16.0bn. The resulting overall net incremental benefit from the NWR expansion is estimated

therefore by the Commission in its preferred carbon capped scenario as £1.4 billion (NSB-PVC). The value for money ratio is 1.1 (£17.4 bn/£16.0 bn NSB/PVC).

17. There are a number of non-monetised benefits and costs: - surface access and local economy are said by the Commission to be positive; quality of life - neutral; and community, place and water and flood risk - negative. Included in these is the negative impact of demolishing over 1,000 homes.
18. We raise the following questions on the WebTAG results, which suggest that on a risked basis the net benefit of the NWR expansion is likely to turn the £1.4 billion value substantially negative (for the most part we refer to the Commission's evidence):

#### **Consumer Surplus.**

19. We have already outlined in our response to Question 1 the negative impact of Heathrow expansion on the UK aviation market.
20. International-to-international transfer passengers are a major use of expanded capacity but of little value to the UK economy. The Commission gives weight to the importance of international-to-international transfers supporting new long-haul destinations with potentially rich business opportunities. However, as discussed in question 1, we question whether these transfers support thin destinations and we question the diminishing returns from adding frequency to already popular routes serving the leisure market and other high frequency routes. The WebTAG model attributes £6.2 billion of benefit to the transfer passengers but this WebTAG figure seems overstated; the transfers appear to be excluded explicitly by PWC in their valuation provided to the Commission because they are said by PWC to add no value to the UK. Oxera also confirm no value from international-to-international transfers in their report.
21. We have already shown in our response to Question 1 that the Airports Commission calculated that Heathrow expansion would raise aero-charges and assure Heathrow continues as the most expensive major airport in the world. It is not credible that passenger fares and freight charges will reduce as a result, even if there is more airline competition. Furthermore, an NWR at Heathrow is forecast by the Commission to fill up rapidly. But the Commission has not made clear why delays caused by existing capacity constraints do not re-appear and in magnified form given the larger airport, and why this would not negate the benefit from any reduction in the delays. Also, why should the shadow costs from not expanding Heathrow not reappear.

#### **22. Environmental costs**

##### Noise cost

- i. We question whether the noise cost is not substantially under-estimated by the Commission. Modernisation of London's airspace using new technology is in serious doubt because of the community's resistance to change in overflight and the noise consequences and the unproven noise benefits of introducing multiple flight paths and respite. Redesign is complicated by the substantial forecast growth in London's population. Heathrow, the DfT, NATS, and the CAA have not yet been able to formulate any meaningful airspace modernisation plans, let alone the far more difficult scenario including Heathrow expansion. We comment on this situation in our response to the DfT's consultation on Airspace Policy. To increase the number of flights by 50% probably is impossible in these circumstances and to approve Heathrow expansion without any plans on how the airspace capacity and efficiency can be upgraded is a huge shot in the dark, potentially making the expansion undeliverable.
- ii. It appears that the Commission has not applied the current London-wide flight path re-design

and the claimed benefits therefrom to the Do-minimum option. Thus the incremental noise cost of £1.5 billion could be substantially understated. In effect apples and oranges have been compared.

- iii. It is unclear as to whether the cost Heathrow says it is willing to pay for mitigation (double glazing, etc.) is fully included in WebTag.
- iv. The Commission has applied a cost of annoyance, sleep disturbance, etc. caused by noise to the number of people affected by the NWR expansion. The Commission estimates a wide range of outcomes (from zero to £15.5 billion), depending on the unit cost, flight path design and number of people affected. The chosen estimate is at the lower end of this range. There is a risk it substantially underestimates the noise cost.
- v. The £1.5 billion noise cost works out at a unit cost per person affected of around £150 per year, which seems low, especially when there could be over 300,000 people newly affected by noise. The cost is assumed to be the amount a person is willing to pay to avoid the noise.
- vi. The cost of noise effect on health and quality of life is considerable. The CAA and others have published extensive evidence of the adverse effects of noise on cardiovascular health, sleep and annoyance in those living near airports, including Heathrow.
- vii. The £1.5 billion noise cost appears to be based on around 500,000 people being affected by Heathrow's NWR expansion. But at the World Health Organisation noise guideline levels of 50 decibels averaged over 16 hours (the onset of moderate annoyance), the population affected could reach 1,500,000 people.

#### Air Quality cost

The surface access cost, estimated by the Commission to be an un-discounted £5.7 billion, is estimated by TfL to be up to £20 billion if adequate road and rail capacity is to be provided. Without the additional investment, road congestion is likely to be much higher with a knock-on effect on air quality, which already exceeds legal limits. Also, it is unlikely there will be sufficient public transport capacity. Even if less than £20 billion, it seems very unlikely the government would wish to fund the surface access costs, although Heathrow will argue it is mainly for background demand unrelated to the airport. If the surface access costs were say £10 billion to £15 billion then the additional NPV cost (assuming £5.7 billion is already in the costs) would be £5 billion to £10 billion. The Commission seems to have substantially under-estimated road congestion and the quantity of pollutants, thus making it even harder to comply with air quality standards. NWR expansion could be undeliverable either because of the excessive pollution or because the cost of mitigation cannot be financed either privately by the airport or by the State. The excessive pollution from road vehicles remains substantially unresolved. The problem derives from surface access by passengers, staff and freight.

#### **23. The NWR scheme may be undeliverable**

Heathrow expansion may not be financially deliverable without substantial State aid. The Commission's base case financial model for Heathrow forecasts capital costs of £80 billion (money of the day) (£48 billion £ real 2014), excluding a possible additional £5 billion to £10 billion of surface access costs. The £80 billion comprises £25 billion for the Northwest runway expansion scheme, £22 billion for core capital expenditure and £33 billion for replacement capital expenditure, all through to 2050. Peak debt will need to rise from £11 billion in 2014 to £34 billion in 2028, which with re-financing needs will be a huge challenge for debt markets. The shareholders (90% owned overseas) are forecast to raise their capital from £3 billion to £8 billion, which is hardly cushion

enough to absorb the substantial construction, operational and financial risks. The passenger and tax payer are left to absorb most of the risk but the former will be heavily burdened with high aeronautical charges leaving the risk to be borne by the UK tax payer. State aid may require Government cuts elsewhere in the economy, and may be contrary to competition legislation. It would be difficult to justify given the spare capacity at other UK airports, lack of competition, and the prevalence at Heathrow of international-to-international transfers and leisure passengers from the UK, which provide little benefit to the UK economy.

#### 24. Heathrow Economic Regulation

1. Heathrow has passed the Market Power Tests of Strategic Market Dominance and therefore requires regulation by the CAA under licence according to the Civil Aviation Act 2012.
2. The Primary Focus of the regulation is to protect the interests of the current and future users of Heathrow (passengers and freight owners) from exploitation of the market dominance but only so far as protection is not otherwise provided by competition and other laws. This involves the volume of service and price, its availability and continuity, quality of service, and delivery costs and efficiency
3. The restrictions and commitments on Heathrow's charges to airlines are the key mechanism for intervention by the regulator.
4. The charges allowed historically have been set over five year regimes with the next one (H7) currently scheduled to commence in January 2020. The aim is to provide a regime (integrated at least in part with (H7) for the expansion of Heathrow.
5. The expansion of Heathrow by way of a third runway and associated facilities is such a major development that the current regulations for 'business as usual' need to be re-modelled.
6. The regulation model seeks to allocate between stakeholders the relevant costs and benefits of expansion and the associated risks in a fair and equitable manner that is transparent and robust over the short and longer term.
7. Where possible the CAA would like to see the markets achieving the desired outcomes (e.g. the airlines and Heathrow working out solutions that avoid Heathrow's market dominance) so that intervention focuses on the exceptions and remaining market distortions. The CAA's intervention can be through restrictions (e.g. on charges) but also in the form of incentives and penalties.

**We are concerned that this important topic of economic regulation and how the costs and benefits of the NWR scheme will be shared must be finalised before the approval of an NPS.**

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### Assessment principles

**Question 3: The Secretary of State will use a range of assessment principles when considering any application for a Northwest Runway at Heathrow Airport. Please tell us your views.**

1. Our comments refer to the Appraisal of Sustainability publications issued with the draft NPS.
2. We understand that the assessment of principles needs to comprise a comprehensive list of sustainability topics, each with appropriate objectives so that a full and thorough appraisal can be made. For ease of reference, those listed in the consultation are listed here (the number of issues identified by the AoS is in brackets). The following list of topics is discussed in this response: Economy (4); Noise (2); Carbon (3); and Air Quality (2). The following topics are not discussed here but are still of importance: Quality of Life (4); Community (3); Biodiversity (2); Soils (2); Water (4); Resources and Waste (2); Historic Environment (2) and Landscape (3).
3. Stated AoS Objectives and RHC's proposed changes are set out in the table.

Topic	Objective ( <i>RHC proposed changes in italics and underlined</i> )	Comment
Economy	To maximise economic benefits, <i>to <u>minimise the costs</u></i> and to support the competitiveness of the UK economy. <i>To <u>minimize the burden on public finances and ensure a fair contribution to taxes.</u></i> <i>To <u>promote efficient markets and avoid market distortion.</u></i> To promote sustainable growth To promote employment and economic growth in the local area and surrounding region <i>but not at the expense of the <u>UK as a whole.</u></i> <i>To <u>achieve value for money</u></i>	As stated the objectives are too limited
Noise	To minimise and where possible reduce noise impacts on human receptors <i><u>taking account of the effect on health and quality of life.</u></i>  <i><u>The noise objectives should be those in the National Aviation Policy Framework to be revised in 2018. The current objectives are not fit for purpose.</u></i>	The acoustic impact needs to be converted into an effect on people.  The objectives need to be consistent with national objectives on noise.
Carbon	To minimise emissions in airport construction and <i><u>operation including those from aircraft in flight consistent with EU, national and local standards and requirements.</u></i>	
Air Quality	To improve air quality and reduce emissions consistent with EU, national and local standards and requirements.	

4. The Appraisal of Sustainability also needs to assess the alternative options. However, the options have been confined to three options - Heathrow NWR, Heathrow hub extended runway and Gatwick 2<sup>nd</sup> runway. Question 1 openly seeks comments on any option including those where no additional runway capacity is provided. As we have suggested in our response to Question 2 within the carbon constraints advised by the Climate Change Committee, the Do-minimum option may be the only feasible option. The Do-minimum could also be attractive if for example growth were to take place across the UK and not be concentrated in the overheating South East and if International-to-International transfer passengers were discouraged so as to free up capacity for



terminating passengers. Aviation generally speaking is under-taxed compared to other sectors of the economy - it pays Air Passenger Duty but no Vat or duty on fuel. The APD exemption on International-to-International transfer passengers is no longer justified. The Commission ruled out the Do-minimum option at the Interim Stage but it is unacceptable that the draft NPS should carry forward this significant failing in the decision process.

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## **Impacts and requirements (Ch 5)**

**Question 4: The Government has set out its approach to surface access for a Heathrow Northwest Runway scheme. Please tell us your views.**

1. The analysis of surface transport breaks down broadly into:
  - What's the demand?
  - What's the capacity?
  - What's the gap between demand and capacity?
  - What's the impact of demand on service level (including time taken, convenience and journey comfort)?
  - What's the impact on road congestion?
  - What's the impact on pollution?
  - What's the capacity cost and how can funding be shared?
  
2. What's the demand for surface transport to and from Heathrow?
  - a. Demand is made up of (a) background demand and (b) Heathrow specific demand. While Heathrow demand may be relatively small compared to background demand, it can be critical at peak times and when demand is near to or exceeds capacity. Heathrow demand includes terminating passengers, staff and freight.
  
  - b. Background demand is growing (based on population growth of 37% in London as a whole between 2011 and 2050 according to the London Plan).
  
  - c. With NWR expansion, Heathrow terminating passenger demand is forecast by the Commission to grow from 52 million passengers per annum (mppa) in 2011 to 65 mppa in 2030 , 94 mppa in 2040 and 105 mppa in 2050 (Assessment of Need carbon capped). These figures are shown in the following table.

Heathrow Passengers and Modal share - NWR Option	2011	2030	2040	2050
Passengers mppa note (a)	52	77	94	105
Promise 1: modal share increase:				
Modal share: public transport	40%	50%	55%	55%
Public transport (passengers)	21	39	52	58
Car (passengers)	31	38	42	47
Promise 2: no more cars than today (pax equivalent):				
Modal share: public transport Required	40%	60%	67%	70%
Public transport (passengers)	21	46	63	74
Car No more cars on the road (passengers)	31	31	31	31
Note (a): Airports Commission Assessment of Need carbon capped.				

Heathrow's first promise is to achieve 50 % public transport by 2030 and 55% by 2040. This still results in a 22% increase in road users between 2011 and 2030 and a 35% increase by 2040. We cannot see how air quality targets will be met even were this modal shift achieved. Furthermore, the

figures depend on a significant shift in peoples' behaviour towards public transport. Even if they wanted to shift we doubt there will be the public transport capacity unless considerably more is spent than the £5.7 billion estimated by the Commission.

The second promise is that there shall be no more cars than today. In the table we assume that the number of passengers per car remains little changed. The modal share of public transport would need to increase to 60% (cf 50%) by 2030, 67% (cf 55%) by 2040 and 70% by 2050. The modal shift would be unprecedented by a wide margin compared to that achieved anywhere else in the world. The public transport capacity would have to be increased by two times by 2030 and by three times by 2040, which we do not believe could be achieved without the cost between £15 bn and £20 bn.

d. Staff numbers tend to be proportional to passenger numbers, so are likely to grow from a base of around 84,000 in 2011. Freight is also expected to grow at similar rates and be a major contributor to surface access demand.

e. Surface access demand depends on Heathrow's catchment area and on where people travel to and from within that area. Rail transport projects - HS2 and the Western Rail Access projects - will substantially increase the catchment area to the north and west of the country according to the Commission.

f. The way people choose to travel - the modal share of total demand - is especially important. This means the proportions travelling by road (car and bus) and by rail (network rail, over-ground and underground). Behaviour change and interventions such as congestion charging zones can have an effect on people's choices. However, the promises by Heathrow have not been fully assessed and are not binding.

g. The Commission in our view significantly under-estimated surface access demand in its original analysis. Our view continues to be that the demand estimates remain unrealistically low and that the mode shift to public transport is over optimistic. It is particularly important to consider the peak hour demand and segments of the road and rail networks that are overloaded. For example, the morning peak hour 2-way Heathrow demand was estimated by the Commission in its original projections to be a total of 20,000 trips in 2030 compared to TfL's estimate, when the airport is subsequently full, of 35,000 trips, which is 75% greater. Similar disparity arose in the underlying road and rail demand. The Commission estimated 12,300 road trips, while TfL estimated 23,900 trips. The Commission estimated 7,400 rail trips while TfL estimated 11,500 trips.

### 3. What's the capacity for surface transport to and from Heathrow?

a. The surface access capacity predicted by the Commission and Government update comprises a Core baseline and an Extended transport baseline which together are expected to be in place by 2030. The Core baseline includes Heathrow Express, London Underground Piccadilly line, Crossrail and HS2 with Heathrow passengers connecting at Old Oak Common. For roads, it includes "smart motorway" upgrades to certain junctions on the M23, M25 and M3. A smart motorway is a section which uses active traffic management techniques to increase capacity, e.g. variable speed limits and hard shoulder running at busy times. The Extended baseline includes Western Rail Access (WRA) to Heathrow. Two additional schemes that are not included in the baselines are a Southern Rail Access (SRA) linking Staines to Waterloo via Richmond and increased Crossrail frequency. These are allocated to the Heathrow project rather than to background demand.

b. We concluded that the original Commission projections of capacity for Heathrow expansion projects would not be sufficient. So far our analysis of the updates by the Government suggests there

is still a lack of capacity. For example, the WRA has still to be funded and the SRA (previously known as Airtrack) ran into considerable problems when last considered because of the impact on the several level crossings that would have to be closed for more of the time with consequential impact on local traffic. Demand for seating capacity on segments of the Piccadilly line and Crossrail far exceeds the available seating capacity. While this might be a lesser problem for non-airport users, Heathrow's passengers may have luggage, have long flights ahead or behind them, and include families with children. By 2030, with or without a third runway, overall rail access to Heathrow (including Crossrail, underground and Heathrow Express) does not improve for 8 London boroughs, and marginally reduces for 15 boroughs. Only 8 boroughs are likely to experience any improvement. We are concerned that the SRA will be over-crowded, especially from Richmond to Waterloo and in peak hours.

The current row between Heathrow and the Government on the Heathrow Express whereby Heathrow seeks to recoup past investment means that Cross rail may be turned around before reaching Heathrow, which would seriously impact the access to Heathrow.

c. Inadequate capacity leads to road congestion and pollution

The cost of inadequate surface access is significant in terms of overcrowding on the rail system, less convenience and comfort and congestion and pollution on the road network. Furthermore, with pollution subject to statutory limits it is quite possible that Heathrow will not be able to make full use of an additional runway. It is not clear what service level is being considered in the planning - low, intermediate or high. This considerably alters the cost.

d. What's the capacity cost and how can funding be shared

The Commission estimates the surface access investment required for servicing an expanded Heathrow will be £5.7 billion. But TfL believe the sum required will be up to £20 billion. The Commission estimates that HAL will need to find as much as £34 billion to finance a third runway and ongoing cash outflow, excluding the funding of surface access. It is not clear from the Commission, Heathrow and importantly the draft NPS and associated material who is expected to fund the surface access and what proportion can Heathrow pass on as charges. But it is clear from the Commission's reports and that it thinks even without the surface access funding, the markets may find it difficult to fund the size of investment required. It could prove unacceptable economically and politically for the State to fund the scheme as direct grants or by guarantees.

**The draft NPS - Mitigation**

1. Chapter 5 of the draft NPS discusses surface access mitigation. We comment here.
2. Para 5.15. We agree that Heathrow should set out its access strategy to support expansion. The draft NPS says this should be 'appropriately secured'. This statement establishes no meaningful criteria as to how the matter will be secured and what happens if it fails. Also, the NPS should make it clear that the level of service for non airport users compared to the Do-minimum option should be no worse.
3. Para 5.16. This para sets out the test for public transport mode which we examined in our para 2c above. Based on the Commission's demand figures, the mode shift target will inevitably fail in our view and the question arises what will be the consequences. Will the passenger throughput at Heathrow be restricted with all the financial consequences that entails? One possible solution would be for Heathrow to pay into an escrow account from the time its DCO were approved. £250 million a year might provide an insurance against Heathrow failing in its surface access promises. The escrow money would be made available to mitigate the under-

provision of public transport capacity and other measures required to contain air pollution. A similar approach could be applied to securing other commitments. It is evident from promises given over the years regarding Heathrow that promises and commitments have not been kept.

4. Para 5.18. Surely the NPS needs to be much clearer on the scope of the surface access projects required to provide satisfactory nil detriment or level service and how and who will share in paying for the access.
5. Para 5.19. This talks about the need for public funding on a case by case including deferred parts of the project. Surely, the NPS should be much more definitive.

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**Question 5: The draft Airports National Policy Statement sets out a package of supporting measures to mitigate negative impacts of a Heathrow Northwest Runway scheme. Please tell us your views. Are there any other supporting measures that should be set out? In particular, please tell us your views on:**

- 5.1. Air quality supporting measures
- 5.2. Noise supporting measures
- 5.3. Carbon emissions supporting measures
- 5.4. Compensation for local communities

**Air Quality (draft NPS 5.1 et seq)**

1. The UK is currently in breach of air quality standards. It was required by a UK Supreme Court Judgement to show, by the end of 2015, how it will achieve compliance as soon as possible. On 5 May 2017 the Government published its draft UK Air Quality Plan which is now being consulted on. The Government must submit its air quality plan to the EU Commission by 31 July 2017.
2. Largely because of the impact of increases in road transport, Heathrow expansion will worsen air pollution unless mitigation measures are identified that can be shown to work, and that do not further delay removal of existing excesses, and that are affordable. If these cannot be identified, then Heathrow expansion is not deliverable. The Government cannot knowingly approve a plan for expansion without a realistic plan to put breaches right.
3. Compliance with air quality standards is a requirement that must be shown to be achievable to make any expansion scheme deliverable. Unlike some other criteria for the expansion scheme, air quality is restricted by absolute limits. There can be no trade-offs. A comprehensive risk appraisal is needed, with a safety margin for delivery. This should cover both the level of excesses and the delay in meeting the statutory limits. This analysis is not available.
4. Fines payable for non-compliance would affect the business case for investment in expansion. Investment in expansion that may later find its income stream curtailed by statutory pollution limits increases risk and thereby reduces available finance and increases cost.
5. Unfortunately the draft UK Air Quality Plan not only shows the London agglomeration in breach of statutory limits past 2030. The Plan excludes Heathrow expansion.
6. The Airports Commission's stated objective in appraising air quality is "*to improve air quality consistent with EU standards and local planning requirements*" (our italics). The National Planning Policy Framework (NPPF) states that sustainable development should contribute to *reducing* pollution (our italics). The National Policy Statement for National Networks, specific to nationally significant infrastructure projects, requires the Secretary of State to "give air quality considerations substantial weight"
7. Pollution levels around Heathrow have been exceeding internationally agreed standards for some time. In 2014 Defra updated forecasts for compliance and suggested that compliance will now not be achieved until post 2030. The reason for the delay in compliance is stated by Defra as: "This is largely due to the failure of the European vehicle emission standards for diesel cars to deliver the expected emission reductions of Nox". The current levels of NO<sub>2</sub> in roads near Heathrow are over 55 microgms/m<sup>3</sup>, which levels are far higher than the legal limit of 40 microgms/metre<sup>3</sup> averaged over a year.

8. The pollutants cause greatest harm where they accumulate close to a sensitive “receptor” such as a school, and are not dispersed, particularly if exposure extends over a period of time – for example averaged over a year. It has been estimated that around 9,000 lives are lost a year in London caused by air pollution and that this could be costing the UK £20 billion a year in health and other issues..
9. We provide some figures prepared by the Commission on additional Heathrow passengers using public transport and we report on these in the section on Surface Access. It is clear there will be additional cars from expansion because people will not change their behaviour sufficiently and because even if they wanted to there would be insufficient public transport capacity. The Government’s recent draft UK Air Quality Plan seeks to delegate responsibility for measuring and controlling air quality to local authorities with the aim of people changing their travelling habits and to scrap their polluting cars. But a holidaymaker from a low air polluting zone in the UK flying from Heathrow is not going to sell their car so that it complies with tougher pollution around Heathrow.
10. Findings for the Commission on levels of continued non-compliance as a result of Heathrow expansion that are contained in the Jacobs report for the Commission cast doubt on the deliverability of the mitigations proposed by Heathrow. Of the 8 mitigation measures proposed for Heathrow NWR, the report suggests 5 are questionable (see para 5.6.3, pages 72-76 of the Jacobs report).
11. The background growth in population in London (37% London wide by 2050) will affect road transport levels and therefore air pollution. This does not appear to have been taken into account.
12. Heathrow does not have a direct rail link so freight is transported by road. A 100% increase in freight would cause considerable road congestion and additional pollution.
13. The construction phase of a third runway and related facilities must surely add significantly to air pollution during construction.
14. It seem clear from the about outline that expansion of Heathrow will add to the exceedences of air pollution.

#### **Mitigation of Air Pollution (draft NPS 5.34 et seq)**

15. The Commission recommended essential steps for mitigation. The measures Heathrow has put forward are:
  - a. A series of measures to minimise air quality impacts during construction and operation.
  - b. A commitment to targets to increase the numbers of people accessing th airport public transport
16. However, the draft NPS does not itself go into any detail and so it is difficult to respond. As we have explained in this response we very much doubt the success of these initiatives due to inadequate behavioural changes required and inadequate public transport capacity. We do not think there is enough content on mitigation in the draft NPS for the NPS to be an effective part of the decision process.

### **Decision making on Air Pollution (draft NPS 5.41 and 5.42)**

17. Decisions need to be made based on evidence and in spite of the recent UK Air Quality Plan there is insufficient data to reliably forecast whether legal air quality limits can be met and by when. We object to having to respond to this draft NPS within a couple of weeks of the UK Air Quality Plan being published. We have not had the opportunity to appraise it in detail.
18. At some point a Government decision on whether the scheme is or will be compliant with air quality legal limits may become possible but it is likely to defer the SOS decision on the DCO and defer the project until air pollution reduces sufficiently from the various measures in the Mayor's air quality plans just published.
19. The Government still seems to regard the highest level of London agglomeration pollution as the test, rather than more localised tests, such as near Heathrow, if less than the highest. We believe, as do others, that this is the wrong interpretation of the law.
20. There is little on offer in the NPS as to how mitigation will be enforced and the consequences of failure. Performance will be outside Heathrow's control to some extent but this must not let the airport off the hook. We suggested above an approach using an escrow account.
21. There seems little consensus by all the many parties involved in the surface access, including Heathrow, as to what the scope of the topic is and how it can best be dealt with including the total cost and who is responsible for the cost. The decision process on the several projects necessary to increase capacity is unsatisfactory with the grave danger Heathrow will commence development but then find it cannot meet the legal limits on air quality.

### **Noise: draft NPS 5.2 et seq**

22. Our response raises a number of issues on noise, which are all dealt with more fully in our response to the DfT on Airspace Policy and we ask that response be taken into account as part of our response to the draft NPS. The Annexes referred to below are those in our response to the Airspace Policy.
23. The issues we raise include the following:

### **Summary Key Points on Noise**

#### **Noise Objectives (Annex 1)**

1. The Government's noise objectives, as stated in the National Aviation Policy Framework 2013, seek to limit the noise impact on communities, share the benefits of less noisy aircraft between industry and communities and balance the negative impacts of noise and the positive economic impacts of flights.
2. The noise impact objective is seriously flawed in its ambiguity and lack of ambition for noise reduction.
3. There is no assessment let alone consensus between Government, the aviation industry and communities affected by noise as to what might be the quantum of noise reduction and how the benefit might be shared.
4. There is no consensus between Government, the aviation industry and communities affected by noise as to what might be the benefits and environmental costs of aviation and how a



balance might be struck.

5. It is unacceptable that Airspace Policy is being processed to adoption before the review of the National Aviation Policy Framework in 2018.

#### **Aviation Noise Metrics and Valuing Noise Impact and effect (Annex 2)**

1. The Government's official 57 LAeq 16 hr noise metric is not fit for purpose. The several shortfalls include averaging that fails many communities exposed to intense noise sporadically and the 57 decibel threshold that is far too high to capture the effect of lower levels of noise that clearly are affecting individuals and communities.
2. The longstanding WHO Guidelines have been ignored with no explanation by Government for far too long.
3. New Guidelines are about to be issued and it is essential the Government clarify:
  - i. the legal status of the WHO Guideline values, and
  - ii. the UK's strategy and timetable for reducing the levels of community noise from aircraft and from other major sources to below the WHO guideline values.In particular, the Government must sets targets for aircraft noise at Heathrow over the next ten years to 2027.
4. Continuing research on the health impacts of health and quality of life is essential but this should not delay introducing the WHO Guideline values, which are themselves based on research.
5. The Consultation suggests use of LOAEL and an over-flight tool. In principle these seem reasonable proposals but we would like to see further evidence on their use and applicability.
6. RHC proposes four metrics - Single Event, Hourly, Daily and Annual. These have been used in the RHC airspace noise model to good effect and provide information about frequency and respite.

#### **Airspace Design Issues and Principles (Annex 3)**

1. Richmond Heathrow Campaign has developed an airspace noise model to assess the design of flight path structure and aircraft operations and the consequential noise impact.
2. The model demonstrates that propagation and absorption of noise modelled by the Government and the aviation industry may be under-estimating the noise impact - possibly by a considerable amount. It is proposed the sound absorption rate, which seemingly has never been validated, be urgently reviewed.
3. The model demonstrates that there is a material difference in the operation and noise characteristics between departure and arrival flight paths.
4. The model demonstrates the under-estimation of noise on departures on easterlies when assessed by the official annual metric; this is due to averaging.
5. The model demonstrates the relationship between noise and frequency of flights - giving credence to recent local noise complaints about increased frequency.

6. The model's initial results suggests expectations of reduced noise from greater ascent rates may be over optimistic and that long term noise benefits from steeper angles of ascent and descent may be marginal in justifying a 3<sup>rd</sup> runway.
7. The Government makes much of Altitude Based Priorities in the design of airspace. However, the model's initial assessment suggests that the noise impact from higher altitudes is greater than thought and that the band breakpoints of 4,000 feet and 7,000 feet are several thousand feet too low to achieve the noise improvements sought.
8. Re-design of flight paths laterally is fraught with controversy due to re-allocation of noise between individuals and communities and the change from a legacy noise climate in which people have a reasonable expectation noise will not get worse.
9. PBN technology, resulting in concentration, is not popular but neither is dispersion to those newly affected or experiencing re-distributed noise. The industry seems keen on multiple flight paths whereby use is rotated thus creating respite. However, respite comes at a cost to those who experience a new flight path. The Government seemingly fails to recognise there is a cost to respite. The acoustic impact and effect on health and quality of life needs to be more fully assessed before deciding on concentration or dispersal with or without respite.
10. Noise improvements ultimately rely on less noisy aircraft but the benefit is long term and potentially offset by London's population growth.
11. The noise impact from the proportion of the aircraft fleet being made up of larger aircraft needs to be assessed.
12. Currently there is a serious lack of information on the number and location of flight paths resulting from modernisation and a 3<sup>rd</sup> runway, if built. This may not be remedied until the mid 2020s leaving London exposed to major blight.
13. Decisions on development of a 3<sup>rd</sup> runway at Heathrow would be irrational and un-democratic without greater certainty on the location and use of flight paths.
14. From RHC's initial modelling of the airspace modernisation and a 3<sup>rd</sup> runway at Heathrow it is clear a large number of people will be overflowed for the first time. There will be considerable controversy as noise is re-allocated between communities.
15. There may be insufficient airspace to accommodate the additional flights. Respite from noise may only be partial because of insufficient space to separate flight paths.
16. A 3<sup>rd</sup> runway will reduce Richmond's respite from 8 hours a day to 4 hours with potentially serious impact on health and quality of life.
17. If the increase in noise over London from a 3<sup>rd</sup> runway cannot be restricted then Heathrow may have to reduce throughput which will seriously impact the economic and financial cases for expansion and in turn the deliverability of the project.

#### **Balanced Approach (Annex 4)**

1. The trend in noise reduction at source has decreased considerably and expectations generally under-achieved. Lack of incentives and trade-offs with fuel and carbon improvements seem reason

enough to expect further decline in the rate of noise reduction.

2. Fleet replacement and the introduction of less noisy aircraft is uncertain and it is cause for concern that the noise climate will not improve other than slowly over the long term.
3. The pressure for housing from a growing London population and the already high population density is unlikely to allow land use planning and management to have much effect on controlling the number of people exposed to aircraft noise.
4. The precautionary approach would be to assume that everyone in a radius of 40 to 50 kilometres (24 to 30 miles) from Heathrow will be impacted by aircraft noise with a 3<sup>rd</sup> runway.
5. Operational improvements may have a positive effect on noise reduction but the benefits even in combination seem likely to be marginal.
6. Under the circumstances outlined here there is no good reason to lift the current operating restriction capping Heathrow flights at 480,000 per year.

**Mitigation of noise impact and effect (draft NPS 5.53 et seq)**

24. The following Supporting Measures are proposed by the NPS in seeking to mitigate the impact of the NWR expansion. We are unclear as to why the Airports NPS focuses on Heathrow NWR.
  - a. A noise envelope with noise performance targets to be tailored to local priorities
  - b. Expectation of a six and a half hour ban on scheduled night flights
  - c. Predictable respite to be provided through runway alternation
  - d. Noise insulation for residential properties and schools.
25. The Commission recommended essential steps for mitigation but these have already been watered down by Heathrow in their pledges, which is unacceptable.
26. The draft NPS is notable for its failure to assess the measures and secure them. In fact it explicitly defers this until later. This situation is wholly unacceptable.
27. The noise objectives, as discussed above, are in disarray and will not be reviewed until after it is planned to approve the NPS. This is unacceptable.

**Decision making on Noise (draft NPS 5.66 and 5.67)**

28. Para 5.66 says the Airports NPS must be used as the primary policy on noise when considering the Heathrow NWR scheme, and has primacy over wider noise policy sources. The NPS is extremely weak in providing definitive Noise Policy, in justifying such policy and relating it to the issues. What is the point of updating the National Aviation Policy Framework in 2018 if it is secondary to the NPS.
29. The flight paths and all the consequences and impact on London's inhabitants will not even be in outline until after the DCO is given approval. This makes a nonsense of the decision process - it is irrational, irresponsible and undemocratic.

**Carbon: draft NPS 5.68 et seq**

30. In 2009 the government adopted a target to reduce UK aviation emissions back to the 2005 levels of 37.5 million metric tonnes of CO<sub>2</sub> by 2050, which is 25% of the UK's total CO<sub>2</sub>. The Committee on Climate Change (CCC) says this is the maximum level of emissions for the sector compatible with

the Climate Change Act 2008

31. Carbon capping may provide some scope to meet this but would result in re-distributing growth to Heathrow at the expense of the rest of the UK economy (see Question 1). Carbon trading would challenge the rest of the UK economy for limited carbon credits and only be practical if adopted worldwide.
32. There is therefore a risk that Heathrow airport's growth will be constrained even more than currently predicted in the Commission's modelling by the impact of carbon emissions, potentially rendering an NWR uneconomic.
33. Any decision by the Government on expanding Heathrow will need to identify how and at what cost carbon emissions will be controlled and UK limits met.
34. In 2011 the aviation sector's CO<sub>2</sub> emissions accounted for 6% of total greenhouse gas emissions in the UK or around 35 Mt CO<sub>2</sub>. There are a variety of forecasts but the level could rise to as high as 85 Mt CO<sub>2</sub> by 2050 before fuel-burn efficiencies, operational improvements and partial conversion to the use of bio-fuels kick in. Net of these efficiencies, improvements and the use of bio-fuels the Commission estimates up to 47.7 Mt CO<sub>2</sub> in 2045 in unconstrained circumstances before decreasing thereafter. The issue is whether this peak can be reduced and the limit of 37.5 Mt CO<sub>2</sub> be achieved by 2050.
35. In broad terms aviation CO<sub>2</sub> emissions are a function of passenger numbers, or more accurately passenger-kilometres travelled with long-haul being the most carbon intensive flights. Freight is also taken into account.
36. More specifically, the CCC has estimated that in order to avoid the 37.5 Mt CO<sub>2</sub> limit being breached, the number of passengers should not exceed 386 million per year by 2050 (see question 1).
37. Carbon capped forecasts reduce demand to a level consistent with an emissions cap of 37.5 Mt by progressively increasing the assumed price of carbon which is then built into the price of tickets. Carbon traded forecasts assume that aviation is fully included in carbon markets and pays the carbon costs anticipated for other sectors. These are lower, however, than those required to deliver the carbon cap. Carbon traded forecasts are therefore associated with aviation emissions exceeding 37.5 Mt by 2050.
38. Emissions are expected to reduce with technological and operational improvements and bio fuels but the rate is slowing and additional reductions are needed. Effort will be needed to achieve reductions, and sometimes there will need to be a trade off with reductions in noise. But in all the Commission's forecasts carbon efficiency improvements are not enough to be compliant with the 37.5 Mt CO<sub>2</sub> limit with or without Heathrow expansion without new, unspecified, action to impose a carbon cap. An additional runway makes it that much harder to be compliant.
39. Carbon trading, even if it can be achieved for aviation, is forecast to be insufficient to keep UK aviation emissions to a level compatible with the Climate Change Act. There are currently no meaningful alternative policy approaches for meeting the carbon cap that are at the UK's disposal, however, aside from halting further runway expansion.
40. The carbon calculations do not at present take into account radiative force. This could double the

impact of the emissions. Radiative forcing is where the balance between the earth's absorption of the sun's energy and the earth's emission of radiation is impacted by an agent such as CO<sub>2</sub>.

41. If the supply of worldwide permits is abundant and their price low then the carbon traded scenarios forecast by the Commission may materialise. But this is unlikely to solve the world's climate change challenge and at some future date compensatory increases in price will surely be needed. However, by then an additional runway could have been built based on overoptimistic demand forecasts. The Commission did not fully factor in this potentially substantial risk and the Government has made no progress except that it says it will publish an Emissions Reduction Plan later this year. It is quite unsatisfactory for consultation and potentially the approval of the draft NPS to take place before this Plan is published and consulted on.
42. The DfT has said in its Sensitivities Report, October 2016, that it prefers the carbon-traded response to climate change. We do not agree with this view. The Environmental Audit Committee and Climate Change Committee (CCC) and others have expressed serious reservations in respect of the DfT's over-optimistic and incoherent approach to carbon. It is inexplicable how the DfT can dismiss the Commission's carbon capped forecasts that formed the basis of the Commission's Final Report 2015.
43. The DfT's central case results in emissions being around 15% higher than the CCC planning assumption. The CCC has queried the viability of the NWR scheme accordingly and pointed out that other sectors of the economy would need to reduce their carbon which does not seem feasible.

#### **Mitigation of Carbon Emissions (draft NPS 5.77 et seq)**

44. Heathrow has put forward a series of measures to minimise carbon impacts during construction and operation which Government expects to be honoured and cemented through the development order process.
45. The proposals are focussed on ground measures which are important but small in relation to the carbon emissions from flights. The draft NPS does not tackle the carbon issue and is far too vague.

#### **Decision making on Carbon Emissions ( draft NPS 5.81 and 5.82)**

46. Para 5.81 says 'Any increase in carbon emissions alone is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the project is so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets, including carbon budgets.' This test is too vague to have effect. Furthermore, how would the NPS establish controls on future carbon emissions and what would be the remedies.
47. At the moment the Government has failed to pass any kind of carbon test and has ducked the issue as did the Commission.

#### **Compensation (draft NPS 5.228 et seq)**

48. The Government talks about £2.6 billion being available/?paid to compensate for harm arising from the NWR scheme. Broad allocation is made for property offers and noise insulation.
49. As a principle we are very cautious about placing value on compensation offers. We are not in favour of polluters being able to buy their right to pollute. It is a form of excuse to pollute and harm peoples lives. If the money is genuinely used to mitigate the harm and damage then that could be acceptable but often it goes nowhere near adequate mitigation and promises tend not to be

fulfilled. Heathrow has used only a fraction of its commitments to insulate schools over the last 10 years. The proposals are for £550 million to be spent on property purchase and compensation, £700 million to insulate residential properties closest to the airport and £40 million to insulate schools and community buildings. It is intended there will be a compensation fund of £50 million. This adds up to £1,340 million which is short of the £2.6 billion referred to above.

50. There are some suggested improvements in the noise criteria for assessing insulation. But these use out of date exceptionally high noise metrics.
51. There is little or no assessment of the reduction in harm predicted from the compensation.
52. The draft NPS does not provide a sufficient basis for the SoS decisions on compensation pledges from Heathrow.

#### **Ruling out a fourth runway**

53. Regardless of the level of capacity and demand across South East England, if a third runway were to be developed at Heathrow, we have no doubt that it would reach runway capacity (but not necessarily passenger capacity) within a very short period of time of coming into operation. We can hypothesise this with some confidence, on account of the greater prestige among the airlines of Heathrow over other airports in the South East; the understandable desire by airlines currently operating at Heathrow to increase their number of slots when additional slots become available; and the understandable desire by airlines not currently operating at Heathrow to acquire slots as soon as they become available. It would, of course, be in the economic interests of Heathrow's shareholders to allocate the additional slots as soon as possible after they become available, in order to maximise the revenue from the slot holdings.
54. It is therefore reasonable to assume that, as soon as a third runway opened and regardless of the total number of passengers across the region, there would be a transfer of airlines to Heathrow from other airports in the South East. This trend is likely to be strengthened by the perception within the aviation industry that maximum efficiency at hub airports requires four runways; and that it would only be a matter of time before the sorts of arguments that are being used to justify a third runway would be redeployed to justify a fourth runway, with no further expansion permitted at other airports in the South East.
55. Past promises on there being no third runway by Government have had no substance and there is nothing to suggest the same will not happen in the future irrespective of new promises made now.

continued/

**Question 6: The Government has set out a number of planning requirements that a Heathrow Northwest Runway scheme must meet in order to operate. Please tell us your views. Are there any other requirements the Government should set out?**

We recognise there are a great many planning issues and the detail of which is very important. We also realise that the NPS may establish planning involvement in relation to the DCO consent. We responded in Question 5 to the issues raised by air pollution, noise etc and the pledges and commitments that Heathrow has made. Of course we would like to see appropriate conditions attached to any DCO consent. However, as discussed in Question 5 the pledges currently on offer by Heathrow seem to be fading and are already less than recommended by the Commission. Their appropriateness, adequacy and enforceability are open to serious question as discussed in Question 5.

**Draft Airports NPS Appraisal of Sustainability**

**Question 7: The Appraisal of Sustainability sets out the Government's assessment of the Heathrow Northwest Runway scheme, and considers alternatives. Please tell us your views.**

1. The Planning Act 2008 requires that the SoS must carry out an Appraisal of Sustainability before the SoS can designate a statement as a National Policy Statement.
2. We find the role of the AOS unsatisfactory in the context of the high level NPS, the details of a scheme proposed by Heathrow (a private company), the Commission's evidence and recommendation and the Government's compromised position of clearly wanting the NWR scheme to proceed while having to judge the merits of the scheme itself. Some of the issues are planning issues and others relate to other policies.
3. We have studied the Appraisal of Sustainability: draft Airports National Policy Statement and examined the list of topics and the appraisal of sustainability objectives and the supporting measures. We comment on these in our response to Question 3 but also address objectives and mitigation in our responses to Questions 4 and 5.

**General questions**

**Question 8: Do you have any additional comments on the draft Airports National Policy Statement or other supporting documents?**

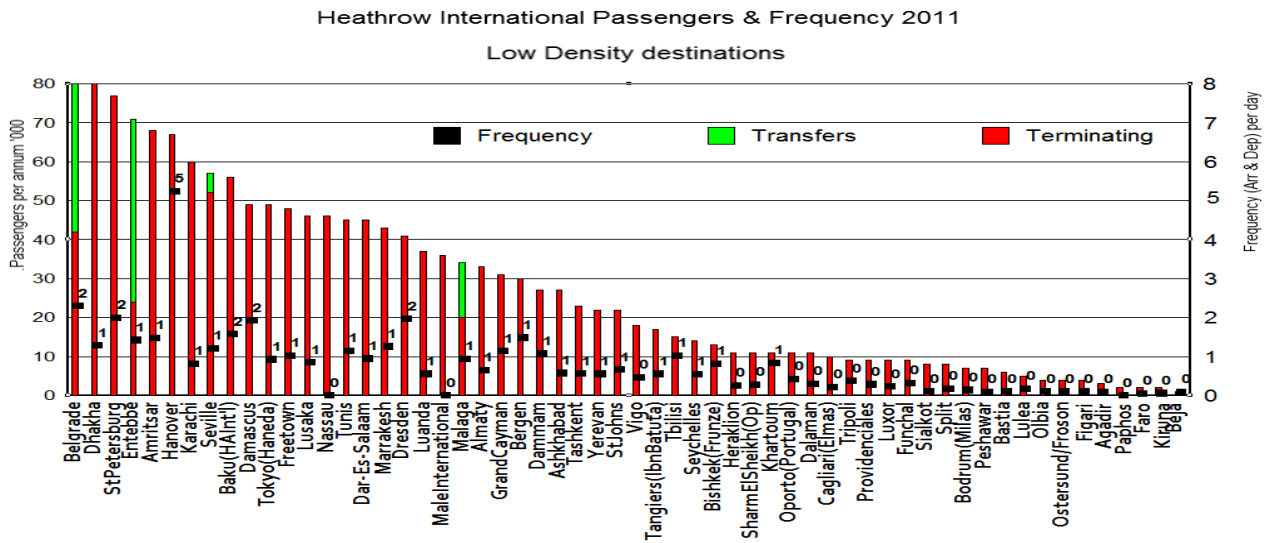
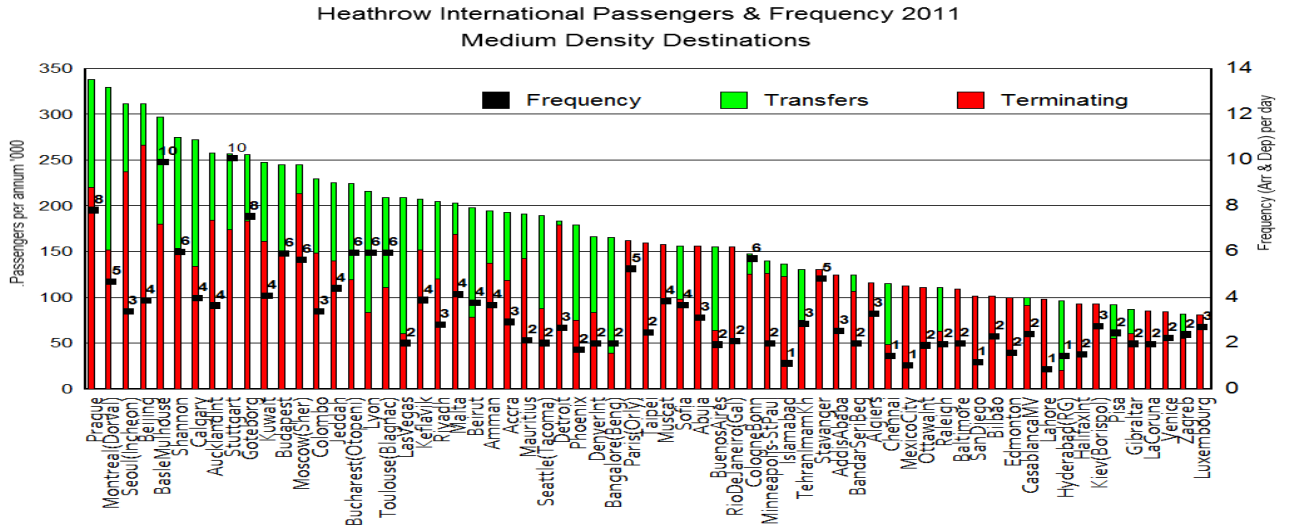
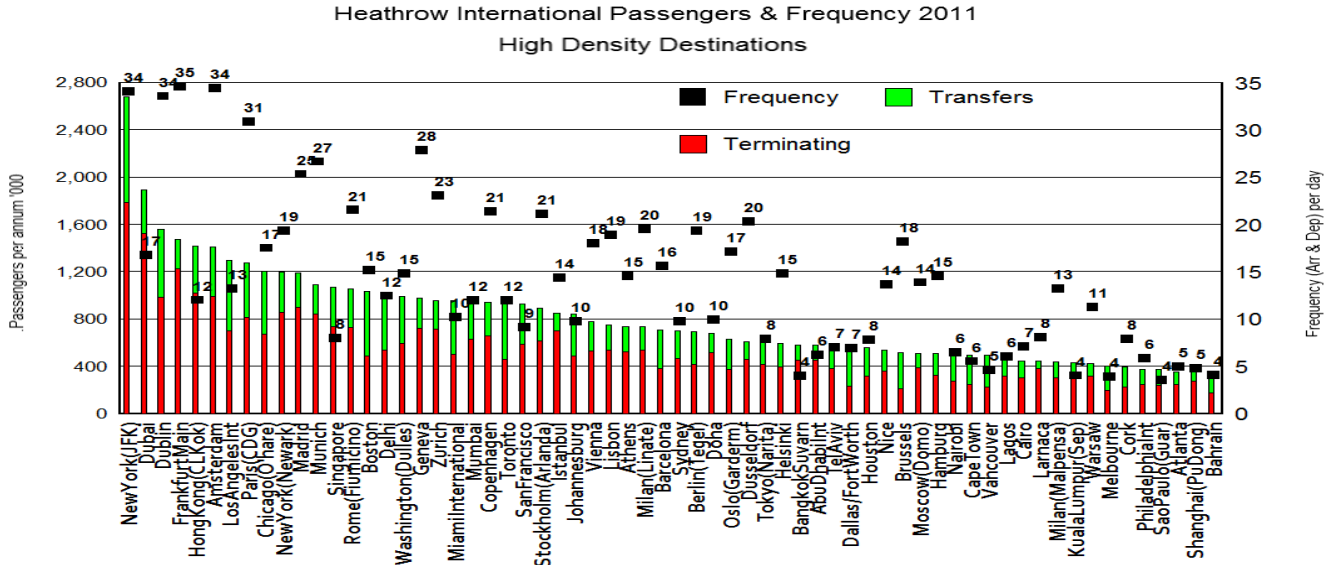
None, thank you.

**Question 9: The Government has a public sector equality duty to ensure protected groups have the opportunity to respond to consultations. Please tell us your views on how this consultation has achieved this.**

No comment.

End

Annex 1 attached



Source: CAA. Diagrams prepared by Richmond Heathrow Campaign 2013