

MAYOR OF LONDON

Sir Howard Davies
Chairman
Airports Commission
Sanctuary Buildings
20 Great Smith Street
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Date: 12 FEB 2014

Dear Howard

1 Introduction

- 1.1 I am writing in response to your letter of 14 January in which you said you did not wish to pursue my offer that we work together on the next phase of the Airports Commission's work. But I am also writing more generally, in advance of our meeting on 4 March, with my reflections on the Commission's Interim Report. I have sought to draw together in a comprehensive fashion my position and how it arises from my statutory responsibilities as Mayor of London; the areas where I wish to question the process followed and conclusions reached to date by the Airports Commission; and my views on the Commission's future work programme, both for the three shortlisted options and for the further work on an Inner Estuary option.

2 The role and statutory responsibilities of the Mayor of London

- 2.1 My role as Mayor of London involves the fulfilment of a number of statutory responsibilities, particularly as set out in the Greater London Authority Act 1999 as amended and in other relevant legislation. It is because of these responsibilities that I have taken and will continue to take an active part in the development of airport policy.

Planning

- 2.2 I have strategic responsibility for the development of the capital. I am legally required to produce a spatial development strategy (the London Plan) for the capital over the coming decades; I am responsible (directly or indirectly) for all major planning applications in the city; and I have duties concerning the promotion of economic development.
- 2.3 In this regard, the central fact about the future of London is its projected population growth: London has grown by 330,000 people since 2008 and its population is reliably forecast to reach 8.7 million by 2016 and 10 million by 2030. It falls squarely within my spatial planning, housing, transport and economic responsibilities to provide support and opportunities for the homes and jobs that increased population will need, along with the necessary transport infrastructure and services and an environment acceptable in a modern civilised city.

MAYOR OF LONDON

- 2.4 An airport is a significant creator of jobs and of economic activity. It also generates a demand for homes and surface transport access and has environmental consequences. The development of any airport capacity in the south east of the UK will impact on all of my responsibilities and on the very fabric of the city. This is the case, in varying degrees, whether we are discussing new airport capacity within the city limits or over a wider area around the capital.
- 2.5 After decades of falling behind, the eastern half of the capital is now beginning to catch up with its better off, more economically thriving counterpart in the west. But there is a long way to go. We need more homes in east London but we also need the jobs to go with them. The construction of a new hub airport on a site to the east of the city, accompanied by the appropriate levels of new road and rail surface access infrastructure, would be a powerful economic stimulus and bring significant regeneration benefits to east London and large swathes of the estuary that are currently remote from major centres of economic activity. It would powerfully assist in meeting the challenges facing London.
- 2.6 My submissions to the Airports Commission last year showed the potential benefits of building a new hub airport on the Isle of Grain or at Stansted, to replace Heathrow, in terms of the additional jobs that would be created both in the local area and nationally and the improvements that could be expected to the country's annual productivity. This evidence is a powerful justification for the scale of a new airport project and so I will be conducting further studies over the coming months to demonstrate these benefits more clearly.
- 2.7 The existing Heathrow site occupies 1,227 hectares in west London, which is roughly equivalent in size to a small London borough. Initial estimates have indicated that the site could support new homes for as many as 200,000 people, accompanied by 40,000-100,000 jobs both to support that local population and in new commercial clusters. I shall be carrying out further work to demonstrate the benefits of such development.
- 2.8 The relocation of our largest airport would have effects on the economy of west London and adjacent parts of the Home Counties. Supporters of Heathrow expansion have sometimes spoken of these in apocalyptic terms. But the effects are not entirely theoretical: other cities have relocated their major airport, often with huge success. Will the Commission be carrying out studies of international comparisons to understand how the benefits of such relocation can be captured for both the new site and the old one? I should be happy to collaborate with those studies.
- 2.9 In summary, the shortlisted options for airport expansion fail to be judged in the light of the challenges facing London and of my statutory responsibilities. It is a source of regret to me that you have not adequately considered these factors in reaching your shortlisted recommendations but have instead given preponderant attention to the relatively short term question of where one additional runway might be constructed and have considered the question largely in the light of the satisfaction of competing private commercial interests rather than of the public interest and the welfare of the affected populations.
- 2.10 But it is equally a source of regret to me that you decline to collaborate with me on a question so vital to my statutory responsibilities. I simply do not see how you can do the work set for you without close collaboration with me as Mayor when all three options you have shortlisted are so vitally connected to the future life of the capital.

MAYOR OF LONDON

- 2.11 So I repeat my offer that we work in close collaboration on these questions and I hope you will reconsider your letter of 14 January in the interests of finding the right public policy outcome, which has only ever been my concern. And I seek your assurance that the ramifications for spatial planning, housing supply and economic development will feature prominently in your assessment of all shortlisted proposals.

Transport

- 2.12 It is my responsibility under statute to deliver and invest in much of the capital's rail and surface transport provision.
- 2.13 An airport, as a gateway to international and more distant UK destinations, is a significant amenity to the population of London and the surrounding regions. But it can only function in this capacity if it forms a major multi-modal transport hub, served by high quality surface access infrastructure. Without such infrastructure, the large numbers of travellers looking to reach the airport generate significant congestion and an unsustainable modal shift towards private road usage. This causes economic and social damage through journey time delays, ambient noise and degradation in air quality.
- 2.14 With proper investment in rail links to an airport – and in common practice this equates to the provision of journeys which are less than 45 minutes from the airport to a number of city centre locations and a high public transport modal share achieved through affordable fare structures and high quality service offerings – the opposite effect is very powerful. Economic and social benefits are generated through job creation and regeneration of communities.
- 2.15 Transport for London (TfL) have reviewed the work of the Airports Commission as published in its Interim Report and are concerned that, based on airport traffic projections and transport usage models, the shortlisted options do not appear to have sufficient emphasis given to the surface access improvements that would be required to accommodate the increase in airport passenger and staff demand that would be generated in each case. The shortfall identified by TfL is very significant in scale for all of the shortlisted options. At Heathrow for instance, one new runway could place more than 10,000 new trips (two-way) onto the rail and road networks, in the peak hour.
- 2.16 One contributor to this is that the Interim Report assumes the benefits of a number of 'committed' schemes in west London, including the completion of Crossrail and the Piccadilly line upgrade. However, all schemes currently committed to by the Government or TfL are intended primarily or exclusively to support new traffic as a result of population growth in London, not new traffic that would be generated by expansion of an airport.
- 2.17 I have asked TfL to conduct further work on the new surface transport infrastructure that would be required to support the potential growth in airport-related and background demand in the event of implementing the shortlisted options at Heathrow and Gatwick. The Interim Report's supporting option factsheets state for example, that the motorway network around Heathrow is likely to be over capacity in 2030 as a result of 'background traffic, and not airport-related traffic'. This is the basis for the Commission's current position where no investment for additional motorway capacity is deemed necessary in the event of a new runway at Heathrow. However, airport-related demand comprises a substantial proportion of trips on the transport network. You quote a figure of 30 per cent for the rail network links and services which connect to Heathrow today for example. Clearly, in the event that Heathrow or Gatwick grow, placing thousands more trips on congested road and rail networks, major capacity and connectivity improvements will be necessary. Such

MAYOR OF LONDON

improvements will be due in no small part to airport-related traffic, and we must attribute the costs of these improvements accordingly.

- 2.18 The Airports Commission has said that it will be working with expert technical input from Network Rail and the Highways Agency to understand the impacts of the different proposals on the surface transport network. TfL have offered your officers support and associated resources to contribute to this work. Please may I have your assurance that you will engage with TfL, as the strategic authority for transport in London, on the same basis as you will work with other such bodies?

Ambient and aviation noise

- 2.19 I am required under sections 370 and 371 of the Greater London Authority Act 1999 to prepare and publish the London Ambient Noise Strategy and I am a statutory consultee on potential changes or additions to routes regularly used by civil aircraft in Greater London.
- 2.20 The Commission's Interim Report recommends the establishment of an independent noise monitoring authority. I support this recommendation as long as the authority is empowered not just to monitor noise but to set and enforce restrictions on its creation by airports and aircraft. Without those enforcement powers, such an authority cannot be effective at controlling the noise pollution caused by aircraft.
- 2.21 Such a noise monitoring authority should be established as quickly as possible, but at our last meeting you indicated to me that that it would require primary legislation to do that. Officers at TfL have written to the Department for Transport to ask when such primary legislation could be brought before Parliament, but have not yet received a response. While I hope that the Government will be able to bring forward and pass such legislation as quickly as possible, this may not now happen until the next Parliament after 2015 and it is important that your further work on understanding the impacts of noise, the methods by which it can be minimised and mitigated, and the true increase in noise which would be generated by each of the shortlisted airport capacity schemes is not delayed until after the authority is up and running. Can you tell me what work concerning noise the Airports Commission will be commissioning over the next phase of its work (to summer 2015)?
- 2.22 Aircraft arriving at or departing from Heathrow Airport currently cause, by Civil Aviation Authority measurements at the 55dB Lden level, severe noise disruption to over 760,000 people, a slight increase on the 2006 figure. This is well in excess of any other European airport and is substantially more than Amsterdam, Paris CDG, Madrid, Munich and Frankfurt combined.
- 2.23 There is a debate as to the most appropriate metric to be used when measuring the onset of annoyance from aircraft noise. The UK Government currently uses the 57dB LAeq contour to signify the point of onset of annoyance, which stems from the ANIS report published in the 1980s. The World Health Organisation believes that 55dB Lden is a more accurate representation, and other groups have offered alternative methodologies. Whatever an organisation's preferred method, two-thirds of respondents to the Government's draft Aviation Framework Consultation said that 57dB LAeq was not low enough. May I have your commitment now that you will not be making use of any standard less rigorous than that recommended by the World Health Organisation?

MAYOR OF LONDON

- 2.24 In addition to the disturbance and social impacts caused by severe aircraft noise, more evidence is beginning to emerge about the physiological impacts of sustained exposure to aircraft noise. Scientific studies have linked aircraft noise to hypertension and retarded reading age in children, and most recently a study published in October 2013 by Imperial College London indicated a 10 per cent -20 per cent increase in risk of stroke, heart disease and cardiovascular disease in areas around Heathrow with the highest aircraft noise levels. It also indicated a greater risk from night time noise when compared with day time noise results. There are further studies that Imperial College is keen to carry out if funding is made available.
- 2.25 For many years the residents of west London who are affected by aircraft noise from Heathrow have enjoyed a small degree of protection through the provision of defined respite periods. This is possible through careful control of runway alternation between the two Heathrow runways. The construction of a third runway at Heathrow would require the revision of the current respite schedule, reducing or removing respite periods for communities under the flightpaths. There has not been sufficient research carried out into the benefits of respite periods, both in social and physiological terms, to predict what effect this change will have on the affected communities.
- 2.26 There is still a great deal of work to be done to understand properly the health impacts of aircraft noise; the additional severity of night noise compared to day time noise; and the importance of respite periods. Only with a proper understanding of these factors can the true impacts of the shortlisted airport capacity schemes be identified. Can you give me your assurance that the Commission's work up to Summer 2015 will include commissioning further studies, either from Imperial College London or another organisation, to understand the impacts of aircraft noise in greater detail?
- 2.27 In recent months a number of organisations, including the Airports Commission, have cited evidence about the improving noise performance of aircraft as an indication that an airport's traffic can grow without disturbing more people with aircraft noise. This could be true were the raw noise output of aircraft the only factor but, as I have described earlier in this letter, London is a city with a very fast-growing population. While aircraft noise emissions have fallen (albeit, at a reducing rate), Civil Aviation Authority statistics show that the number of people within Heathrow's 55dB Lden contour is increasing; this is likely because the population within the contour, like that within London more widely, is growing all the time.
- 2.28 Given my statutory responsibilities in relation to noise, will you agree to work with me formally on this aspect of your work? Can you give me your assurance that the Commission's assessments of the noise impact of shortlisted airport capacity schemes will include the projected population growth surrounding the airport and not just increases in aircraft traffic and improvements in aircraft noise reduction technologies?
- 2.29 Finally, in relation to your short term recommendations, I note that your proposals for changes to airspace management would appear to result in more aircraft landing at Heathrow before 6.00 a.m. and a less robust system for the maintenance of respite arrangements during the day. I will study the further details of these proposals as and when they are brought forward by the Government but, on the face of it, I cannot be expected to support them.

MAYOR OF LONDON

Air quality

- 2.30 I am required under section 362 of the Greater London Authority Act 1999 to prepare and publish the London Air Quality Strategy, and it is my duty to consider, control and work to improve air quality in London. Furthermore, the Localism Act 2011 makes provision for the Government to require the Greater London Authority to make payments in respect of certain EU financial sanctions, and an EU fine for breaching air quality standards is something that I am working hard on behalf of Londoners to help prevent.
- 2.31 There are two regions of London that suffer from particularly low levels of air quality: central London, and the area around Heathrow airport. Some of this is due to the NOx and particulate emissions from aircraft both in the air and on the ground at the airport, but a significant contribution is also made by the high volumes of road traffic caused by passengers, staff and goods vehicles arriving at and leaving the airport (and adjacent ancillary businesses) by road.
- 2.32 Therefore, I am extremely concerned by the impact that additional passenger and freight traffic through the airport could have on air quality levels in west London. The Commission itself has stated that it does not accept Heathrow Airport's claim that the new traffic generated by a third runway could be accommodated without any additional road journeys.
- 2.33 Given my statutory responsibilities in regard to air quality and in particular the fact that London is not meeting in full the air quality targets set for it under European law, will you agree to work with me formally on this aspect of your work? Can you give me your assurance that the Commission will consider the effect of each of the shortlisted options on air quality in London, due to both new aircraft movements and additional road traffic?

3 The process and conclusions of the Commission in its Interim Report

- 3.1 There are number of areas in which the process followed by the Airports Commission and the conclusions reached by it, both in its Interim Report and elsewhere, are unclear or worthy of challenge. These are summarised in the enclosed document, to which I seek your formal response, and are set out more briefly below.

Demand forecasting

- 3.2 The demand forecasts that the Commission adopted in its Interim Report have been revised downward from the Department for Transport's latest figures, released in January 2013, and consider London as a single airport system within which demand can move fluidly.
- 3.3 It is on this basis that the London-wide demand is forecast to exceed capacity by 11 per cent in 2030, meaning that only one additional runway is required by that date (with a second additional runway likely to be needed by 2050).
- 3.4 The assumption that capacity in London contributes to a system-wide capacity is not consistent with what is experienced, and also fails to account for the negative impact of having a single airport with extreme capacity constraints. By the Commission's own forecasts, a three-runway Heathrow would be functionally full (operating at 90 per cent capacity) in 2030, shortly after it opened, meaning that the largest London airport would continue to face the same problems with respect to resilience and efficient hub operation that Heathrow currently faces.

MAYOR OF LONDON

- 3.5 Do you agree that, even on the basis of your own, low, forecasts, you should be planning now for the capacity needed beyond 2030 by making proposals for a four-runway hub airport?

Airport operating models

- 3.6 The difference in connectivity provided by a concentration of capacity in one hub airport is recognised. I have demonstrated this in an empirical fashion through a detailed connectivity analysis conducted by York Aviation and submitted to the Commission. The Commission acknowledges this in its own Interim Report as evidence that a dispersed airport system cannot generate the same variety of route choices as a single hub airport.
- 3.7 It is sometimes posited that the growth of the 'point-to-point' and 'low-cost' markets undermine the argument for a single hub airport. There is an open question as to how long low-cost carriers can be expected to continue with their current business model, given they are extremely fluid and fast-moving organisations. Recent examples include the successful movement of easyJet into the business aviation market, and the shift of Ryanair toward flying between city centre airports rather than remote locations. But setting that to one side, the nature of hub dynamics means that low-cost carriers can benefit from the transfer passengers provided by a hub airport just as 'legacy' carriers do, as long as there are suitably affordable airport services for them to make use of. This would be facilitated by the removal of barriers to informal inter-lining, on which your Interim Report makes no recommendations.
- 3.8 Separately from the arguments about the connectivity benefits of a single, large hub airport, there are indications that the operating efficiencies available to a well-designed large hub airport compared to both an incrementally-developed large hub airport and a dispersed airport system of the same capacity can provide increased airport capacity, smoother journey experiences for passengers and, importantly, reduced carbon emissions from airport operations.
- 3.9 The Airports Commission's terms of reference as set out by the Secretary of State for Transport in 2012 are very succinctly written, and at their core is the determination of how to "maintain the UK's position as Europe's most important aviation hub". Since the Interim Report contained no recommendation as to the definition of an "aviation hub" or the airport operating model that is needed to maintain and develop it, can you give me your assurance that the Commission will adhere to its terms of reference and focus its attention on hub capacity or explain how the UK can maintain its aviation hub status without a well functioning hub airport?

Climate change

- 3.10 The Commission has been clear that any proposals for new capacity must comply with the Climate Change Act 2008 and that growth in aviation activity must be within the targets issued by the Committee on Climate Change (CCC).
- 3.11 I agree that it is important that aviation, as with any other carbon-creating industry, meet its carbon emission targets. That is why all of the options I submitted to the Airports Commission in July 2013 were designed to accommodate only a level of traffic growth which fits within the CCC's targets.

MAYOR OF LONDON

Airspace management and conflicts

- 3.12 The Airports Commission's Interim Report indicates that significant expansion of Stansted airport would impact on Luton and London City airports owing to airspace conflicts, and Stansted is ruled out largely on this basis. Similarly, the Interim Report indicates that construction of a new airport on the Isle of Grain would require the closure of London City Airport.
- 3.13 A footnote in the Commission's Interim Report, however, acknowledges that it is impossible to determine the precise impacts on airspace without advanced modelling, and that a redesign of the airspace mapping over the south east of the UK coupled with the implementation of new technology could remove these airspace conflicts.
- 3.14 Separately, TfL has been given confirmation by National Air Traffic Services (NATS) that none of the options I submitted to the Airports Commission in July 2013 would automatically necessitate the closure of any other London airport.
- 3.15 Can you explain to me why the conclusions of the Airports Commission in its Interim Report are in disagreement with work conducted for TfL by NATS, and give me your assurance that the Airports Commission will re-assess the option of a four-runway hub airport at Stansted given the weak grounds on which it has been ruled out?

Cost evaluations

- 3.16 I welcome the recognition in the Commission's Interim Report that all options for new airport capacity will require a degree of Government funding. It is important that all options are compared on a level basis, as well as that potential delivery models and costs to the taxpayer are understood.
- 3.17 It is not clear, however, how the Commission has reached some of the baseline cost evaluations onto which allowances for risk and optimism bias have been added to produce the figures that it cites for each of the shortlisted options and for an Inner Estuary airport.
- 3.18 TfL estimates that the base cost of Heathrow's northwest runway proposal has been reduced by approximately 50 per cent (£8 billion) compared to the company's own estimate made in July. The cost of the Heathrow Hub proposal appears to have been reduced by approximately 25 per cent (£2.5 billion), while the Gatwick second runway proposal has not been reduced.
- 3.19 At the same time, the passenger capacity per annum of an Isle of Grain airport has been reduced by one-sixth compared to the option I submitted to the Commission in July 2013, and the base cost of the scheme has only been reduced by approximately 20 per cent (£10 billion).
- 3.20 Can you explain the basis on which different reductions have been applied to different options, and the specific reason why the costs presented by Heathrow Airport Ltd. have been reduced by a much larger percentage than the other schemes?

4 The Airports Commission's programme of work going forward

- 4.1 I understand that officers from TfL had a discussion on 27 January with the Airports Commission Secretariat about how the Commission intends to carry out the next stages of its work.

MAYOR OF LONDON

- 4.2 With regards to the work that is to be carried out on the three shortlisted options at Heathrow and Gatwick airports, I reviewed the Commission's procurement documentation for the consultancy expertise needed to conduct and review this work and was surprised to see that surface transport and socio-economic issues were not highlighted as areas of focus. As I have described earlier in this letter, those two areas will be significantly affected by any large infrastructure project such as the construction of new airport capacity. Can you give me your assurance that the Airports Commission has allocated resource specifically towards considering these two important areas in respect of shortlisted options?
- 4.3 I have offered to work with the Commission in respect of the four specific subjects that the Commission has said it will carry out studies on in respect of the for the inner estuary option. As I understand it from your letter, this offer has not been accepted. I am keen that we cooperate where possible to reduce duplication and keep the amount of public money spent on such work to a minimum so I would urge you to reconsider but, if it is not possible for you to change your mind on this, TfL will be conducting work on these areas as well.
- 4.4 One of the four subjects is the environment and the impact of a new hub airport on the Isle of Grain on protected habitats. This is highly dependent on the specific location and size of an airport scheme. To the best of my knowledge, however, the Airports Commission has not made clear exactly which inner estuary airport proposal they will be considering, given that four submissions from July 2013 are mentioned by name in the Airports Commission's Interim Report. Can you tell me the exact specification of the inner estuary airport proposal that the Commission will be considering and explain the rationale behind the Commission's choice of a hybrid option that, almost by definition, has been proposed by no-one? Can you further explain how the Commission proposes to take forward on an equal footing an inner estuary option if no "promoter" is willing to come forward and adopt it?
- 4.5 Another of the four subjects is to understand the views of airlines on the construction of a new hub airport. These views are important and should be understood, but they must be gathered carefully to produce a genuine impression of how airlines would react to a new airport project. At the very least, any consultation of airlines should involve a range of scenarios including how they would act if a new hub airport were constructed and Heathrow were closed. Can you give me your assurance that any engagement with airlines will be thorough and cover a range of scenarios? Will you be conducting studies of airline attitudes and behaviours in other cities where an airport has been moved to a new site? In my view, these would give a more realistic indication of airline attitudes than the hypothetical case you seem to be proposing to put to them.
- 4.6 At the same time as consulting with airlines, it is equally important to ascertain the views of potential investors in a large infrastructure project such as expanding Heathrow or Gatwick airports or constructing a new hub airport in the inner estuary. Initial discussions TfL and I have had with investment organisations have suggested that the delivery model of a new hub airport is an attractive one and investment would be forthcoming. At the same time, doubts have been cast about how interested investors (both new ones and existing owners) would be in investing in new infrastructure at Heathrow or Gatwick airports. Can you give me your assurance that the Commission will engage systematically with a range of potential investors with the aim of understanding their appetite for each of the airport capacity schemes under consideration?

MAYOR OF LONDON

- 4.7 The published intentions of the Commission are to carry out a national consultation on the three currently shortlisted options in October 2014; to make a decision on whether to include an inner estuary airport option on the formal shortlist in September 2014; and to carry out a national consultation on the inner estuary airport option, if it is shortlisted, at a point after October 2014, separately from the consultation on other shortlisted options.
- 4.8 Regardless of how it is presented, any consultation on different options will be viewed by consultees as a comparison exercise. It is therefore not acceptable if an inner estuary airport option is shortlisted in September 2014 and then consulted on separately from the other shortlisted options. If the national consultation is to begin in October 2014, then preparations must be made such that work on an inner estuary option is sufficiently advanced as to allow its inclusion in that consultation if it is shortlisted.
- 4.9 Can you give me your assurance that if an inner estuary option is shortlisted in September 2014 it will not be consulted on separately but will be included in any consultation alongside the three currently shortlisted options? In my view, separate consultations would be confusing and almost meaningless.
- 4.10 To address this, can you give me your assurance that the same work as is currently being carried out on the shortlisted options will be carried out on an inner estuary airport option prior to September 2014, to ensure it is ready to be included in the national consultation in October 2014 if appropriate? If you do decide to proceed with separate consultations, please will you let me know the legal basis on which you will be doing so.

I look forward to your reply and to discussing these questions further on 4 March.

Yours ever,



Boris Johnson
Mayor of London

Enc.

TfL Planning Briefing Note

The Airports Commission Interim Report: Key Issues

January 2014

1. Overview

- 1.1. The Airports Commission has been tasked by the Government with identifying and recommending options for maintaining the UK's status as a global aviation hub. Its Interim report, published in December 2013, is the first indication of how it will engage with the challenge. The issue is of vital importance for London and the UK.
- 1.2. In their Interim report, the Commission has shortlisted three options, two options at Heathrow and one at Gatwick. Each option comprises a single new runway. They have also set aside more time to develop and assess an option for a new hub airport on the Isle of Grain.
- 1.3. The Interim report and the recently published appraisal criteria places more weight on accommodating short term commercial interests, than a strategic vision for aviation which is able to secure the UK's long term economic prosperity. The Commission identify a significant capacity gap in 2050, but do not address this. They focus instead on runway capacity options to 2030. This does not provide the UK with a long term plan. Their approach also places inadequate weight on public health and quality of life, including air quality impacts, which are not considered in any detail.
- 1.4. The Interim report makes a number of sound observations, many building on the Mayor's responses over the last year to the five Commission Discussion Papers (available at <http://www.newairportforlondon.com>). However, some of the conclusions are inconsistent and incorrect, and in a number of instances the findings of the technical work it has commissioned have been diluted.
- 1.5. This document examines the approach taken by the Airports Commission's Interim report, considering each key issue in turn. For each, we start by setting out the Mayor's view, and then the evidence presented by the Commission in their Interim report. The conclusions the Commission have drawn and their implications are then discussed. The appendix collates the relevant extracts from the Interim report, by issue.
- 1.6. Overall, the Commission's work is rigorous. This is to be welcomed. However, if the Commission are to reach a sound conclusion, they must continue to work with external stakeholders, including the Mayor of London, who have a key role to play in ensuring that the development and assessment of those options on the table is

consistent and robust and capable of delivery.

2. The importance of a hub airport

The Mayor's view

- 2.1. Only a new hub airport can secure the global connectivity – on longhaul routes in particular – that London and the UK needs.

The evidence in the Interim report

- 2.2. The report observes the attractiveness of the hub to airlines and passengers alike – and its additional benefits to the wider economy, particularly from serving longhaul routes. It recognises that all destinations are not of equal economic value: for example it cites that each flight from Heathrow to China on average carries more than £1 million in goods exports. The report also flags the risk that airlines could readily locate elsewhere if they are unable to operate an effective hub in the UK.
- 2.3. The Commission's connectivity analysis concludes that a dispersed capacity option only fares slightly worse than a concentrated (hub) option in terms of the number of destinations served. It reports the findings of the Mayor's own connectivity analysis, which identified that a hub airport would support a much wider range of destinations, longhaul in particular, than dispersed capacity. The Commission might have usefully assigned a greater value to different types of destination in their analysis.

The Commission's conclusion

- 2.4. The Commission is non-committal as to whether hub capacity is an essential requirement, in spite of the thrust of their own evidence. They recognise the value of the hub, but also overplay the role of Gatwick today and in the future (and underplay its inherent weaknesses in competing with the hub).

What this means

- 2.5. By placing insufficient value on the benefits of the hub, the Commission can justify looking at the capacity gap across London airport system as a whole. In this, they are mistaken – it is a hub capacity shortfall that is already in evidence and that will have by far the most severe consequences if not addressed.

3. The future shape of the aviation industry

The Mayor's view

- 3.1. Hub airports will continue to underpin global aviation and longhaul travel in particular. Current trends point to the emergence of a smaller number of globally competitive hubs, with sub-standard hubs unable to compete. The growth of low-cost carriers (still largely focused on flying shorthaul) and major Gulf carriers do not fundamentally alter this pattern – indeed, the latter are helping drive the trend).

The evidence in the Interim report

- 3.2. The report puts forward a number of potential scenarios in terms of the relative

importance of hub and non-hub airports. They suggest that non-hub Gatwick airport, could support growth in both point-to-point and transfer traffic, which to date, it has been unable to do. The Commission do however recognise that hub airports can fulfil both roles, and that at Amsterdam and Paris CDG for example, low-cost carriers serve the hub airport.

The Commission's conclusion

- 3.3. Having focused on the scenarios in some detail, the Commission do not decisively accept any one.

What this means

- 3.4. Only development of a single 4-runway hub airport can effectively respond to all potential outcomes. If we choose to provide dispersed capacity, we would leave the UK without an effective hub. Our connectivity will be eroded, with valuable traffic – and routes – migrating to foreign hub airports.

4. The hub and the connectivity of the UK regions

The Mayor's view

- 4.1. Connectivity to the hub from UK domestic locations is essential in securing access to global markets and economic opportunities for the UK regions. The hub needs to have sufficient spare capacity if airlines are not to make trade offs between domestic and longhaul routes, which we see happening at Heathrow today.

The evidence in the Interim report

- 4.2. The report leaves one in no doubt that domestic flights to the hub are essential for the economy of the UK regions, that the steady erosion in domestic access to Heathrow is already harming regional connectivity and that without new capacity this will only become worse.
- 4.3. At the same time, the report points to the “transformational” impact of low cost airlines and Gulf carriers for UK regional connectivity – even though in the data they present, this is almost wholly attributable to holiday routes to North Africa and a handful of routes linking five UK cities with the three Gulf hubs.

The Commission's conclusion

- 4.4. The Commission draws no overall conclusions about regional connectivity beyond the observations made, nor do they set out the implications in terms of the future provision of airport capacity.

What this means

- 4.5. Having identified the serious national impacts of the hub airport capacity constraints today, the Commission does not follow the logic through and so fails to draw the conclusion that new hub capacity is the only solution to this worsening connectivity gap.

- 4.6. Based on the Commission's figures, a 3-runway Heathrow would effectively be full by 2030. In such a scenario, domestic destinations would continue to be traded off against lucrative longhaul routes and the decline in UK regional connectivity would continue unabated. Only a new four-runway hub can address this.

5. Capacity: the crisis today

The Mayor's view

- 5.1. There is a capacity crisis today, specifically at Heathrow. The UK's airport that most resembles a hub is full. This is harming both reliability and connectivity and is already undermining the UK's economic competitiveness.

The evidence in the Interim report

- 5.2. The Commission cite evidence for the severe impact that capacity constraints at Heathrow are having today on its reliability and connectivity. With regard to the latter, the report highlights the trade offs being made and that some routes are already being reduced or eliminated in favour of higher frequencies on other routes. This is leaving Heathrow and the UK with worsening access to global markets compared to its rivals.

The Commission's conclusion

- 5.3. The Commission conclude that "the UK does not face an immediate capacity crisis". Developments at Gatwick, BA's purchase of bmi and its slots, and opportunities arising from the growth of the low-cost sector and the Gulf carriers are all used to justify this claim.

What this means

- 5.4. There is considerable evidence that there is a serious capacity problem today, primarily at Heathrow, the importance of which the Commission appears to ignore. This paves the way for them to propose not only a wholly inadequate capacity intervention for 2030 which ignores the importance of the hub, but moreover that is incompatible with forecast growth to 2050 and beyond.

6. Capacity: the gap in 2030

The Mayor's view

- 6.1. Given the importance of a hub, the capacity gap that exists today, and the scale of forecast growth, there is a clear forecast need for a 4-runway hub airport in 2030.

The evidence in the Interim report

- 6.2. The Interim report recognises that Heathrow is already full and that excess demand will be concentrated on Heathrow. However, the Commission's capacity analysis is aggregated at London system-wide basis. System-wide, they forecast demand to be 11% over capacity in 2030. At Heathrow, the figure is concealed, but will be far greater.
- 6.3. The Commission forecasts that by 2030, a 3-runway Heathrow would also be full,

operating at up to 90% capacity: this level of runway utilisation would continue to have severe impacts on the airport's resilience and its ability to operate as an attractive hub. By contrast, rival European hubs such as Paris CDG, Amsterdam and Frankfurt all follow international guidance, with runway utilisation of 70–75%.

The Commission's conclusion

- 6.4. The Commission cite the system-wide capacity gap to conclude that one additional runway will be required by 2030, with a second "likely to be needed" by 2050.

What this means

- 6.5. This does not address the issue that a 3-runway Heathrow hub would be full shortly after opening. This would have profound consequences for its effective operation. The only credible solution for addressing the capacity challenge in 2030 is a new hub airport with a greater capacity than they envisage. The Mayor has demonstrated that such levels of capacity can be fully compatible with our legally binding climate change commitments.

7. Exposure to aircraft noise

The Mayor's view

- 7.1. Aviation noise is a fundamental issue. Technological and operational progress will not sufficiently address its impacts. A 3-runway Heathrow cannot avoid very significant exposure to noise for hundreds of thousands of Londoners. Aviation noise has been proven to have severe public health impacts. Such levels of exposure are a wholly unacceptable basis for expansion.

The evidence in the Interim report

- 7.2. The report observes the trend of decreasing average noise per aircraft movement – though their data also shows that the rate of technological progress with regards to aircraft noise has all but petered out over the last decade.
- 7.3. The report acknowledges that Gatwick expansion, by leaving Heathrow in place, cannot match the potential of a new hub to reduce overall noise impacts.

The Commission's conclusion

- 7.4. The Commission estimate that a three-runway Heathrow would expose 357,000 or 386,000 people (depending on option) to noise at 55dB L_{den} in 2030. This compares to 766,000 people exposed by Heathrow today and 600,000 people according to Heathrow Airport's own submission.

What this means

- 7.5. Important questions are raised as to the assumptions the Commission have used. Nonetheless, it is clear that even these estimates would still leave Heathrow, by some margin, as the worst airport in Europe for population exposed to noise. Even if such a level of technological and operational improvement were achievable, there would be a valuable opportunity – not considered by the Commission – for the

benefits of these improvements to be 'banked'. One response to such an improvement in noise could be to choose not to expand the airport, and substantially reduce the severe public health impacts on communities around Heathrow.

- 7.6. Both shortlisted Heathrow options would dramatically erode the noise respite periods from which residents currently benefit. The Commission downplays these impacts. The northwest option would leave the majority of affected residents with just 4½ hours respite per day (as opposed to 9 hours currently). Extending the northern runway to run it in mixed mode all the time would entirely eliminate any respite under its arrival and departure paths.

8. Airport surface access

The Mayor's view

- 8.1. Surface access is a fundamental aspect to airport expansion. Whether a new or existing site, sufficient provision as part of an attractive and sustainable surface access offering must be planned for and costed. Airport expansion must not place undue strain on existing and planned surface access infrastructure to the detriment of current and future non-airport traffic.

The evidence in the Interim report

- 8.2. The report rightly recognises that surface access is integral to the airport proposition – though it underplays the importance of improving on the public transport mode share achieved by existing airports.
- 8.3. The report also suggests that airport surface access improvements should be considered ahead of the needs of and regardless of the impact on non-airport users.

The Commission's conclusion

- 8.4. For a new runway at Gatwick, the Commission proposes limited interventions (around £1bn capital spend). It expects the additional pressure on transport links to be substantively mitigated by already committed improvements.
- 8.5. For a new runway at Heathrow, the Commission also propose limited interventions (£2-3bn capital spend). They assume many necessary infrastructure improvements will be provided, independent of expansion, but that they will have the capacity to accommodate the airports growth.

What this means

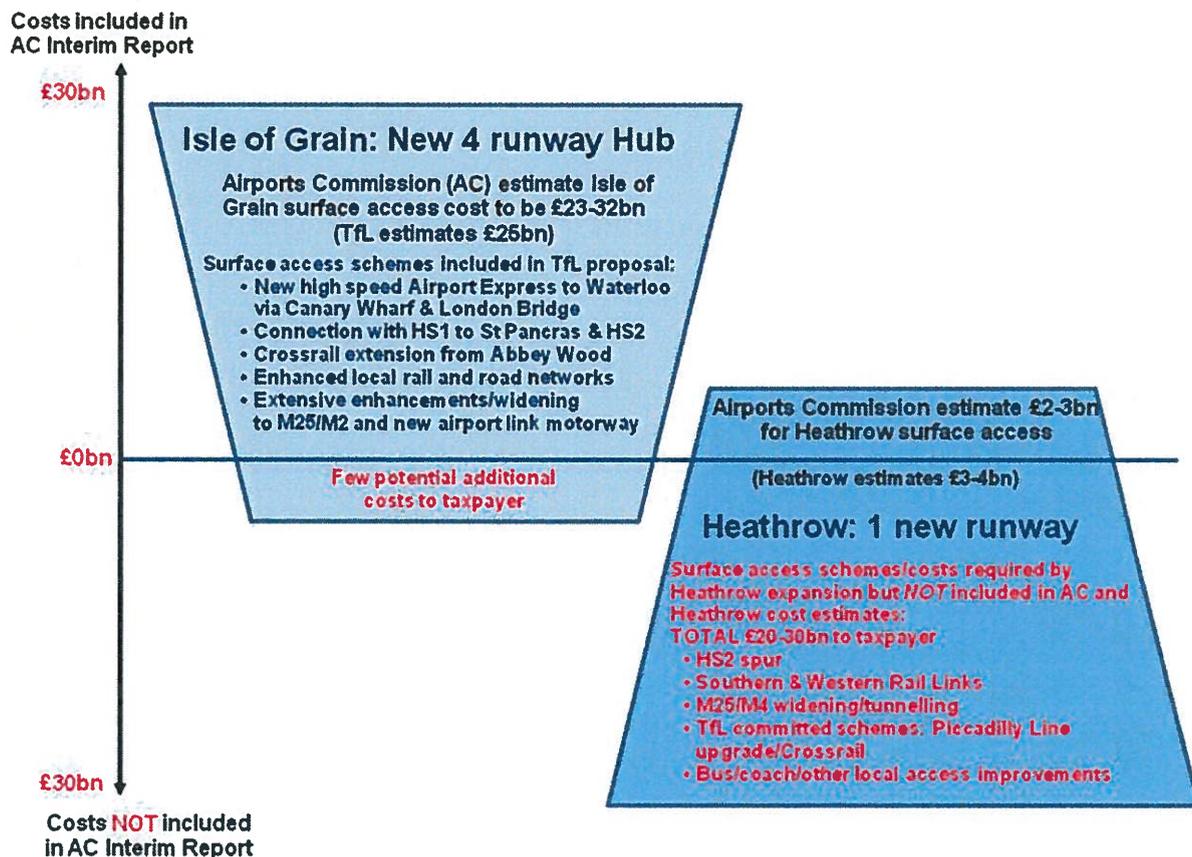
- 8.6. Firstly, the Commission need to be absolutely clear that planning for a scenario which significantly worsens conditions for non-airport users of the surface transport network cannot be justified.
- 8.7. At both Heathrow and Gatwick, the Commission have underestimated the surface access requirements. In the case of Gatwick, they seem not to appreciate the severity of the existing capacity constraints on the Brighton Main Line, which is at capacity

today, and for which Network Rail have not been able to identify a simple solution (short of a new tunnelled route to central London).

8.8. Indeed, the Commission’s own technical option sift reports (prepared by Leigh Fisher) say that Gatwick-London rail capacity will only "just about cater for total rail demand" and "only if pricing and other mechanisms are applied" to spread airport and non-airport demand – i.e. potentially pricing off commuters at certain times of day.

8.9. In the case of Heathrow, the Commission does not acknowledge the possibility that the airport might be responsible for placing undue pressure on existing transport networks. They instead anticipate these problems being addressed through non-airport related investment. The Commission must also remember that some of the planned transport schemes that they mention (such as Crossrail) have not been designed with the capacity to support an expanded Heathrow.

Figure 1: Schematic illustrating the Airport’s Commission’s approach to surface access costs



8.10. The Mayor is keen to work alongside the Commission to ensure a robust and meaningful comparison across options, as their work progresses. It is essential that the assessment of surface access demand for all options takes into account the substantial background growth due to take place across London and the South East.

9. Airspace

The Mayor's view

- 9.1. Work commissioned by the Mayor from National Air Traffic Services (NATS) has confirmed that each of the options the Mayor submitted to the Commission would not restrict operation – in airspace terms – of other London airports.

The evidence in the Interim report

- 9.2. The report's table of airspace impacts indicates that a Stansted hub option would impact Luton and City while a Grain option would require closing City airport.
- 9.3. However, buried in a footnote, the report recognises that it is impossible to determine the precise impacts without advanced modelling. Furthermore, it acknowledges that redesigning the airspace system, together with technology advances, could enable interactions between airports to be designed out.

The Commission's conclusion

- 9.4. The Commission ignores the important details in the footnote but instead, use their broad interpretation of the airspace findings to limit the scale of benefit of an Isle of Grain hub and to substantively rule out a Stansted hub entirely.

What this means

- 9.5. Activities following on from the current London Airspace Management Programme (LAMP) in the next decade are likely to entail a substantial recast of the airspace over London and the southeast – and this would fit with the timescales for new airport capacity. In assessing their options based on the current airspace architecture, the Commission would seem to underestimate this opportunity. This approach has likely biased their work in favour of existing airport locations.

10. A new hub in the Thames Estuary - impacts

The Mayor's view

- 10.1. The Isle of Grain hub is uniquely equipped to deliver very significant benefits for the economy both at local, regional and national level, as well for public health. The relocation of Heathrow, far from being detrimental or impossible to deliver, is feasible and offers an attractive opportunity for West London. More generally, though there are undoubtedly challenges, the work undertaken to date confirms none to be insurmountable.

The evidence in the Interim report

- 10.2. The Interim report recognises some of the unique benefits of the Isle of Grain, including the low noise exposure, regeneration potential and operational flexibility – and that *“the scale of benefits associated with such a proposal is potentially greater than for any of the other options.”* However, the report plays down many of these economic benefits, mostly on the basis of insufficient time for proper analysis and quantification.

- 10.3. In comparison to the shortlisted options, the Interim report describes the surface access infrastructure required for an Estuary option as “daunting”. Based on their assessment of a potential surface access network, the Commission have calculated a smaller catchment area for the Estuary than Heathrow. This is however, in no small part because an HSI -HS2 link has not been assumed for an Estuary option. For Heathrow, a (less certain) spur to HS2 has been assumed. It is worth noting that an HSI -HS2 link has been earmarked for Phase 1 of the HS2 project, while an HS2 spur to Heathrow is not envisaged before Phase 2.
- 10.4. In comparison to the shortlisted options, the report describes the surface access infrastructure required for the Estuary as “daunting”. A smaller catchment area for the Estuary than Heathrow is calculated – though this is in no small part because an HSI -HS2 link has not been assumed – whereas a (less certain) HS2 spur to Heathrow has been.
- 10.5. Also raised are the issues that that closure of Heathrow would entail – both in terms of the associated cost and risks associated with redevelopment, as well the local economic impact. However, the Commission’s own technical paper (produced by Leigh Fisher) recognises that the airport was but one factor in facilitating businesses to locate in the M4 corridor and that there would be plenty of time to arrange employment transitions if the airport ‘relocated’.
- 10.6. The Interim report states that the risks and delivery challenges of a new airport are higher than incremental expansion. Yet it seemingly ignores the costs and complexities of building around an operational airport.

The Commission’s conclusion

- 10.7. Despite the advantages of a new Estuary hub, the, Commission cite the various potential challenges and need for further analysis as reasons to refrain from shortlisting the Isle of Grain at this stage.
- 10.8. In concluding, the Commission states that the Estuary option’s noise benefits “are bound to seem attractive” while the socio-economic benefits are deemed an “alluring prospect.”

What this means

- 10.9. The recognition of the potentially superior benefits of an Isle of Grain option is welcome.
- 10.10. In terms of habitats, the Commission has, by ruling out all hub options except Heathrow (with its noise impacts) and the Estuary, laid the foundations for answering the alternatives test; the public health benefits of closing Heathrow would seem to meet the public interest test; while high level work to date suggests that the compensatory habitat, though challenging, can be provided.
- 10.11. With regard to surface access intervention, when Heathrow and Gatwick are

compared on a similar basis, there is no discernible difference in scale of intervention. Contrary to the Commission's findings, work undertaken for TfL indicates that the catchment of an Isle of Grain would be similar to that of Heathrow.

- 10.12. There are a number of advantages to redeveloping the Heathrow site. The concerns raised are largely unfounded.
- 10.13. Though some obvious challenges are raised, none are insurmountable nor should they preclude unlocking the significant long term benefits of an Estuary hub.
- 10.14. On January 16th, the Commission published a document setting out their process for developing and assessing an Isle of Grain option, and the criteria against which it and the shortlisted options will be assessed. It is essential that this is done on a fair and consistent basis. The Mayor looks forward to working with the Commission to ensure they have the detail they require to reach their final judgement.

11. Costs

The Mayor's view

- 11.1. The Mayor's work has demonstrated that the cost of a new hub airport at the Isle of Grain and the necessary rail and road links to serve the airport, is comparable to the cost of expanding Heathrow to a four runway airport.

The evidence in the Interim report

- 11.2. The Commission has derived its own base cost estimates (airport and access components) from the submissions they received in July. They have then applied broadly consistent allowances for risk and optimism bias across all the options.
- 11.3. However, of the shortlisted schemes, the base cost of Heathrow's northwest runway option has been reduced by around 50% (£8bn) (from the promoter's own estimate made in July). The cost of the Heathrow Hub option reduced by around 25% (£2.5bn) and the cost of a second runway at Gatwick is broadly unchanged. The base cost for the Commission's Isle of Grain option, which has capacity for one-sixth fewer passengers per annum than the Mayor's Isle of Grain proposition, has been reduced by around one-fifth, or £10bn.
- 11.4. The Commission continues to treat the surface access requirements for each option inconsistently. In part, this is because calculations about surface access capacity to Heathrow and Gatwick take limited account of background demand. £2-3bn is identified as the appropriate surface access infrastructure base cost for both the two shortlisted Heathrow runway options, as well as a four runway Heathrow option (which was not shortlisted). £1-2bn is identified for surface access improvements for an expanded Gatwick Airport.
- 11.5. In contrast, up to £35bn is identified as the base cost for the surface access infrastructure for the Isle of Grain option. This infrastructure will generate brand new

journey opportunities and accommodate non-airport population and employment growth, which the report acknowledges.

The Commission's conclusion

- 11.6. The Commission report that an Isle of Grain airport is around four times more expensive than a new runway at Heathrow, and seven times more expensive than a second runway at Gatwick. On this basis, they conclude that a new hub airport will require an increase in airline charges equivalent to 3.5 times that allowed within Heathrow's current charging regime.
- 11.7. The Commission acknowledge that all options would require some form of Government funding.

What this means

- 11.8. An Isle of Grain airport is potentially unaffordable, and appears far more expensive than the shortlisted options, if the Commission's approach is followed.
- 11.9. The Mayor does not agree with the Commission's approach to costs, which is inconsistent and biased towards the development of new runways at Heathrow and Gatwick. A like-for-like comparison of the airport and surface access costs is essential.
- 11.10. Recognition that all options will require Government funding is welcome.

12. Short and medium term options

The Mayor's view

- 12.1. Short and medium term measures are not a solution to the capacity challenge. There are a number of useful proposals, notably surface access improvements to Stansted that could improve the immediate situation. However, several measures would have very severe impacts; these include permitting more landings at Heathrow in the restricted 05:00-05:59 period when the vast majority of people are asleep and potentially the introduction of mixed mode in the medium term, ending all respite.

The evidence in the Interim report

- 12.2. The Commission groups the measures into three themes: 1) more effective operation of UK airports and airspace, 2) promoting use of under-utilised capacity and 3) medium term options which only make sense as part of a long term scenario for adding capacity.

The Commission's conclusion

- 12.3. The Commission would like to see a whole series of measures introduced at Heathrow, including Tactical management of arrivals throughout the day 'TEAM', Early morning smoothing, the ending of westerly preference, and potentially mixed mode operations.
- 12.4. The Commission also support the establishment of an Independent Aviation Noise

Authority, and the exploration of a number of surface access initiatives at Heathrow, Gatwick and Stansted.

- 12.5. The Commission also asserts that the benefits of the measures are “contingent upon the delivery of the entire package,” thanks to “complex interdependencies” and that “attempts to pick and choose...will substantially reduce the overall benefits.”

What this means

- 12.6. The Commission’s proposed noise regulator falls short of what the Mayor and others have been calling for, without any effective enforcement power. The risk is that could become little more than a fig leaf for expansion at Heathrow.
- 12.7. Investment in Stansted rail access is welcome, not least in also supporting regeneration along the corridor. Investment in access to Gatwick largely looks towards minor enhancements, while ignoring the fundamental lack of capacity on the Brighton Main Line. For Heathrow, it is difficult to justify substantial investment in surface access as contributing to “making best use of existing capacity”, when the airport has no spare aviation capacity to make use of.
- 12.8. There are some sensible proposals for improving operational efficiency such as Airport Collaborative Decision Making. But many threaten to worsen the noise exposure for Londoners (some of which were trialled, with limited discernible benefit). Not all options have the same impacts and it is difficult to see why they should be so intertwined as the Commission assert.

Appendix: Evidence from the report (Summary and detail)

A. The importance of a hub airport

The hub and its transfer flows are key to route viability

“Long-haul routes, whose higher cost base requires a greater concentration of demand, are focused heavily on the London airport system, and particularly at Heathrow.” [3.11]

“If capacity constraints at (Heathrow) airport are not alleviated...transfer passengers drop from 22.6 million in 2011 to less than 4 million in 2050, and the number of destinations served from the airport fall by roughly 20% over the same period.” [3.93]

All routes are not equally valuable

“An increase in short-haul leisure services to destinations such as Ibiza or Crete may have no noticeable impact on trade or FDI, whereas other destinations will be likely to increase trade by a much larger extent. For example...on average each flight from Heathrow to a BRIC country carries more than £400,000 in goods exports, with flights to China averaging more than £1 million.” [3.110]

The hub is uniquely attractive to airlines

“The attractiveness of Heathrow to airlines is in part driven by its high yields compared to other London airports. In 2012, airlines operating out of Heathrow earned approximately 21 US cents per passenger mile on average. In contrast, the average yield at Stansted was approximately 15 cents per passenger mile and at Gatwick just under 10 cents.” [3.18]

Airlines are mobile – though London remains a large OD market

“On the one hand, airlines are truly global in nature and many of them may have a high degree of flexibility when it comes to locating their bases. This point may be especially relevant for Europe, where distances between major airports are not as great as on other continents and, as a result, competition for international-to international transfer passengers may be higher. On the other hand, London as a global city provides airlines based there with access to currently the biggest OD market in the world.” [4.87]

Connectivity of hub and non-hub options similar – if destinations given equal value

“London airport system is likely to deliver slightly better connectivity outcomes under a concentrated model, in terms of the number of destinations served. However, the difference is not as marked in London as it would be for many cities globally as London has the biggest origin and destination market in the world, theoretically big enough to sustain two independent hub airports.” [4.82]

London Airport System destinations

2030 CO2 traded destinations: Dispersed 211 vs Concentrated 217

2050 CO2 traded destinations: Dispersed 248 vs Concentrated 249”

[Table 4.6]

B. The future shape of the aviation industry

Any capacity solution must fit with all future scenarios

“The Commission does not believe there is a binary choice between providing additional hub capacity or additional point-to-point capacity. Instead, the optimal approach is to continue to invest in an airport system that caters for a range of airline business models.” [4.75]

“Given the lack of consensus around the way the sector will develop, it will be important for the Commission’s final recommendation to be one whose economic and commercial case is robust in a range of different future scenarios.” [4.90]

Low-cost carriers are not at all allergic to large hub airports

“Low-cost carriers also no longer operate only to secondary airports; they account for a substantial proportion of traffic at both Schiphol and Charles de Gaulle, and even at Heathrow and Frankfurt some low-cost services operate.” [2.35]

C. The hub and the connectivity of the UK Regions

Domestic hub connections are of economically vital – and being eroded

“Domestic connections at Heathrow and other London airports are of economic significance for both London and the regions. The regions benefit both from access to the capital’s economy and from the long-haul connectivity they can access via Heathrow. London benefits from the contribution that those regional passengers make to enhance the business case for its long-haul routes.” [4.69]

“In terms of overall connectivity, whereas London’s connectivity is on a clear upwards trend since the effects of the recession, the weakening in links to Heathrow has contributed to a continuing decline in (UK) connectivity as measured using the IMF weightings.” [3.87]

“By 2040, unless capacity is expanded...the number of domestic destinations served daily from Heathrow will have fallen further to only four.” [3.85]

There have been some improvements in UK regional connectivity

“The impact of the low-cost airlines and Gulf carriers on UK regional connectivity to destinations outside Western Europe has been transformational.” [3.33 and Figure 3.9]

D. Capacity: the crisis today

There is a severe capacity gap at Heathrow today impacting resilience and connectivity

“(Heathrow operates at) almost 98% capacity... This rate of capacity utilisation is well above the point at which high levels of reliability can be maintained and delays avoided.” [3.54]

“If, having implemented the package of short-term measures, no further action was taken to deal with capacity constraints in the London airport system...these costs would have a present value of approximately £1.8 billion over the period from 2021 to 2080.” [3.64]

“With Heathrow effectively full, airlines (have been) concentrating on the thickest routes. This has led to service frequencies gradually increasing but the total number of destinations served each week remaining broadly constant over time.” [3.17]

“Although Heathrow remains the world’s busiest international airport, its total route network is less extensive than those of all the other main European hubs, and its long-haul route network smaller than all except for Madrid... Heathrow has a strong route network into India compared to other European hubs, but has fewer connections than some other European hubs to Brazil, mainland China and Russia. The same broad pattern is seen in relation to the second group of emerging market countries.” [3.71-3.74]

“Capacity constraints at Heathrow are preventing London achieving the level of connectivity in these markets that might be expected given the comparative strength of its OD market. Options for airport expansion in the UK will need to facilitate new connections to economically important destinations while maintaining the UK’s strong position in serving European and North American markets... Given the dominant role of the London airports system, these constraints have meant that overall UK connectivity has also declined in relation to its peers. Using the IATA weighting, Germany now outperforms the UK in terms of total connectivity.” [3.80-3.81]

Between 2002 and 2012, BA increased the overall capacity of its route network...by 14%, whereas Lufthansa increased its network by 50%, KLM by 37% and Air France by 29%.” [3.82]

There are severe challenges but the UK does not face an immediate crisis

“The impacts are already being felt in terms of delay and unreliability, and there is some evidence of an impact on fares. It is also becoming clear that capacity constraints could mean expansion of new connections to economically important places are traded off against the UK’s current strong position serving Europe and North America. Nonetheless, the UK does not face an immediate capacity crisis.” [3.123-3.124]

E. Capacity: the gap in 2030

The future capacity gap is assessed – but only on a system-wide basis

“Projected years when London and South East airports become full, in the ...capacity constrained forecast: Heathrow 2010, Gatwick 2020, City 2024, Luton 2030, Stansted 2041.” [Figure 4.4]

“Excess demand in the London airport system is forecast to be concentrated particularly on

Heathrow, which remains full across all the demand scenarios considered... (As) the UK's aviation market is evolving... new options for meeting passenger needs and effectively addressing the forecast gap...may develop. [4.23]

However the difference between the (carbon capped and traded) forecasts is relatively modest, with unconstrained passenger numbers only 18% higher than in the carbon capped scenario and ATMs roughly 16% higher. [4.27]

"The analysis shows that there is a clear case for at least one net additional runway by 2030 across a range of scenarios... There would...likely...be a demand case for a second additional runway in operation by 2050 or, in some scenarios, slightly earlier." [4.92-4.93]

Capacity headroom is essential to ensure the hub is optimised and resilient

"Not all airports are equally suited to hosting an aviation hub. Typically an airline or alliance will want to concentrate its flights into 'waves' of arrivals and departures, with a short interval to transfer arriving passengers and luggage onto connecting flights. To facilitate this, the airport must have sufficient runway, apron, and terminal capacity to enable this type of scheduling." [Box 2b]

"100% utilisation of the theoretical maximum runway capacity across the whole of the London airport system is unlikely to be either desirable or feasible... It would entirely remove any scope to manage periods of severe weather or other incidents, and would be likely to increase the levels of unreliability and delay" [4.25-4.26]

A 3-runway Heathrow would be operating at up to 90% capacity in 2030

"The Commission's forecasts indicate that a new runway at Heathrow would be very well-used, with the expanded airport operating at around 80-90% of capacity by 2030." [6.88]

F. Exposure to aircraft noise

Average noise per aircraft movement has decreased – but trend has slowed

"A continuous rise of air traffic movements at the airport has been accompanied with a steady fall of numbers of people who live within the 57LAeq contour, the standard UK metric for assessing aviation noise impacts... Although this trend has slowed significantly over the last decade, further reductions in noise impacts can be expected over the coming years." [3.24 & Figure 3.67]

Heathrow remains by far the worst option for noise exposure

"Summary of various key data from stage 5 analysis: 55dB L_{den} 2030 local
LHR NW 380,900
Heathrow Hub 357,100
LGW 2 runway 22,200
Estuary 5,600

LHR 4 runway 382,000”

[Interim report Appendix 2: Table 6.1]

Overall noise impacts of Gatwick option are greater than a new hub

“The proposal (for expansion at Gatwick Airport) does not offer the same potential to reduce overall noise impacts as a new hub airport” [6.80]

G. Airport surface access

Surface access is integral to the airport proposition

“If passengers do not want to travel to an airport because of the quality of its surface transport, airlines will be less likely to schedule flights to or from it. Poor surface transport can send the message that an airport is ‘second best’ or ‘not the city’s main airport’.” [5.87]

One should prioritise transport investment for airport users over non-airport users

[With regard to short term measures:] “Congestion on (road and rail) infrastructure...can force difficult decisions between the interests of airport users and other travellers... There is a strong case for attaching a greater strategic priority to transport investments which improve surface access to our airports.” [5.88]

Significant impacts on non-airport users could in certain circumstances be justified

[A criteria for surface access proposals deemed to be medium term:] “Significant impacts on commuters and other users of surface transport networks that cannot be justified on the basis of current or short to medium term forecast.” [5.128]

Surface access infrastructure require for Gatwick is limited

“Expansion...would place additional pressure on transport links, although that will be mitigated to some degree by improvements already committed.” [6.77]

Surface access infrastructure require for Heathrow is limited

“Given the extensive existing and planned transport connections to the airport, additional surface access requirements are limited.” [6.94]

Some key Heathrow surface access schemes will not be costed as part of expansion

“A high speed rail spur from the main HS2 line to the airport is not included in the cost estimate, but the Commission will consider the case for this as part of its review of surface access options.” [6.94]

“Background increases in traffic over the period to 2030 will already push the heavily congested local motorway network beyond capacity and therefore action will need to be taken with or without expansion at the airport. For this reason, more significant motorway enhancement costs are not included in the Commission’s cost estimate.” [6.95]

H. Airspace

Operational assessment based on existing airspace architecture is of limited value

“Given the complicated multidimensional nature of airspace management, it is not possible to say what the precise impacts of an airport proposal will be - in the absence of Fast Time Simulation modelling... Redesigning the London airspace system and incorporation of new technology may also offer opportunities to ‘design out’ some of these interactions and further increase the potential of the system, thus the above table represents the impact on the system’s current architecture.” [Footnote 131, Table 6.1]

I. A new hub in the Thames Estuary - impacts

There are very significant benefits of an Estuary option

“The proposals from the London Mayor and others to build a four runway airport on the Isle of Grain... were likely to represent the most viable of the options for development in the Estuary.” [6.24]

“It would deliver the most significant reduction in overall noise impacts of any of the options considered other than an island airport.” [6.27]

“It could make a significant contribution to local regeneration. The (nearby) local authority areas...experience...higher levels (of deprivation) than at the vast majority of sites considered by the Commission. A new airport could be a substantial generator of economic activity in the region and provide significant new employment opportunities – around 100,000 jobs at the airport alone in the 2030s, plus additional related wider employment.” [6.27]

“The closure of Heathrow could offer a very substantial site for redevelopment, with on some estimates scope to provide homes by 2050 for around 150,000 people.” [6.27]

“It would provide a significant increase in hub airport capacity which would likely be subject to fewer operational limitations than Heathrow. In particular, its very low noise impacts would offer the opportunity to operate 24 hours a day, increasing its flexibility.” [6.27]

“The scale of benefits associated with such a proposal is potentially greater than for any of the other options.” [6.44]

There is scepticism as to whether the key benefits are actually attractive or attainable (emphasis added)

“The prospect of a new hub airport that fundamentally alters the current relationship between airport operations and local noise impacts is bound to seem attractive, particularly for the many thousands affected by noise around Heathrow.” [6.41]

“Supporting the shift of London’s economic centre of gravity eastwards to allow for further

expected population growth, combined with a major redevelopment opportunity of the Heathrow site, is an alluring prospect.” [6.41]

J. Costs

There would be a role of Government funding regardless of the option chosen

“Any significant expansion in airport capacity would likely be beyond the capability of the private sector to achieve alone. All the options considered therefore would be expected to require some level of public support, be that Government guarantees for finance or the construction of associated public transport infrastructure to reduce the risk sufficiently to encourage private investment.” [Box 6c]