House of Commons

Transport Committee

Aviation Strategy

First Report of Session 2013–14

Volume I

HC 78-I

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Volume I: Report, together with formal minutes. Oral and written evidence contained in Volume II and additional written evidence contained in Volume III are available on the Committee website at www.parliament.uk/transcom

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Summary

Aviation contributes to the UK economy and enriches the lives of citizens by providing frequent flights that connect with numerous destinations important to business and all parts of civil society.

"Hub" airports have a particular role in delivering air connectivity because they can serve additional destinations at a higher frequency than other airports. Airlines based at a hub airport capitalise on demand from both passengers in the airport's local catchment area and transfer passengers. The latter includes those flying in from less well connected parts of the UK. Transfer passengers therefore help to feed demand for onward destinations and some air services rely on this pooling process to remain commercially viable. Regular flights to a wide range of global destinations are therefore only viable from a hub airport.

The UK's hub airport is of great importance to all parts of the nation as it plays a unique role that cannot be adequately fulfilled by a non-hub airport. For this reason we conclude that it is imperative the UK maintains its status as an international aviation hub.

Demand for air travel across the UK is forecast to increase and aviation should, in our view, be permitted to grow. While we have no reason to doubt the overall analysis of national demand, there are questions remaining about the long-term forecasts. For example, they may not take into account factors such as the impact of HS2.

We recognise there is a specific capacity problem at Heathrow Airport. It is the UK's only hub airport, it has been short of capacity for a decade, and it is currently operating at full capacity. Furthermore, there is a lack of capacity to meet demand during peak hours across all airports within the south east. We believe it is impractical to suggest that Heathrow's problems could be resolved by shifting commercial flights deemed to be of a "specific" type (for example, leisure flights) to another airport. Moreover, demand could not easily be switched between different geographical locations.

Therefore, we accept there is a clear need for greater capacity at the UK's hub airport and have looked at three main strategies for addressing this problem: building an entirely new hub airport, linking existing airports by high-speed rail to form a split-hub, and expanding one or more existing airports.

There are significant challenges associated with building a new hub airport to the east of London as well as significant potential impacts on wildlife habitats in and around the Thames estuary. It is unclear how many people would be affected by noise from such a new hub airport as both it and the surrounding community grew. We do not believe a new hub airport should be built at this time: as research we commissioned showed, it will not be commercially viable without significant public investment in new infrastructure; it will only be viable if Heathrow closes as a commercial airport; and the closure of Heathrow would, in our view, be unacceptable.

We also reject the split-hub concept as passenger transfer times would be highly uncompetitive compared to those at other hub airports overseas.

Looking at expansion of one or more existing airports, we note Gatwick's vision for a second runway and encourage the airport's operator to develop a robust business case. However, on their own, new runways distributed across a number of airports will not provide a long-term solution to the specific problem of capacity at the UK hub airport. We conclude that expansion of Heathrow is necessary and recommend that the Government permits this to happen.

While British business overwhelmingly favours this option, we acknowledge the very real environmental concerns expressed by residents living in the vicinity of Heathrow. People affected by noise from an expanded Heathrow must be adequately compensated so we recommend that the Government and the aviation industry develop a comprehensive nationwide approach to noise compensation. We would also like the Airports Commission to assess what conditions may realistically be applied to an expansion of Heathrow in order to mitigate noise pollution.

Bluntly, we consider that the current situation is unsustainable and that a third runway at Heathrow is long overdue. Depending on the position of future runways, a fourth runway might also be viable. The four-runway proposal (west of Heathrow's existing site) has merit, particularly as relocated runways could reduce the noise levels currently experienced by many people affected by the flight path. We call on the Airports Commission to assess the feasibility of this proposal.

We also looked at the role played by airports outside the south east. We recommend that the Government take a more active role in promoting these airports, from which passengers either travel directly to their final destination or access additional destinations via a hub airport. We call on the Airports Commission to assess the impact of introducing an unrestricted open skies policy outside the south east to help these airports secure new direct services. We also recommend that the Government investigate whether it should protect slots at Heathrow for feeder services from poorly served regions.

We note the significant problems that exist with surface connections to major airports. We call on ministers to develop a coherent strategy to improve rail and road access to the UK's major airports. We conclude that Gatwick and Stansted—currently served by congested commuter lines—should each be served by a dedicated express rail service. We note that Heathrow will shortly be served by Crossrail but is not yet on the main national rail network. Although we acknowledge that a western rail access to Reading and the Great Western network has been announced. Heathrow should, if it expands as we recommend, be served by the new High Speed 2 rail network.

As part of this inquiry we also considered taxation. We recommend that HM Treasury conduct and publish a fully costed study of the impact of Air Passenger Duty (APD) on the UK economy. If such a study produces clear evidence that APD has a negative effect on the UK economy and Government revenue, APD should be significantly reduced or abolished. We also recommend that the Government conducts an objective analysis looking at the impacts of differential APD rates for different airports. Finally, we recommend that an APD holiday be introduced for a 12-month trial period for new services operating from airports outside the south east.

1 Introduction

Aviation and connectivity

1. The benefits of aviation are not only economic; it also enriches the lives of citizens by providing transport and trade links with the rest of the world. These benefits do not come without a price. The local and global environmental impacts of aviation are widely acknowledged and it is recognised that these must be tackled effectively.

2. Furthermore, debate continues about precisely how much aviation contributes to the UK economy. A recent analysis, often quoted by industry, found that the aviation sector contributed £49.6 billion (3.6%) to UK GDP.[1] However, some commentators argue that that overstates the sector's contribution because, for example, exemptions from paying fuel duty and the environmental and social costs of the sector are not adequately taken into account.[2] Nonetheless, Government figures show that the UK aviation sector had a turnover in 2011 of around £53 billion, generated around £18 billion of economic output and employed over 220,000 workers directly and supported many more indirectly.[3] The aviation industry commissioned research that suggests that the total number of jobs supported (directly and indirectly) by aviation could be as high as 921,000.[4]

3. For example, aviation supports the tourism industry. The economic benefits of inbound tourism are generally undisputed. However, questions remain over the impact of outbound tourism on the UK economy due to the so-called "tourism deficit", which relates to the difference between the amount that UK citizens spend on their trips abroad and the amount that foreign visitors spend in the UK. ABTA, the travel association, has published research on the contribution of outbound travel towards UK GDP, which it suggests shows that "the longstanding myth that outbound travel results in a 'tourism deficit' is proven to be without a footing".[5] However, Greenpeace and WWF-UK remain concerned about the potential impact of a "tourism deficit".[6]

4. The economic benefits of aviation are further augmented by its catalytic impacts on businesses across all sectors, which are facilitated by greater connectivity.[7] The concept of connectivity, which encompasses the number of destinations served, their importance to business, and the frequency of flights, is essentially about the ease with which consumers can find the route they want at the time that suits their needs. Good connectivity can help

1 Oxford Economics, *Economic Benefits from Air Transport in the UK*, 2011; and AS 040 [International Air Transport Association]

2 Q 201 [Tim Johnson]; AS 010, paras 2.3-2.4 [HACAN]; and AS 109, paras 17-18 [Greenpeace]

3 HM Government, *Aviation Policy Framework*, March 2013, Cm 8584, p 9

4 Oxford Economics, Economic Benefits from Air Transport in the UK, 2011, p 4; AS 089, para 6 [Virgin Atlantic Airways]; and AS 110, para 1.3 [British Airways]

5 AS 048, para 15 [ABTA]

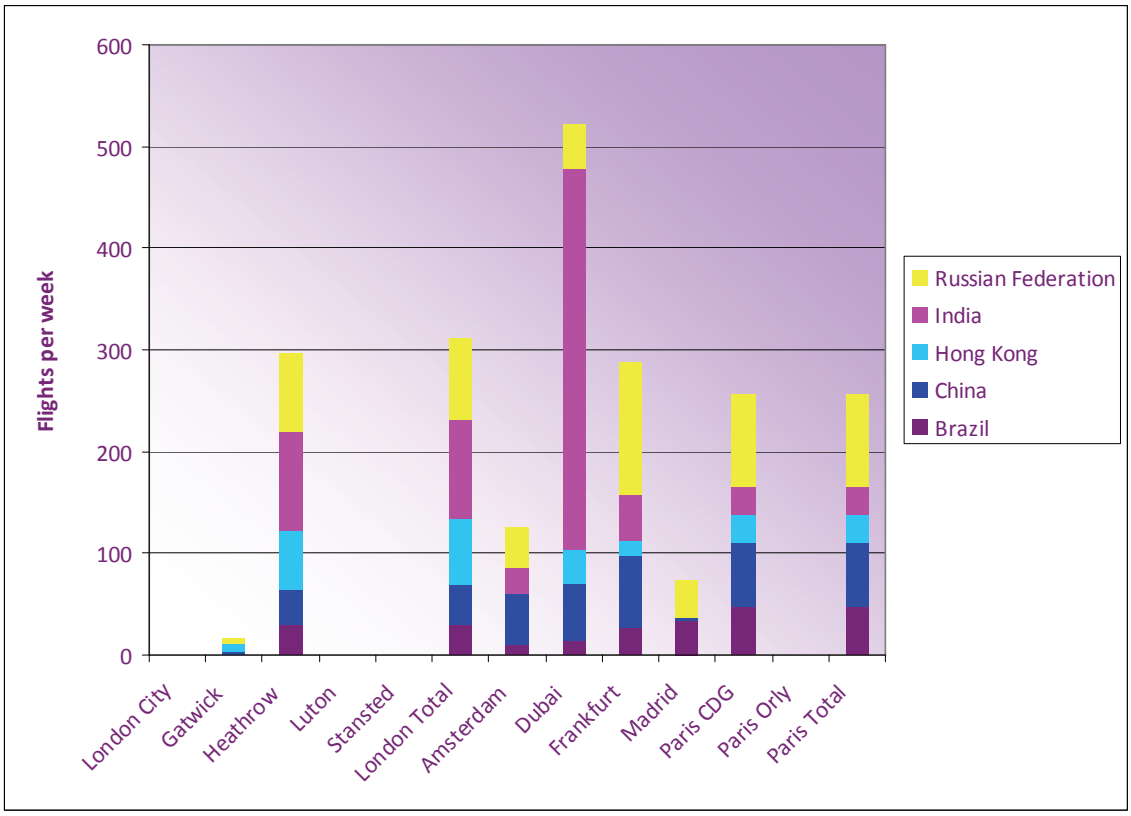
6 AS 069, para 2 [WWF-UK]; and AS 109, paras 21-24 [Greenpeace]

7 AS 039, para 7 [Foster+Partners]

to promote both trade and inward investment.[8] Connectivity is also important for leisure travellers as it creates a variety of route and destination opportunities.[9]

5. The UK is already very well connected, with direct air links to over 360 international destinations.[10] However, concerns have been raised that the UK's position is slipping in comparison to other countries and that this may be having a detrimental effect on trade and investment. There are particular concerns about poor connectivity between the UK and some of the world's emerging markets, such as, the so-called BRIC and CIVETS countries.[11] Figure 1 shows that London lies behind Dubai in terms of connections to the BRIC economies. This is largely a consequence of Dubai's high level of connections to the Indian subcontinent. It also shows that while London is currently better connected than its European rivals to the BRIC economies overall, it falls behind Paris and Frankfurt in terms of connections to Brazil, Russia and China (excluding Hong Kong). London's position, in terms of its links to China, is better if Hong Kong is included, indicating that it is well connected to the financial centre in Hong Kong but less well connected to the manufacturing heartland of China.

Figure 1: London's Air Connectivity to the BRIC Countries



Source: OAG data, April 2013.

8 AS 011, para 7 [Royal Aeronautical Society]

9 Q 108 [Andrew Cooper]

10 AS 087, para 6 [Department for Transport]

11 BRIC refers to Brazil, Russia, India and China; and CIVETS refers to Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa.

6. The consequences of poor connectivity in the UK may be that businesses consider it preferable to move their European headquarters away from London. For example, Boris Johnson, the Mayor of London, suggested that KPMG moved its European headquarters from London to Frankfurt because the latter is so much better connected with emerging markets.[12] While there are few hard examples such as this, business groups remain concerned about the prospect of the UK economy losing out in the future if connectivity is not improved through the provision of new services.[13] The Confederation of British Industry (CBI) has recently estimated that a new daily service to one of the key growth markets could generate up to £128 million of additional trade.[14]

7. The viability of additional services to new destinations, or indeed more frequent services to existing destinations, depends upon the level of demand for such services. At most airports, the level of demand is determined by the number of potential customers based in the airport's catchment area. These customers travel "point-to-point" on flights either to their end destination or to a "hub airport" for a connecting flight to their end destination. It follows that a hub airport makes use of both its own local catchment area and also incoming customers from other airports to feed demand for services so enabling additional destinations to be served and higher frequencies of service to be offered. Hub airports operate in a way that facilitates the transfer of passengers or goods, originating from a number of different cities and countries, onto services that would otherwise not be viable if they relied solely on the catchment area around the airport itself. Nonetheless, hub airports need strong local catchment areas in order to ensure that there is always a base level of demand as there is strong international competition for transfer passengers, with airlines often competing on price to encourage passengers to use their hubs. International scheduled carriers rely on transfer passengers to provide competitive services to the world's emerging markets.[15] Hub airports therefore have a particular role in delivering air connectivity. Consequently, much of the recent debate about aviation strategy has focussed on hub airports and in the UK a concern about insufficient capacity at Heathrow, the UK's current hub airport.

Government strategy and the airport capacity debate

8. The lack of capacity at UK airports, particularly in the south east, has been the subject of much discussion over the past five decades. For many the obvious solution has been to construct new runways to accommodate more flights. In 1971 the final report of the Roskill Commission recommended Cublington, Buckinghamshire, as the preferred site for a new four-runway airport, with a minority report favouring Maplin Sands, off the Thames estuary.[16] Maplin was chosen by the Government as the preferred site although neither airport was built. It was this failure to develop a new hub airport in the late 1960s and early 1970s that the Royal Aeronautical Society blames for the "current impasse in resolving the

12 Q 764 [Boris Johnson]

13 Qq 425-429 [John Dickie; Stuart Fraser; Rhian Kelly; Mike Spicer; and Corin Taylor]

14 Confederation of British Industry, *Trading Places*, February 2013

15 Q 19 [Sian Foster]

16 House of Commons Library, *Aviation: proposals for an airport in the Thames estuary, 1945-2012*, SN/BT/4920, last updated on 20 July 2012

airport capacity crisis in the [south east] of England [and] the failure to overcome Heathrow's evident frailties as a national hub airport".[17]

9. Following the cancellation of the Maplin project in 1974, the first Airports Policy White Paper was produced in 1978, following an extensive period of consultation.[18] This envisaged the development of both Heathrow and Gatwick as the two major international airports to meet demand over the medium term through the addition of a fourth and second terminal respectively, with subsidiary roles for Stansted and Luton. Study groups were established to consider longer term requirements which culminated in a recommendation that Stansted be developed as the third main London airport. Planning approval was granted for major development at Stansted as a single runway airport in conjunction with the publication of the second Airports Policy White Paper in 1985.[19] By 1990, the Civil Aviation Authority was recommending that at least one additional runway would be required at a London airport by 2005. The Government set up a new working party, known as RUCATSE (runway capacity to serve the south east), which reported in 1993.[20] This working group recommended that an additional runway at Heathrow would generate the highest benefits, with a second runway at Gatwick being the next best alternative. Options at the other airports were deemed to be less beneficial. This working group also recognised that "Thames estuary sites could offer important long term advantages, although they pose major problems of their own".[21]

10. The most recent in-depth review of UK airports was carried out in preparation for the former Government's 2003 White Paper on the future of air transport, which concluded that a second runway should be built at Stansted, followed by a third runway at Heathrow subject to certain environmental standards being met, and that land should be safeguarded for a second runway at Gatwick after 2019.[22] None of these runways has been built. Prior to the General Election in 2010, the then Labour Government supported a third runway at Heathrow. The Labour Party's manifesto in the run up to the election indicated that it no longer supported expansion at any airports other than Heathrow.[23]

11. In May 2010, the Coalition Agreement set out the current Government's position, which was to cancel the third runway at Heathrow and refuse permission for additional runways at Gatwick and Stansted.[24] In order to make better use of these existing airports, without building new runways, the Government announced the establishment of the South East Airports Taskforce. In July 2011, the Taskforce recommended a package of proposals to address punctuality, delay and resilience issues at Heathrow, Gatwick and Stansted. The package included a set of operational freedoms to allow certain tactical measures to be applied to mitigate disruption and to facilitate recovery, a performance charter for each airport to setting out the level of service that airline customers and their passengers should

17 AS 011, para 3 [Royal Aeronautical Society]

18 Secretary of State for Trade, *Airports Policy*, February 1978, Cm 7084

19 Secretary of State for Transport, *Airports Policy*, June 1985, Cm 9542

20 Runway Capacity to Serve the South East: A Report by the Working Group, July 1993

21 Runway Capacity to Serve the South East: A Report by the Working Group, July 1993, Executive Summary, para 13

22 Department for Transport, *The Future of Air Transport*, December 2003, Cm 6046

23 The Labour Party Manifesto 2010, p 1:8

24 HM Government, Coalition Agreement: our programme for government, May 2010, p 16

expect to receive, and a set of policy guidelines to optimise the utilisation of runway resource at each airport.[25]

12. In July 2012, a year after the Taskforce report, the Government published its draft Aviation Policy Framework (APF), setting out its broader strategy on aviation, for consultation.[26] Notably, the draft APF did not itself express a view on the hub capacity issue. It did, however, note that "the main issue of contention remains airport, and particularly runway capacity".[27] The draft APF indicated that the Government would explore the options for maintaining both the UK's aviation hub status and its international air connectivity through a call for evidence later in 2012.

13. On 7 September 2012, the Government announced that it had asked Sir Howard Davies to chair an independent commission, tasked with identifying and recommending options for maintaining the UK's status as an international hub for aviation.[28] The Airports Commission has undertaken to produce an interim report by the end of 2013, and a final report by the summer of 2015.[29]

14. In March 2013, the Government published its final APF, which comments on a number of issues, including:[30]

- the benefits of aviation, particularly in relation to the UK economy;
- climate change and the global environmental impacts of aviation;
- local environmental impacts such as noise, air pollution and surface access traffic congestion;
- the role of the Airports Commission in relation to the capacity debate;
- protection of passenger rights;
- competition and the regulatory regime for airports;
- airspace issues;
- aviation safety; and
- the security regime.

25 Department for Transport, *South East Airports Taskforce: Report*, July 2011, p 7

26 Department for Transport, *Draft Aviation Policy Framework*, July 2012

27 Department for Transport, *Draft Aviation Policy Framework*, July 2012, p 4

28 Written Ministerial Statement, *Independent Airports Commission – increasing international competitiveness of UK airlines and airports*, 7 September 2012

29 Airports Commission, *Guidance Document 01: Submitting evidence and proposals to the Airports Commission*, February 2013

30 Department for Transport, *Aviation Policy Framework*, March 2013, Cm 8584

Our inquiry

15. We launched our aviation inquiry on 13 September 2012, shortly after the publication of the draft APF and the Government announcement on its intention to set up the Airports Commission. We chose to look at UK aviation strategy as a whole including the role played by both hub and non-hub airports. Our terms of reference sought views on the following questions:

i. What should be the objectives of Government policy on aviation?

   a) How important is international aviation connectivity to the UK aviation industry?

   b) What are the benefits of aviation to the UK economy?

   c) What is the impact of Air Passenger Duty on the aviation industry?

   d) How should improving the passenger experience be reflected in the Government's aviation strategy?

   e) Where does aviation fit in the overall transport strategy?

ii. How should we make the best use of existing aviation capacity?

   a) How do we make the best use of existing London airport capacity? Are the Government's current measures sufficient? What more could be done to improve passenger experience and airport resilience?

   b) Does the Government's current strategy make the best use of existing capacity at airports outside the south east? How could this be improved?

   c) How can surface access to airports be improved?

iii. What constraints are there on increasing UK aviation capacity?

   a) Are the Government's proposals to manage the impact of aviation on the local environment sufficient, particularly in terms of reducing the impact of noise on local residents?

   b) Will the Government's proposals help reduce carbon emissions and manage the impact of aviation on climate change? How can aviation be made more sustainable?

   c) What is the relationship between the Government's strategy and EU aviation policies?

iv. Do we need a step-change in UK aviation capacity? Why?

   a) What should this step-change be? Should there be a new hub airport? Where?

   b) What are the costs and benefits of these different ways to increase UK aviation capacity?

16. We received 124 written submissions and took oral evidence on seven occasions between November 2012 and February 2013. In December 2012, we visited Frankfurt Airport in Germany, to find out more about how it functions as a major European hub and to discuss with Fraport, the airport operator, and Lufthansa, Germany's flag-carrying airline, the role of hub airports and the international challenges faced by Europe's aviation industry. The programme for this visit is published in Annex A. We are grateful for all the written and oral evidence we received and for the assistance we received in organising our visit, particularly from Fraport and the Embassy in Berlin. During the course of our inquiry, we also commissioned research from Oxera Consulting Ltd on the commercial viability of a new hub airport. This research is published in Annex B. We are grateful to Oxera for their work. Finally, we are grateful for the assistance we received in our inquiry from our specialist adviser, Louise Congdon.

17. This inquiry builds on our related work in this Parliament, including our reports:

- Keeping the UK moving: The impact on transport of the winter weather in December 2010, which noted capacity as a constraint on Heathrow's ability to recover from periods of closure.

- Draft Civil Aviation Bill: Pre-Legislative Scrutiny, which looked at changes to the system of economic regulation of airports by the Civil Aviation Authority (CAA), changes to the CAA's remit, governance structure and powers, and the transfer of security operation regulatory functions from the DfT to the CAA.

- High Speed Rail, which concluded that the Government needed to make clear how the High Speed 2 rail network fits into its wider aviation strategy.

2 Demand for growth

Demand forecasts

18. UK airports handled 221 million passengers in 2012, 1.4 million more passengers than in the previous year.[31] This growth continued the recovery which started in 2011 following three consecutive years of falling passenger numbers at UK airports in the immediate aftermath of the financial crisis of 2008. The extent to which passenger numbers will continue to grow is periodically forecast by the DfT. These forecasts are used to inform long-term aviation strategy and may have implications for the timing of any future airport development.

19. At the time of the 2003 White Paper on the future of air transport the central forecast for demand at UK airports in 2030 was 500 million passengers per annum (mppa).[32] This figure is related to "unconstrained" passenger demand, that is, it did not take account of capacity limitations at any individual airports nor did it assume that there would be any airspace constraints. The DfT's two most recent forecasts, published in August 2011 and January 2013, showed the central forecast for unconstrained passenger demand in 2030 dropping to 345 mppa and 320 mppa respectively.[33] The corresponding forecasts for demand in 2050 were 520 mppa and 480 mppa respectively. Since 2003 there has been a trend towards lower forecasts for passenger demand in the future, due to factors such as the impact of low economic growth in the UK, higher than expected fuel prices, and environmental costs. Further details showing the range of scenarios in the low, central and high forecasts from the most recent DfT publication are given in table 1.

	Table 1: UK terminal passenger forecasts (unconstrained)		
Year	Low forecast (mppa)	Central forecast (mppa)	High forecast (mppa)
2010	211	211	211
2015	220	230	240
2020	240	260	280
2025	260	290	315
2030	280	320	360
2035	295	355	415
2040	315	390	485
2045	335	435	565
2050	350	480	660

Source: Department for Transport, UK Aviation Forecasts, January 2013

20. The DfT also provides "constrained" forecasts that assume no new runways or terminals are built in the UK. In the most recent constrained central forecast, passenger numbers rise from 219 million in 2011 to 225 million by 2015, 315 million passengers by 2030, and 445 million by 2050.[34] The difference between the constrained and unconstrained forecasts illustrates, in very simple terms, the extent of the capacity shortfall

31 Civil Aviation Authority press notice, *Passenger numbers at UK airports up 1.4 million, but still below 2007 peak*, 18 March 2013

32 Department for Transport, *The Future of Air Transport*, December 2003, Cm 6046, Annex A

33 Department for Transport, *UK Aviation Forecasts*, August 2011; and Department for Transport, *UK Aviation Forecasts*, January 2013

34 Department for Transport, *UK Aviation Forecasts*, January 2013, p 7

at UK airports in terms of meeting potential demand to use them. Table 2 shows that the capacity gap in the mid-range demand scenario (i.e. the central forecast) would be 5 mppa in 2015 and in 2030 and would rise to 35 mppa by 2050.

Table 2: UK terminal passenger forecasts (central forecast)			
Year	**Unconstrained forecast (mppa)**	**Constrained forecast (mppa)**	**"Capacity gap" (mppa)**
2015	230	225	5
2030	320	315	5
2050	480	445	35

Source: Department for Transport, UK Aviation Forecasts, January 2013

According to DfT figures, the best-case scenario, illustrated by the low-range demand forecast shows a capacity gap of 5 mppa by 2020, that is an unmet demand of 5 million passengers at UK airports in as little as 7 years.[35]

21. The DfT also provides forecasts of passenger demand at the airport level. The most recent forecasts explain that:

> In the central forecast, the five largest South East airports are forecast to be full by 2030. However, the high and low demand scenarios underline the uncertainty around this conclusion. With the range of demand used they could be full as soon as 2025 (the high case) or take until 2040 (the low case). Heathrow had effectively reached capacity in 2011 and it is forecast to remain at capacity in all scenarios.[36]

22. The fact that Heathrow is operating at full capacity, and will remain operating at full capacity without expansion, is best illustrated by looking at runway capacity. The DfT forecasts show how airport level demand forecasts are related to the "maximum use scenario" of existing runways to illustrate when the London airports are predicted to become full and how the airports most affected by "spill" from the south east react (table 3).

Table 3: UK airports runway capacity used, 2010-2050, 'max use' capacity scenario (central forecast)					
Airport	**2010**	**2020**	**2030**	**2040**	**2050**
Heathrow	99%	100%	100%	100%	100%
Gatwick	90%	100%	100%	100%	100%
Stansted	58%	69%	100%	100%	100%
Luton	59%	60%	100%	100%	100%
London City	56%	87%	100%	100%	100%
Southend		42%	100%	100%	100%
London	81%	86%	100%	100%	100%
Manchester	49%	57%	55%	58%	100%
Birmingham	45%	56%	79%	100%	100%
Bristol	35%	38%	37%	100%	100%
East Midlands	22%	17%	20%	43%	100%
Southampton	27%	36%	52%	100%	100%
Other modelled	22%	24%	28%	33%	43%
National	39%	43%	50%	54%	63%

Source: Department for Transport, UK Aviation Forecasts, January 2013. Note: 100% = runway or terminal capacity exceeded, other %s refer to runway usage. Mainland UK airports only.

23. The forecasts raised two key questions that we sought to answer:

35 Department for Transport, *UK Aviation Forecasts*, January 2013, Comparison of tables 4.1 and 5.1

36 Department for Transport, *UK Aviation Forecasts*, January 2013, p 8

i. There is a capacity gap predicted by 2020 but future national demand forecasts have been steadily reduced since the 2003 White Paper: does that mean that there is a less urgent need for increased UK aviation capacity?

ii. Heathrow is full but there is capacity in other south east airports until at least 2025 and maybe until 2040: can demand for travelling from Heathrow be shifted to airports operating below capacity?

Urgency

24. While some witnesses pointed out that the DfT's future demand forecasts have been lowered since the 2003 White Paper and suggested that there was no longer any urgency in the requirement for additional airport capacity,[37] others noted that the forecasts do still predict growth.[38] Willie Walsh, Chief Executive of the International Airlines Group (IAG)—the holding company of British Airways and Iberia, told us that:

> The idea that we are in a recession and there is no growth is a nonsense. Yes, we went through a recession in 2008 and 2009, but most countries have come through that, certainly in terms of airline passenger numbers, and have seen significant growth. That growth is taking place right across the world.[39]

25. The main argument for urgent action on aviation capacity is an economic one. We have already noted the concerns from business groups about the UK economy losing out in the future if connectivity is not improved through the provision of new services.[40] Concerns about poor connectivity can be ascribed to a lack of capacity, and in particular, a lack of capacity at the main hub airport. The international economic landscape has changed in recent years, making the need for connectivity more urgent, as Colin Matthews, CEO of Heathrow Airport, noted:

> The need for jobs and investment in trade is now even greater. Growth has moved from local developed economies to far-flung emerging ones. Since 2003, Paris, Frankfurt and Amsterdam have put on many more routes. They have put on 1,500 more flights a year from those hubs to cities in mainland China than we have from the UK, so the urgency, in particular, has changed.[41]

We note that the hub airports in Frankfurt, Paris and Amsterdam have four, four and six runways respectively, compared to the two situated at Heathrow in London.

26. Dale Keller, CEO of the Board of Airline Representatives in the UK (BAR UK), indicated that competition from other major hub airports in Europe, each having between four and six runways, was an issue that the UK needed to address.[42] Further afield,

37 For example: Q 183 [Anthony Rae]; Q 185 [Brian Ross]; AS 008, para 12 [Gatwick Area Conservation Campaign]; and AS 081 [Aviation Environment Federation]

38 Q 136 [Nick Barton]

39 Q 243 [Willie Walsh]

40 Paragraph 5

41 Q 148 [Colin Matthews]

42 Qq 88-90 [Dale Keller]

competition from airlines and airports in the Middle East over the past decade has also grown. This was an issue of concern raised with us during our visit to Frankfurt Airport. Willie Walsh told us:

> in 2001, Dubai international airport ranked No. 99 in the world in terms of international passengers. Heathrow was No. 1. In 2010, Dubai was thirteenth. In 2011, it was fourth. It has seen growth to the end of October of this year of 13.5% versus growth at Heathrow of 0.6%. It will overtake Heathrow as the No. 1 international airport in the world certainly within two years—three years at a push. It is doing that at the expense of growth in the UK.[43]

27. **Growth in demand for air travel is inevitable. The UK is currently well connected to the rest of the world but there is no room for complacency at a time when the UK's hub airport is faced with increasing global competition. Building greater capacity—in the form of new runways, terminals, or airports—takes time. It would therefore be prudent to acknowledge the long-term upward trend in demand for air travel and act now to maintain the UK's international standing in aviation. We set out our recommendations on how this should be achieved later in our report.**

Accommodating demand within existing capacity

28. The environmental groups we heard from did not support the construction of new airports or new runways. Instead, they favoured either reducing demand,[44] or making better use of existing capacity within the UK.[45] They suggested that demand could be reduced by promoting the increased use of video-conferencing as a substitute for international travel.[46] However, they believed that this would only reduce demand for business travel. Video-conferencing is therefore likely to have very limited, if any, impact on demand and no impact on discussions about making better use of capacity.

29. We have already established that there is a specific problem at Heathrow. It is the UK's only hub airport, it has been short of capacity for a decade, and it is currently operating at full capacity.[47] London First and Biggin Hill Airport suggested that smaller business aircraft could be shifted away from Heathrow to designated business airports.[48] However, this would have limited impact as business aviation represents only a very small number of aircraft movements at Heathrow.[49] Jean Leston, Senior Transport Policy Adviser at WWF-UK, accepted that runway capacity was an issue at Heathrow and suggested that the solution might be "to free up capacity by moving flights of lower economic value,

43 Q 243 [Willie Walsh]

44 Q 661 [Jean Leston]; and AS 073, para 17 [Friends of the Earth]

45 Qq 651-654 [Jean Leston and Matt Williams]; and AS 109, para 25 [Greenpeace]

46 Q 661 [Jean Leston]; AS 047 [Merseytravel]; AS 054, para 14 [Stop HS2]; and AS 098, para 1.2 [RSPB]

47 Q 133 [Colin Matthews]

48 Q 437 [John Dickie]; and Q 506 [Andrew Walters]

49 Civil Aviation Authority, UK Airport Statistics 2010

predominantly leisure flights, to other airports where there is lots of spare capacity".[50] However, she was unable to explain how the airlines might be persuaded to do this.[51]

30. We questioned a number of airlines about whether this would be possible and were told by Sian Foster, from Virgin Atlantic Airways, that "the leisure passengers, the business passengers, the cargo, the point-to-point and the connecting are all travelling on the one plane. Trying to separate them out and try different solutions at different airports would be very challenging, if not impossible".[52] She explained that this sort of approach had been attempted in Tokyo:

> The Japanese Government have tried to make Narita the international hub for most of the day and Haneda the local regional hub for most of the day. They have a bizarre rule where they switch over some time during the evening and it is incredibly complex. In the time that they have been trying to enforce these rules locally, they have seen Japan's primacy dip as an international hub for south-east Asia. They have been overtaken by other airports in that region so it hasn't worked particularly effectively for the airlines, the passengers or the Japanese economy.[53]

31. Simon Buck, CEO of the British Air Transport Association (BATA) concurred that moving flights away from capacity constrained airports would be the wrong approach.[54] Andrew Cooper, from Thomas Cook Group, and Eddie Redfern, from TUI Travel, added that people generally prefer to travel from their local airport and that any attempt to shift flights in this way would result in passengers incurring greater costs as they travelled to airports further away.[55] Furthermore, the Civil Aviation Authority (CAA) told us:

> The real challenge is the fact that demand is "peaky". It peaks geographically in the south-east but also by time of day. Even Stansted, which has seen a massive reduction in usage in the last five years, is still pretty crowded at the peak. It has not seen fewer planes in that 7 to 9 am peak. Intervening in the market to shift people away from those peak hours, despite very attractive pricing, hasn't worked. Political intervention to try and shift would almost certainly be unsuccessful.[56]

32. Other witnesses suggested that despite the specific capacity problem at Heathrow, too much emphasis was placed on growing the hub airport. Tim Johnson, from the Aviation Environment Federation (AEF), told us that "if you look at the origin of the demand, the capacity exists in each of the regions that people want to fly from, including the south-east".[57] However, airlines are commercially driven enterprises and will operate services only where there is a viable market. While hub airports are thought to be more conducive to establishing new services, particularly to the emerging markets, Gatwick Airport told us

50 Q 678 [Jean Leston]

51 Qq 679-680 [Jean Leston]

52 Q 21 [Sian Foster]

53 Q 46 [Sian Foster]

54 Q 23 [Simon Buck]

55 Q 106 [Eddie Redfern]; and Q 107 [Andrew Cooper]

56 Q 359 [Andrew Haines]

57 Q 224 [Tim Johnson]

that there was a trend away from "hubbing" and towards direct point-to-point services.[58] Over the last year Gatwick has been successful in setting up connections with Air China and has also set up the first direct connections between the UK and Ho Chi Minh City and Hanoi in Vietnam, with services to Jakarta starting in the near future.[59] However, Gatwick has not always been successful in maintaining such connections,[60] for example, a service started by Korean Air last year has now been suspended.[61] Willie Walsh, of IAG, told us that:

> The reality of it is that despite the attraction of Gatwick—and it is a much cheaper airport to operate to than Heathrow—most of the long-haul carriers flying into Gatwick want to fly into Heathrow. Gatwick Airport won't say that, but I know because the airlines that are flying into Gatwick contact me and say, "Is there any way we can get slots at Heathrow?" If they had the opportunity to fly from Heathrow, they would.[62]

33. **There is a specific capacity problem at Heathrow Airport. It is the UK's only hub airport, it has been short of capacity for a decade, and it is currently operating at full capacity. Furthermore, there is a lack of capacity to meet demand during peak hours across all airports in the south east. There may be some scope to shift small business aircraft to designated business airports. However, this will have limited impact. The vast majority of aircraft movements at Heathrow are commercial flights, which carry a mixture of leisure passengers, business passengers and cargo. It is therefore impractical to suggest that Heathrow's capacity problem can be resolved by shifting commercial flights of a "specific" type (for example, leisure flights) to another airport. Furthermore, we note that airlines make decisions on where services operate based on commercial reasons. We also note that some non-hub airports may have a role to play in providing flights to emerging markets and that the HS2 rail project offers the potential for other airports such as Birmingham and East Midlands to attract more passengers from London and the South East. For example, with HS2 the rail journey time from central London to Birmingham airport will be less than 40 minutes, not dissimilar from journey times to the main London airports. This, however, is not a substitute for increased hub capacity.**

Uncertainty

34. Forecasting is inherently uncertain and the factors that underpin forecasts of future air passenger demand are difficult to predict. The DfT addresses this uncertainty by producing a range of forecasts showing low- mid- and high- demand scenarios. The publication of these forecasts, and the methodology used to devise them, allows interested parties to scrutinise them and test their robustness. In February 2013, the Airports Commission published a discussion paper seeking views on aviation demand forecasts. While we have not looked in detail at the methodology used, we have no reason to doubt the overall

58 AS 068, para 6 [Gatwick Airport]

59 Q 149 [Stewart Wingate]

60 Q 71 [Dale Keller]

61 Business Traveller, *Korean to suspend Gatwick-Seoul route*, 29 November 2012

62 Q 253 [Willie Walsh]

analysis of national demand. There is, however, a question mark as to whether the analysis of demand fully captures potential future long-term economic and demographic changes. There are also a number of anomalies contained within the figures, for example, anomalies relating to the way in which traffic (including "hub" traffic) is reallocated when Heathrow reaches capacity. For example, the DfT models show that when Heathrow fills up, long-haul traffic is forecast to move to Stansted in 2030 but inexplicably Stansted is then expected to lose this traffic in 2050.[63] We are therefore concerned that the detailed airport level forecasts may not present an accurate picture of demand and capacity requirements at the individual airport level. In addition, we are concerned that future demand forecasts may not take into account factors which may affect the evolution of the UK economy, such as the impact of HS2.

35. **While forecasting is inherently uncertain we have no reason to doubt the overall analysis of national demand. There are, however, questions remaining about the long-term forecasts. We welcome the Airport Commission's discussion paper on aviation demand forecasts and hope that the Commission will address some of the anomalies we have identified. We note that it is important that the drivers of hub demand are better understood as this will help to identify the extent to which hub demand might be relocated.**

63 Department for Transport, *UK Aviation Forecasts*, January 2013, Annex E.9 and E.10

3 The impacts of growth

36. Growth in aviation will have inevitable impacts on the global and local environment. In this chapter we consider the main environmental impacts raised with us.

Global impacts

37. The Committee on Climate Change (CCC), which provides advice to the UK Government and Parliament, set out in its 2009 report the environmental implications of growth in aviation, with particular reference to airport expansion as set out in the 2003 White Paper. The CCC concluded that:

> an increase in ATMs [Air Traffic Movements] of around 55% relative to 2005 levels would be compatible with the target of ensuring that 2050 CO_2 emissions did not exceed the 2005 level of 37.5 $MtCO_2$. Given increasing load factors over time, an increase in passengers of around 60% on 2005 levels by 2050 would be possible, taking total annual passenger numbers from 230 million to around 370 million.[64]

The CCC added that even though the total current theoretical capacity at all airports in the UK was already in excess both of current ATMs and of maximum ATMs compatible with the 2050 target, demand could not easily be switched between different geographical locations.[65] The Environment Agency told us that growth within the environmental limits set by the CCC "would require quite considerable reductions in emissions from individual aircraft and individual flights, but the [CCC] clearly thinks that that is possible".[66]

38. Other witnesses seemed less convinced and suggested that a reduction in emissions might best be achieved by constraining aviation growth. However, constraining capacity at UK airports might simply lead to fewer direct routes and therefore more UK passengers having to take longer indirect routes, which could generate even more emissions. Willie Walsh told us that "flying from Heathrow direct to Seoul is about 37% shorter than if you fly Heathrow-Dubai-Seoul" and that "we are actually pushing people into less environmentally sustainable-friendly ways of travelling because we are forcing them to transfer over other hub airports outside the UK".[67] In addition to the problem of greater distances, there is also the issue of the extra emissions generated by having to take-off and land twice. We questioned witnesses about whether pushing passengers to transfer at foreign hubs was tantamount to exporting our emissions problem to another country. John Stewart, from HACAN (the Heathrow Association for the Control of Aircraft Noise), responded that "as far as emissions are concerned, that can't really be denied".[68] WWF-UK were reluctant to tell us how great a concern these additional emissions would be and Anthony Rae, from Friends of Earth, stated that he would want to see analysis on how

64 Committee on Climate Change, *Meeting the UK aviation target – options for reducing emissions to 2050*, December 2009, p 22

65 Committee on Climate Change, *Meeting the UK aviation target – options for reducing emissions to 2050*, December 2009, p 27

66 Q 739 [Ed Mitchell]

67 Q 249 [Willie Walsh]

68 Q 216 [John Stewart]

much greater the emissions would be.[69] Heathrow Airport subsequently wrote to us with two examples comparing the emissions generated by a direct flight from Heathrow with a flight connecting through a European hub airport, illustrating a 5-16% increase in CO_2 emissions for the corresponding connecting flight.[70]

39. In its final Aviation Policy Framework, the Government argues that tackling emissions from aviation is principally a global task.[71] We agree, particularly in the light of the evidence which we received that specific restrictions to growth in the UK could perversely lead to greater rather than fewer emissions as passengers have to make less efficient journeys to reach their destinations. We note that the Government intends to review the appropriateness of specific targets for UK aviation emissions in the light of progress with global initiatives, such as the future scope of the EU ETS and the outcome of the International Civil Aviation Organization (ICAO) negotiations towards a global deal on aviation emissions.[72]

40. **Aviation can and should be permitted to grow. Despite existing spare capacity, demand could not easily be switched between different geographical locations. We therefore consider that an increase in capacity will be necessary to accommodate sustainable aviation growth.** ***We recommend that any future plans for increased aviation capacity take into account progress on global initiatives to deal with emissions.***

41. The aviation industry itself is conscious of the need to act to reduce emissions if it is to grow within the environmental limits set out by the CCC.[73] Sian Foster, from Virgin Atlantic Airways, told us that "there have been huge developments in terms of noise-efficient and carbon-efficient aircraft".[74] Jean Leston, from WWF-UK, and Matt Williams, from the RSPB, welcomed efforts to work on fuel efficiency improvements and technology improvements on aircraft, but remained concerned that emissions generated by aviation growth would outstrip the benefits gained through these measures.[75]

42. In addition to technical solutions that might make aircraft more environmentally friendly, there are also potential environmental gains from changing the way in which air traffic is managed. For example, aircraft approaching Heathrow are often held in a stack, circling at progressively lower altitudes as they await a landing slot and this "stacking" generates unnecessary emissions. Willie Walsh told us that there were an estimated 270,000 tonnes of CO_2 generated by aircraft stacking between June 2011 and July 2012.[76] He suggested that additional capacity, in the form of a third runway, at Heathrow might reduce stacking.[77] John Stewart and Matt Williams agreed that reducing stacking would lead to a reduction in emissions but argued that this reduction would be minimal in

69 Q 217 [Anthony Rae]; and Q 688-695 [Jean Leston and Keith Allott]

70 AS 084A, [Heathrow Airport Ltd]

71 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 41

72 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 47

73 Q 60 [Simon Buck]

74 Q 11 [Sian Foster]

75 Qq 657-659 [Jean Leston and Matt Williams]

76 Q 260 [Willie Walsh]

77 Q 260 [Willie Walsh]

comparison to the emissions generated by the additional planes accommodated by a third runway at Heathrow.[78] We note that NATS,[79] the UK's leading provider of ATM services, was the first ATM provider to set targets for reducing CO_2 emissions for aircraft under its control, and the first ATM provider in the world to devise a metric for measuring its environmental performance.[80] **Stacking of aircraft, particularly over London, generates unnecessary emissions.** ***We recommend that NATS carry out modelling work to identify the extent to which stacking might be reduced if an additional runway is built at Heathrow. This work should be reported to the Airports Commission, ahead of its final report.***

Local impacts

43. The local impacts of aviation growth vary depending on the region and the nature of the development. For example, the Environment Agency told us that around the Thames estuary, the potential site of a much talked about new hub airport, the most significant environmental issues are the risk of flooding and the protection of habitats.[81] However, no matter where an airport is located, local residents will be concerned about air quality and noise. While much of the evidence we received on local impacts relates to the UK's busiest airport, Heathrow, the concerns raised would also be valid around other large airports.

Air quality

44. The main local pollutants arising from aviation are oxides of nitrogen and particulate matter.[82] Ed Mitchell, from the Environment Agency, told us:

> a third [of air pollutants come] from the airport operations themselves, a third from the traffic and travel associated with the airport, and then a third from other background sources such as traffic unrelated to the airport. If you take Heathrow, the airport contribution is slightly higher at around 40%, from memory.[83]

He added that "to put this in context, the emissions of oxides of nitrogen from Heathrow are roughly the same as from a standard power station" and that the difference was that a power station emitted these pollutants up a tall chimney meaning that there was greater dispersal and as a result ground level concentrations were not as high.[84] Colin Matthews, from Heathrow, acknowledged that pollution was a serious issue and that aviation played a role, but he believed that the problem around Heathrow was mostly generated by diesel engines from traffic on the M4 and the M25.[85] The Environment Agency informed us that "concentrations of nitrogen dioxide were expected to continue to exceed the EU air quality

78 Q 194 [John Stewart]; and Q 684 [Matt Williams]

79 Formerly "National Air Traffic Services"

80 AS 051, para 1.11 [NATS]

81 Q 743 [Environment Agency]

82 AS 026, Annex 1 [Environment Agency]

83 Q 755 [Ed Mitchell]

84 Q 758 [Ed Mitchell]

85 Q 165 [Colin Matthews]

limit for the foreseeable future".[86] ***We recommend that airport operators develop action plans to reduce air pollutants that are generated by vehicles travelling within airports. These should include a timeline for the introduction of low carbon airport vehicles, including aircraft towing vehicles. We note that many airports already produce surface access strategies setting targets for reducing the number of staff and passengers travelling to and from airports by car. Where air pollutants exceed EU limits Government should draw up plans to ensure that EU limits are met.***

Noise

45. Aircraft noise is the most emotive issue for many of the people living under the Heathrow flight path in west London and we received a number of written submissions on this subject from individuals and community organisations in this area.[87] Commenting on the impact of aviation growth on noise annoyance, the Mayor of London told us that:

> Heathrow cannot provide a third runway without doing immense damage to the well-being of Londoners through increased noise pollution, but it is inconceivable to imagine that Heathrow could provide a fourth runway without immense political grief, and, as I say, colossal noise pollution slap-bang in the western suburbs of London.[88]

Michael O'Leary, CEO of Ryanair, agreed that expansion of Heathrow was politically challenging and that "one of the downsides of being an elected politician is that you are called upon to make some sensible long-term economic decisions".[89] He was somewhat less sympathetic to those suffering from aircraft noise when he posed the question "do you pander to the noisy militant few or do you actually make sensible long-term economic decisions in favour of the many?"[90]

46. The Mayor of London helped us to quantify Mr O'Leary's "noisy militant few"; he told us that "766,000 people in west London experience noise pollution from that airport in excess of 55 decibels (dB). That is almost 30% of the entire excess noise pollution suffered by people around airports in the whole of Europe".[91] The Noise Observation and Information Service for Europe (NOISE), which is maintained on behalf of the European Commission, provides further information on people suffering from noise pollution which help to put this in context. NOISE states that the number of people exposed to noise (in excess of 55 dB L_{den}) from major UK airports overall is 1,057,200, of which it reports that the majority (725,500 people) are in the vicinity of Heathrow. However, it also reports that the number of people exposed to noise (in excess of 55 dB L_{den}) from UK roads overall is an order of magnitude greater, at 15,363,300.[92] The London Borough of Hillingdon told us

86 AS 026, Annex 1 [Environment Agency]

87 For example: AS 001 [Elizabeth M. Balsom]; AS 010 [HACAN]; AS 016 [London Borough of Hillingdon]; AS 028 [West Windsor Residents Association]; AS 035 [Zac Goldsmith MP]; AS 076 [Richmond Heathrow Campaign]; AS 083 [Local Authorities Aircraft Noise Council]; AS 097 [Mr Terence Hughes]; AS 101 [London Borough of Hounslow]

88 Q 764 [Boris Johnson]

89 Q 97 [Michael O'Leary]

90 Q 97 [Michael O'Leary]

91 Q 771 [Boris Johnson]

92 Noise Observation and Information Service for Europe, Noise exposure data "END_DF4_Results", December 2012

that the "55 dB L_{den} contour" used in the European Union Noise Directive takes account of the differing impacts of noise at different times of the day (night noise being the most intrusive), whilst the DfT measure of the "57 dB LA_{eq16h} contour", uses a higher noise level and is measured as a straight average over a 16-hour day.[93] The latter was considered to be "outdated" and "unacceptable".[94] The Government accepted that people do not experience noise in an averaged manner but stated that it would nonetheless continue to produce noise exposure maps using the 57 dB LA_{eq16h} contour, which it considered were "important to show historic trends".[95] However, it encouraged airport operators "to use alternative measures which better reflect how aircraft noise is experienced in different localities".[96]

Tackling air quality and noise

47. Providing predictable periods of respite from noise is one way in which operating procedures at airports can be changed to mitigate the local impacts of growth in aviation. Sian Foster, from Virgin Atlantic Airways, and Paul Simmons, UK Director for easyJet, both acknowledged that, in this context, it was very important for airlines to work with local communities and other stakeholders including airports, air traffic controllers and aircraft manufacturers to "look at perceptions of noise and what could be done to alleviate noise impact on local populations".[97] The impact of recent operational changes, such as the Operational Freedoms trial at Heathrow, are discussed later in this report.[98]

48. Another operational change which could have a beneficial impact on air pollution and noise around airports is the use of steeper aircraft approaches on landing. Andrew Haines, CEO of the CAA, explained that a 3° approach was standard across the world but that NATS was particularly keen to explore a two-stage approach.[99] This would mean that an aircraft's final descent, coming into the airport, remained at 3°, but that further away from the airport, the aircraft would approach at a steeper angle. It was acknowledged that this would deliver no benefits for people living close to the airport but it was hoped that significantly less noise would be experienced by people living slightly further away.[100] NATS stated that several airports in the UK already use a 3.5° approach and London City Airport uses a 5.5° approach.[101] However, further feasibility work needs to be carried out before such changes could be introduced at Heathrow Airport.[102]

49. As with global environmental impacts, in addition to operational measures there are potential technological solutions to mitigate the local impacts of aviation growth. Modern aircraft can be designed to produce fewer air pollutants and to be quieter. Willie Walsh,

93 AS016, para 26 [London Borough of Hillingdon]

94 AS016, paras 26-27 [London Borough of Hillingdon]

95 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 57-58

96 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 58

97 Q 61 [Sian Foster and Paul Simmons]

98 Paragraph 81

99 Qq 320-321 [Andrew Haines]

100 Qq321-322 [Andrew Haines and Simon Hocquard]; and AS 051A [NATS]

101 AS 051A [NATS]

102 Q 313 [Richard Deakin]

from IAG, explained that there are global standards for noise (as agreed by the ICAO) and that these have helped to deliver "progress in relation to the noise performance of existing aircraft".[103] Virgin Atlantic Airways, for example, will be introducing the Boeing 787 to its fleet. These aircraft are "a lot quieter with a 60% smaller noise footprint than the planes they will replace".[104] Mr Walsh added that manufacturers have taken on board the message from airlines that an aircraft's environmental performance is just as important as its price.[105] However, John Stewart, from HACAN, said that the industry was confident that planes would become cleaner and increasingly fuel-efficient but "less confident of another significant step-change in quieter aircraft".[106]

50. Nonetheless, noise and poor air quality are unlikely ever to be entirely eliminated. Tim Johnson, Director of the Aviation Environment Federation (AEF), said the problem was that the UK had not had a "comprehensive approach" in terms of trying to provide adequate compensation for those who live around airports.[107] The Government's new Aviation Policy Framework sets out its expectations on what compensation, for example in the form of insulation, airport operators should offer households and other noise-sensitive buildings, such as schools and hospitals, exposed to high levels of noise (63 dB LA_{eq16h} or more).[108] The Framework also states that:

> Any potential proposals for new nationally significant airport development projects following any Government decision on future recommendation(s) from the Airports Commission would need to consider tailored compensation schemes where appropriate, which would be subject to separate consultation.[109]

51. **Aircraft noise is an annoyance to a large number of people. We note that airlines value an aircraft's environmental performance and that new aircraft are quieter than their predecessors.** ***Aircraft manufacturers should continue to develop quieter aircraft and, to facilitate this, we recommend that the Government seek to influence global noise standards through its involvement with the International Civil Aviation Organization. Airports should encourage airlines to take older, noisier aircraft out of service at the earliest possible opportunity.***

52. ***We urge the Civil Aviation Authority immediately to review existing flight paths and landing angles to reduce noise pollution, especially over London.***

53. **People living in the vicinity of airports must be properly compensated—for example through the provision of noise insulation—for the noise annoyance they experience, especially when growth in Air Traffic Movements at a given airport result in the level of noise they experience increasing significantly.** ***We recommend that the Government and the aviation industry develop a comprehensive nationwide approach to noise***

103 Q 279 [Willie Walsh]

104 Q 42 [Sian Foster]

105 Q 262 [Willie Walsh]

106 Q 192 [John Stewart]

107 Q 232 [Tim Johnson]

108 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 63

109 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 63

compensation. As part of this work, an assessment should be made of the minimum standards of compensation that are acceptable, and of the costs and benefits associated with providing different types of compensation to those experiencing different levels of noise (for example, 55 dB L_{den} and 57-63 dB LA_{eq16h}). We consider that this work should be carried out in parallel with the work of the Airports Commission so that the compensation package is clearly defined by the time the Commission makes its final recommendations.

4 Airports in the south east and the hub debate

54. Airports in the south east are already particularly busy. London has five airports with six runways and Dale Keller from BAR UK told us:

> Our ability to utilise that capacity as an industry is acclaimed worldwide. Gatwick is the busiest single-runway airport in the world. Heathrow's ability to use two runways on a small piece of land is completely unmatched anywhere.[110]

Despite this efficiency, the CAA explained that there was a market failure in the south east due to a lack of capacity, particularly at Heathrow.[111] Paul Kehoe, CEO of Birmingham Airport, agreed that the so-called "capacity crisis" was confined to Heathrow.[112] Darren Caplan, CEO of the Airport Operators Association (AOA), quantified the problem by explaining that the UK's hub capacity has increased by a mere 4.3% over the last ten years, while the corresponding figures from some competitor hubs in Europe were "Spain at 47%, France at 20.3%, Holland at 11% and Germany at 9.4%".[113]

Why is capacity at the UK's hub airport important?

55. We previously noted that hub airports have a unique role in delivering air connectivity due to the way in which they facilitate transfer traffic onto services that would otherwise not be viable.[114] It is clear that businesses in and around London value the breadth of services offered by the UK's hub airport. However, it is also important to people outside London.[115] Access to international destinations via Heathrow from airports outside the south east provides businesses in those areas with links to parts of the world that would otherwise not be available. The prospect of losing out on routes to new destinations, because of a lack of hub capacity, is of concern across the UK, as indeed is the potential for further erosion of the domestic air service network feeding the hub. Mr Keller suggested that the UK was already losing out on this basis, pointing to a recent survey of 86 airlines which showed that 53% were scheduling flights to other European airports on routes that would have come to the UK if capacity had been available, and 86% would seek to add additional services into Heathrow if capacity was freely available.[116] Routes lost by Heathrow were considered to be more likely to shift to competitor hubs in northern Europe, such as Frankfurt and Schiphol—where runway capacity was abundant—rather than to other London airports such as Gatwick or Stansted, which do not function as hubs.[117] This view was confirmed by Willie Walsh. He told us that while IAG's preference

110 Q 87 [Dale Keller]

111 Q 307 [Andrew Haines]

112 Q 382 [Paul Kehoe]

113 Q 411 [Darren Caplan]

114 Paragraph 7

115 For example: Q 412 [Graeme Mason]; and Q 485 [Garry Clark]

116 Q 71 [Dale Keller]

117 Q 12 [Simon Buck]; and Q 139 [Colin Matthews]

was to expand its long-haul network at Heathrow, growth that could not be accommodated at Heathrow was likely to go to other European airports, such as Madrid.[118] Mr Walsh added that the reason IAG had "spent so much money acquiring BMI" was to acquire access to slots that it could use for long-haul expansion.[119] He also suggested that other airlines might use this tactic in the future.[120] Colin Matthews, from Heathrow, explained why airlines are so keen to run long haul operations from Heathrow:

> Let's take a route like London-Hyderabad or London-Seattle. The local demand in the south-east of this country is not enough to justify those routes. What is more, it is very variable—much more on a Sunday night than, say, in midweek. Therefore, airlines cannot sustain daily flights to those long-haul destinations without a hub that allows them to bring transfer traffic to one place, to even out the ups and downs of demand. We do have direct flights to Hyderabad, Seattle and 75 long-haul destinations that cannot be served from Gatwick.[121]

56. Gatwick held a different view. It considered that reports of the demand to transfer at UK airports and the corresponding need for more hub capacity were overstated.[122] Gatwick's comments relate to the fact that there are different ways in which to calculate the number of passengers transferring at airports, which depends on whether you count only passengers travelling on through tickets and whether passengers are counted on both the arriving and departing legs of each journey via the hub.[123] We have assessed the different methodologies and note that whichever method of analysis one uses, it is clear that Heathrow consistently has a higher percentage of transfer traffic than Gatwick or any other UK airport. It was suggested to us during our visit to Frankfurt Airport that Heathrow is less reliant on transfer traffic than many of its European competitor hubs. The reason for this is that many of Heathrow's passengers are travelling to or from London as a destination in its own right.[124] Indeed, the majority of air travel does not involve "hubbing".[125] Low-cost airlines and charter airlines, for example, are not reliant on hub transfer traffic,[126] although small numbers of passengers may 'self-transfer' onto such services. The importance of a hub is therefore primarily about the UK aviation sector competing internationally and ensuring that scheduled airlines are able to provide long-haul destinations that would not be served from the UK in the absence of a hub.[127] **The UK's hub airport is of great importance to all the regions of the UK. It plays a unique role in connecting the country to the rest of the world—a role that could not be adequately fulfilled by a non-hub airport. It is imperative that the UK maintains its status as an international aviation hub.**

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118 Qq 271-273 [Willie Walsh]

119 Qq 271-274 [Willie Walsh]

120 Q 288 [Willie Walsh]

121 Q 138 [Colin Matthews]

122 Q 138 [Stewart Wingate]; and AS 068A [Gatwick Airport]

123 AS 068A, Appendix 3 [Gatwick Airport]

124 Q 138 [Stewart Wingate]; and Q 206 [John Stewart]

125 Q 5 [Paul Simmons]

126 Q 34 [Paul Simmons]; and Q 113 [Eddie Redfern]

127 Q 11 [Sian Foster]; and Q 138 [Colin Matthews]

57. Spare capacity at the UK's hub airport—and indeed at any airport—is also essential in terms of the resilience of airport operations. NATS told us that the fact that Heathrow is currently operating at full capacity means that "any disruption has an immediate impact".[128] In recent years, disruption to Heathrow's operations due to bad weather has been the subject of negative press coverage. We noted in our report, *Keeping the UK moving: The impact on transport of the winter weather in December 2010*, that capacity was a constraint on Heathrow's ability to recover from periods of closure.[129] The Mayor of London told us that "the slightest perturbation causes chaos at Heathrow. It is a real cause of economic loss to this country".[130] NATS considered that it was important to look not just at adding slots for more aircraft, but also at resilience issues, if capacity were increased at Heathrow.[131] For example, capping runway capacity utilisation at, say, 75% (compared to 99% today) could improve resilience. However, the consequences of doing this are unclear. Richard Deakin, from NATS, said that capping capacity in this way would be a decision for the Airports Commission.[132] **Any increase to capacity at the UK's hub airport must address the need to improve airport resilience, particularly in the event of bad weather, but this should not restrict the overall benefits derived from increasing runway capacity.**

Potential solutions

58. A number of solutions to the south east hub capacity problem have been proposed, including building an entirely new hub airport, linking existing airports by high-speed rail to form a "split-hub", and expansion of one or more existing airports. These options are discussed below. Later in this section we also discuss some of the short-term options that might address the problem of hub capacity.

A new hub

59. There are numerous proposals that have been put forward for a new hub airport in the Thames estuary, including those identified in table 4:

Table 4: Selected proposals for a new hub airport in the Thames estuary

Proposal	Promoted by	Location
London Jubilee International Airport	Thames Estuary Research and Development Company (Testrad)	Outer estuary: North of Herne Bay
Thames Hub Airport	Foster and Partners/Halcrow	Inner estuary: On the Isle of Grain
London Britannia Airport	Gensler	Inner estuary: On a centrally located floating island
London Gateway Airport	Independent Aviation Advisory Group	Inner estuary: At Cliffe
Goodwin Sands	Beckett Rankine	Outer estuary: Off Deal
Marinair	Thames Estuary Airport Company	Outer estuary: North east of Whitstable

128 Q 326 [Simon Hocquard]

129 Transport Committee, Fifth Report of Session 2010–12, *Keeping the UK moving: The impact on transport of the winter weather in December 2010*, HC 794

130 Q 764 [Boris Johnson]

131 Qq 327-329 [Simon Hocquard and Richard Deakin]

132 Q 331 [Richard Deakin]

60. The estimated timescales involved in constructing these potential developments varied from 7 to 15 years.[133] Allowing for time taken for applications, consultation and approval, Foster and Partners estimated that the earliest their proposed airport could open was 2027.[134] Journey times from central London to the airport would be, at best, approximately 30 minutes and journey times to the core of Heathrow's catchment area, which lies to the west of London, could be significantly greater.[135]

61. The Mayor of London's aviation adviser, Daniel Moylan, told us that the advantage of a new hub airport in the Thames estuary or indeed at Stansted was the "tremendous potential for regeneration of east London".[136] However, the Mayor explained that regeneration was a "secondary consideration" and that the most important thing was to "stop haemorrhaging jobs and opportunities to our continental rivals" due to the lack of hub connectivity to emerging markets.[137] The Mayor was understandably reluctant to back any specific proposal until the completion of further feasibility studies that he had commissioned.[138] Ian Mulcahey, Managing Director of Gensler, considered that another potential advantage of the estuary solution was that there would be "fewer" people affected by the noise, pollution and congestion generated by a major airport.[139] Huw Thomas, from Foster and Partners, explained that an overlay of the current noise contour from Heathrow over the proposal for the Thames Hub Airport showed that there would be a significant drop in the number of people experiencing noise annoyance, which he quantified as approximately 10% of the number of people currently suffering around Heathrow.[140] However, Ed Mitchell, from the Environment Agency, pointed out that "Heathrow did not start surrounded by quite so many houses and people" and that once an airport is built "people will come".[141] Groups representing residents living in areas that are likely to be affected by an estuary hub have already been vocal in their opposition.[142] There was also vocal opposition from Mr O'Leary who described the idea of a new hub in the estuary as "insane, stupid and hare-brained".[143] Such an airport had also previously been described by NATS as being in the "very worst spot" for the south east's crowded airspace.[144] NATS subsequently told us that, in terms of airspace, if a new hub airport was built "something would have to give", as it would be difficult to run the new hub efficiently alongside the

133 Qq 643-643 [Ian Mulcahey, Huw Thomas, and John Olsen]

134 AS 039A [Foster+Partners]

135 Qq 571-577 [Huw Thomas and John Olsen]; and Qq 781-782 [Boris Johnson and Daniel Moylan]

136 Q 767 [Daniel Moylan]

137 Q 768 [Boris Johnson]

138 Q 767 [Boris Johnson]

139 Q 622 [Ian Mulcahey]

140 Qq 637-639 [Huw Thomas]

141 Q 759 [Ed Mitchell]

142 Q 703 [Joseph Ratcliffe]; AS 007 [No Estuary Airport campaign (Essex)]; AS 061, para 5.1 [Kent County Council]; and AS 060, para 5.5 [Medway Council]

143 Q 77 [Michael O'Leary]

144 The Guardian, *Proposed Thames Hub airport in 'very worst spot' say air traffic controllers*, 13 April 2012

existing airports in the south east.[145] However, NATS assured us that it could rise to the challenge of designing airspace in response to any future development.[146]

62. Specific environmental concerns were also highlighted. The Thames estuary area provides a habitat for over 300,000 migrant birds that rely on the area for feeding and roosting during the winter.[147] Paul Outhwaite, from the RSPB, told us that parts of the Thames estuary were "protected by environmental regulation and laws under the habitats regulations".[148] Under these regulations, once a proposed development has passed certain tests, it is necessary to compensate for the land and the habitat that are destroyed.[149] Habitat protection requirements in the Thames estuary were described by the Environment Agency as "quite a stiff challenge" that might be possible to overcome depending on the exact location of the development.[150] There were also concerns expressed to us about "birdstrike" —collisions between birds and aircraft which might require an extensive clearance zone of birds around the new site.[151] Groups putting forward proposals for a new hub airport in the estuary area had also considered other environmental challenges, such as future sea-level rise and the risk of flooding.[152] The Environment Agency indicated that it had attended some early stage discussions on the proposals and that it would be able to work with developers to find solutions to these challenges.[153] Another potential challenge for developers is the presence of unexploded ammunitions on the World War II ship, *SS Richard Montgomery*, which sank in the Thames estuary in 1944.[154] However, Mr Thomas told us that:

> the advice we have taken from the Ministry of Defence is that we will not disturb the *SS Montgomery* in terms of the construction works we carry out. If there is a risk of the collapse of the *SS Montgomery* we believe that the platform and the defences we are creating adequately protect the airport.[155]

63. We also heard concerns about the potential cost of a new hub airport.[156] The proposals for new hub airports have been worked up to varying levels of detail, with some developers able to provide a detailed breakdown of costs (much of which is commercially sensitive) and others not.[157] We sought an independent assessment of the conditions under which a new hub airport—regardless of the specific details of the proposal—would, or would not, be likely to be commercially viable. We commissioned research on this subject from Oxera

145 Qq 332-339 [Simon Hocquard]

146 Q 348 [Simon Hocquard]

147 AS 007 [No Estuary Airport campaign (Essex)]; AS 060, para 3.4 [Medway Council]; and AS 088, para 3.5 [Friends of the North Kent Marshes]

148 Q 682 [Paul Outhwaite]

149 Q 682 [Paul Outhwaite]

150 Q 745 [Ed Mitchell]

151 Q 683 [Paul Outhwaite]; and AS 095, para 10 [Wildlife Trusts]

152 Qq 580-585 [Huw Thomas, Ian Mulcahey and John Olsen]

153 Qq 744-750 [Ed Mitchell]

154 AS 060, para 3.8 [Medway Council]

155 Q 590 [Huw Thomas]

156 Q 163 [Stewart Wingate]; [Q 254] Willie Walsh; and Q 506 [Christopher Snelling]

157 Q 545 and Q 596 [Huw Thomas] and Q 556 [Ian Mulcahey]

Consulting Ltd, who looked at a range of scenarios covering various airport designs, demand forecasts, cost estimates and assumptions about the level of airport charges. Oxera's analysis suggested that a new hub airport would not be commercially viable on a free-standing basis. While the airport as a stand-alone project might repay the investment, substantial public subsidy of £10-30 billion would be needed, for example, to cover the costs of surface access or compensation if Heathrow was closed. Nevertheless, Oxera concluded that from a public perspective, a new hub airport might still offer good value for money, depending on the scope of wider benefits that it could facilitate. Oxera's findings are published in full in Annex B.

64. We put Oxera's findings to proponents of new hubs and while there were some differences of opinion on the exact figures, the broad conclusions about the need for public subsidy were accepted.[158] Mr Moylan raised a specific concern that Oxera appeared to have accepted the cost of a third runway at Heathrow without making any comparable assessment of the additional public transport and road infrastructure that would be needed to support it. However, Oxera later clarified that the estimate they used for the cost of a third runway at Heathrow was based on a value, uprated for inflation, from the DfT's 2007 aviation forecasts, which did include surface access infrastructure costs.[159] Foster and Partners noted that "no aviation expansion comes without additional surface access. Inevitably some of this will need to be provided by the public purse".[160] The Rt Hon Patrick McLoughlin MP, the Secretary of State for Transport, told us that "as far as infrastructure is concerned, we would always want to service the major hub airport of the country".[161] However, he was reluctant to be drawn into more detailed conversations about public subsidy that might prejudge the recommendations of the Airports Commission.

65. Oxera also concluded that a new hub airport would have a considerable impact on Heathrow and other London airports. In particular, the new hub would be more likely to be commercially viable if Heathrow was closed. The view that Heathrow could not continue in its current form, and that it might need to be either closed or downgraded, was shared by a number of witnesses.[162] The impact of this was described by some as devastating.[163] We were told that Heathrow was "an international brand, and we would damage that at our peril".[164] Concerns were raised about the impact that the closure of Heathrow would have on the west London economy, particularly with regard to the number of people who depend on Heathrow directly or indirectly for employment, and the impact on businesses to the west of the city along the M4 corridor.[165] It was suggested that

158 Q 776 [Daniel Moylan], AS 039A, paras 8-15 [Foster+Partners]

159 Department for Transport, *UK Air Passenger Demand and CO_2 Forecasts*, November 2007, Table 4.2, p 78

160 AS 039A, para 15 [Foster+Partners]

161 Q 841 [Rt Hon Patrick McLoughlin MP]

162 [Q 254] Willie Walsh; Q 441 [Corin Taylor]; Q 442 [Stuart Fraser]; Q 506 [Christopher Snelling]; Q 593 [Huw Thomas]; and Q 769 [Boris Johnson]

163 Q 261 [Willie Walsh]; and Q 711 [Colin Ellar]

164 Q 481 [Emma Antrobus]

165 Q 261 [Willie Walsh]; and Q 506 [Christopher Snelling]

as it would take over a decade for a new airport to be operational, businesses would have time to plan ahead and potentially relocate.[166] Mr Walsh pointed out that:

> While I know there are many local councils, authorities and groups who oppose the expansion of Heathrow, there would be very few who would support the closure of Heathrow because of the effect that it would have on employment, business and the general economic conditions in the environment.[167]

The London Borough of Hounslow acknowledged that it was "caught between a rock and a hard place".[168] The London Borough of Hillingdon indicated that while it would not be happy if Heathrow closed, it would "look positively" at the prospect of regeneration of the site.[169] The redevelopment of some or all of the Heathrow site could provide additional housing or generate new jobs.[170] The Mayor of London considered that there would be some relocations but he did not believe that there would be a net loss to west London".[171]

66. **While there is some support for a new hub airport to the east of London we note that there are significant challenges associated with such a development. These include: designating airspace in an already crowded environment, mitigating birdstrike, and dealing with environmental challenges such as potential future sea-level rise and the risk of flooding. There are also potential impacts on habitats in and around the Thames estuary to take into account. Furthermore, uncertainty remains over the number of people that would be affected by noise from a new hub airport as both it and the surrounding community grew.**

67. **We reject the proposal for a new hub airport east of London, in part due to the challenges described above, but primarily on the following bases:**

- **a new hub airport will not be commercially viable without significant public investment in new infrastructure, as shown by the research we commissioned;**
- **a new hub airport will only be viable if Heathrow closes as a commercial airport;**
- **a new hub airport will increase passenger movements from centres of population, potentially generating more carbon emissions as passengers have to travel further to and from the terminals; and**
- **the closure of Heathrow would, in our view, be unacceptable due to the impact on the local economy and the huge disruption caused by the potential relocation of businesses and individuals in the vicinity of Heathrow.**

We are also unconvinced that the aviation industry—which would ultimately pay for using the new hub through airport charges—would support a new hub airport at the level of costs which are likely to be required. It should not be assumed that all traffic

166 Q 595 [Huw Thomas]; and Q 769 [Boris Johnson]

167 Q 261 [Willie Walsh]

168 Q 722 [Colin Ellar]

169 Q 719 [Jales Tippell]

170 Qq 604-606 [Ian Mulcahey]; and Q 769 [Boris Johnson]

171 Q 770 [Boris Johnson]

would automatically transfer from Heathrow to a new hub as many passengers, particularly those with journeys originating in or destined for west London, might choose to use Gatwick, Birmingham, Bristol, Cardiff, Exeter or Luton airports instead, even if that meant connecting through a hub airport overseas.

A split hub

68. Another solution to the hub capacity problem would be to connect two existing airports by high-speed rail to form a "split-hub". This would potentially eliminate the need for new runways at existing airports. The best-known examples are the proposal for a "Heathwick" hub, connecting Heathrow and Gatwick, or for a connection between Heathrow and RAF Northolt. The latter proposal would also require the reorientation of the existing runway at Northolt.[172] There was limited support for these two proposals.[173] We were informed by a number of organisations that such an approach would be highly uncompetitive,[174] particularly in comparison to the passengers experience at competitor hubs in Europe and the Middle East, where there are rapid transfer times (significantly less than an hour) from plane to plane.[175] **We conclude that a split hub would not be a viable solution to the hub capacity problem and we reject these proposals.**

Expansion of existing airports

69. We also considered the option to increase capacity at existing airports, including the UK's current hub, Heathrow. The Mayor of London was clear about his view on this subject: "the one option I think is not going to work is to continue to sink cost and investment into the cul-de-sac of Heathrow expansion because you already have a major environmental problem, which you are going to exacerbate".[176] However, Willie Walsh, from IAG, told us that he believed that "the issues of noise, local air quality and global climate change [from a third runway at Heathrow] could be addressed [in 2009 and] I still believe that that is the case".[177] Despite this, after years of fighting for a third runway at Heathrow, Mr Walsh told us that he had given up on it ever being built. He informed us that while he still believed that building a third runway at Heathrow would be in the nation's interests, he was now working to ensure that British Airways (BA) would continue to grow without it.[178]

70. Business groups on the other hand remain overwhelmingly in favour of a third runway at Heathrow, which could probably be operational within 10 years (including time taken for planning and construction). However, their wish-lists were not confined to this, as demonstrated by the following responses:

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172 AS 030 [Rothwell Aviation Ltd]

173 AS 030 [Rothwell Aviation Ltd]; and AS 061, para 1.5 [Kent County Council]

174 AS 039, para 14 [Foster+Partners]; AS 040 [IATA]; AS 046, para 28 [London Chamber of Commerce and Industry]; AS 048, para 29 [ABTA]; and AS 107, para 2.60 [Institute of Directors]

175 Qq 25-28 [Sian Foster and Simon Buck]; Q 91 [Dale Keller]; Q 178 [Colin Matthews]

176 Q 806 [Boris Johnson]

177 Q 265 [Willie Walsh]

178 Q 283 [Willie Walsh]

Stuart Fraser (City of London Corporation): We want a runway at Heathrow. We need it started tomorrow. We do not have time to explore another thousand options, frankly. […]

John Dickie (London First): I would be just as clear and even more demanding. I would like to see a runway at Heathrow and I would like to see it now. I would like to see another runway at Gatwick and I would like to see it now. […]

Corin Taylor (Institute of Directors): […] I think we should have a third and preferably a fourth runway at Heathrow, and a second runway at Gatwick.

Mike Spicer (British Chambers of Commerce): […] additional runway capacity in our existing assets—at Stansted, Gatwick and Heathrow—is the way forward. That is the pragmatic solution.

Rhian Kelly (Confederation of British Industry): […] we need an answer that is durable and that does not get changed the moment we have a change of Government.[179]

71. While Heathrow is already operating at full capacity, other airports in the south east are not. It might therefore be assumed that the need for additional capacity at other airports, as described above, is less urgent. However, John Dickie, from London First, reminded us that forecasts show that Gatwick will be full in 10 to 15 years' time and it takes roughly that long to build a new runway with the necessary accompanying infrastructure.[180] Eddie Redfern, from TUI Travel, and Andrew Cooper, of Thomas Cook Group agreed that Gatwick would probably need additional capacity. Mr Redfern added that he would support additional runway capacity at any airport that had demonstrated the need.[181] Michael O'Leary, from Ryanair, and Mark Tanzer, CEO of ABTA, went further, advocating three additional runways: one each at Heathrow, Gatwick and Stansted.[182] Mr O'Leary explained that this excess capacity, spread across three airports, was "absolutely critical" because it "drives competition, […] drives down costs and drives a better deal for passengers for both the UK going abroad and for visitors coming here".[183] He estimated that it would take 10 to 15 years to deliver all three runways and indicated that private investors would probably pay for them.[184] We note, however, that on their own new runways distributed across a number of airports will not provide a long-term solution to the specific problem of capacity at the UK hub airport and that Mr O'Leary's comments represent those of a low-cost airline, which is typically less reliant on the services offered by a hub airport.

72. Gatwick Airport was the lone aviation industry voice that opposed a third runway at Heathrow, on the basis of increasing competition.[185] Stewart Wingate explained that:

179 Q 449 [Stuart Fraser, John Dickie, Corin Taylor, Mike Spicer, and Rhian Kelly]

180 Q 439 [John Dickie]

181 Qq 115-116 [Eddie Redfern and Andrew Cooper]

182 Q 75 [Michael O'Leary]; and Q 118 [Mark Tanzer]

183 Qq 84-85 [Michael O'Leary]

184 Q 78 and Q 96 [Michael O'Leary]

185 Qq 156-157 and Q161 [Stewart Wingate]

> the airport industry in the UK has gone through a great deal of change in the last three or four years following the break-up of BAA, under which the airports were in monopoly ownership. For us, competition is at the heart of a successful airport sector. The vision we are painting is to have a second runway at Gatwick, […] and then, in due course, to have a second runway at Stansted, as well as competition from the likes of Luton, London City and Southend.[186]

While it was acknowledged that Gatwick had managed to diversify its portfolio of flights since the change in ownership,[187] it was suggested that expansion of Gatwick alone would not solve the hub capacity issue.[188] Moreover, Mr Walsh expressed doubts that there was a business case for a second runway at Gatwick.[189] **We note that since the change in ownership, Gatwick has attracted new long-haul services and is keen to compete with Heathrow. We note Gatwick's vision for a second runway and we encourage the airport's operator to develop a robust business case to demonstrate the role that a two-runway airport could play in increasing airport competition. However, on their own, new runways distributed across a number of airports will not provide a long-term solution to the specific problem of capacity at the UK hub airport.**

73. We received a number of written submissions expressing concern that a third runway at Heathrow would inevitably raise the question of a fourth in the future.[190] Mr Walsh was reluctant to rule out the need for a fourth runway at Heathrow but considered that three runways "may well be sufficient".[191] Four runways at Heathrow was the solution favoured by Policy Exchange and CentreForum in a recent report that suggested building the new runways 3 km to the west, as opposed to building a single third runway to the north, of the current Heathrow site.[192] Relocating the runways in this way might result in less noise annoyance for residents under the current flight path, thus addressing the most politically significant objection to expansion of Heathrow.[193] The prospect of less noise from runways that were further away, if combined with a ban on night flights, was considered by the London Borough of Hounslow to be "a more welcome option".[194] We discussed the proposal with David Skelton, from Policy Exchange, who explained that the development could be fully operational by 2030 and that the estimated cost of this proposal was between £8 billion and £12 billion.[195] He accepted, however, that more detailed engineering work was necessary to give a definitive number. This might include a more detailed study of some of the issues identified by Foster and Partners, one of the firms backing a new hub airport in the Thames estuary, who argued that the Policy Exchange proposal "would require the closure of the Wraysbury reservoir" which would have impacts on "the water

186 Q 156 [Stewart Wingate]

187 Q 439 [John Dickie]

188 Q 87 [Dale Keller]; and Q 247 Willie Walsh

189 Q 246 [Willie Walsh]

190 AS 028, para 4d [West Windsor Residents Association]; AS 035, para 7 [Zac Goldsmith MP]; AS 039, para 16.3 [Foster+Partners]; and AS 076, para 4.6 [Richmond Heathrow Campaign]

191 Q 275 [Willie Walsh]

192 Policy Exchange and CentreForum, *Bigger and Quieter: The right answer for aviation*, October 2012

193 Q 636 [David Skelton]

194 Q 736 [Colin Ellar]

195 Q 553 and Q 645 [David Skelton]

supply system, environment and the road network".[196] Mr Skelton maintained that expansion of Heathrow in this way would be "considerably cheaper" than alternative proposals for new hub airports as it made use of the existing infrastructure around the airport, in terms of transport, terminals and other facilities.[197] An expanded Heathrow might also require improvements to existing surface access infrastructure and we return to this subject later in our report.[198]

74. Another plan that would tackle the hub capacity issue and make use of existing infrastructure is the proposal to turn Stansted into a four-runway hub airport. While there are few details on the costs and benefits of this proposal, it is one of three potential solutions that the Mayor of London is studying in detail, ahead of sending his views to the Airports Commission.[199] The Institute of Directors pointed out that Stansted was badly connected to other parts of the UK but acknowledged that "it would be the best location for a new hub airport, should it prove impossible to expand Heathrow".[200] We note that proposals for a new four runway airport south of the existing Luton Airport site have also been put forward.[201]

75. The prospect of a larger Gatwick or Stansted led us to consider whether the UK might be able support two independent, competitor hub airports. Some witnesses argued that the UK market was not big enough to support two separate hubs,[202] and as we previously concluded, we do not support the closure of Heathrow.[203] However, Paul Kehoe, from Birmingham Airport, argued that "even the UAE with a population of 5 million has two hubs, Abu Dhabi and Dubai, […] built around their two airlines Etihad and Emirates".[204] He indicated that it was the airline and not the airport that made the hub and that the UK could be encouraging other airlines to develop a second hub.[205]

76. **The current situation is unsustainable. A two-runway hub airport is not adequate for the needs of the UK. *We have considered the options put to us and on the basis of the evidence we have heard we recommend that the Government allow Heathrow to expand.* Heathrow is the jewel in the crown of international aviation and we believe that a third runway is long overdue. British businesses are overwhelmingly in favour of this option. An expanded Heathrow might require improvements to surface access that would build on existing infrastructure and we make recommendations on this subject later in our report.**

196 AS 039A [Foster+Partners]

197 Qq 553-554 [David Skelton]

198 Paragraph 84

199 Q 767 [Boris Johnson]

200 AS 107, para 2.62 [Institute of Directors]

201 Evening Standard, *Heathrow battle: How Luton could be 'England's airport'*, 24 October 2012; and Policy Exchange and CentreForum, *Bigger and Quieter: The right answer for aviation*, October 2012

202 Q 29 [Simon Buck and Sian Foster]; and Q 438 [Stuart Fraser]

203 Paragraph 67

204 Q 385 [Paul Kehoe]

205 Q 385 [Paul Kehoe]

77. **We note the concerns that a third runway at Heathrow may not be sufficient to meet long-term increases in demand. However, we do not believe that question can properly be addressed until we can more accurately predict the long-term changes in demand resulting from factors such as HS2 in rebalancing the economy and making airports in the Midlands more accessible, and from the potential of additional capacity at other airports such as Gatwick. This, however, does not remove the real need for a third runway at Heathrow to address capacity constraints in the foreseeable future.**

78. **We acknowledge the very real environmental concerns that have been expressed by residents living in the vicinity of Heathrow. *People affected by noise from an expanded Heathrow must be adequately compensated and our recommendations on noise compensation are set out in paragraph 53.***

*79. **We would also like the Airports Commission to assess what conditions may realistically be applied to an expansion of Heathrow in order to mitigate noise pollution.***

80. **We have also considered the proposal to build new runways at Heathrow 3 km to the west of the existing site. While there is currently not much detailed information on this proposal we believe that it has merit, particularly as relocating the runways could reduce the noise annoyance currently experienced by people affected by the flight path. *We recommend that the Government also consider the option to expand Heathrow to a four runway airport to the west of the existing site. We recommend that the Airports Commission assess the feasibility of this proposal and its implications on noise levels.***

Short-term options

81. There are few short-term options that will address the problem of hub capacity. In the absence of new runways, passenger numbers might still be able to grow, for example, through the introduction of larger planes.[206] We also previously noted that there might be some scope to shift small business aircraft to designated business airports, thus freeing up some capacity at Heathrow.[207] Alternatively, changing the way in which airports operate might also have an impact on how much additional capacity could be squeezed out of existing infrastructure. Heathrow Airport recently completed its Operational Freedoms Trial, which looked at the impact of changes in airport operating procedures. Such changes are designed to make the airport more efficient and more resilient but the Mayor of London told us that Londoners are concerned that these measures "will have a detrimental impact on their quality of life".[208] Of particular local concern is the use of mixed-mode operations at Heathrow, whereby planes are allowed to land and take off on the same runway, as distinct from segregated mode where one runway is used for arrivals and the other for departures. This is considered to be a short-term fix to the capacity problem.[209] The London Borough of Hounslow told us that mixed-mode operations "destroy" the quiet respite periods that local residents enjoy.[210]

206 Q 245 [Willie Walsh]

207 Paragraph 33

208 AS 104, para 22 [Mayor of London]

209 AS 040 [IATA]

210 Q 728 [Colin Ellar]; and AS 101, para 4.4 [London Borough of Hounslow]

82. **We welcome changes to operational procedures at Heathrow that will make the airport more efficient and more resilient. Some changes, such as the introduction of mixed-mode operations, may help in the short-term to address the capacity problem. However, mixed-mode operations are inherently undesirable because they deprive local residents of periods of respite from aircraft noise.** ***We recommend that the Government consult residents in the vicinity of Heathrow airport and others affected by noise under the flight path before any final changes to operational procedures are introduced.***

Surface access

83. Good quality, efficient and reliable rail and road access to airports contributes greatly to the experience of passengers, freight operators and airport employees.[211] If surface access links to airports were improved, airlines might also be enticed to transfer their services to airports in the south east that are not as capacity constrained as Heathrow, leading to greater competition between airports.[212] The airlines we heard from expressed particular concerns about the rail links to London's airports. Simon Buck, from BATA, told us that the Gatwick Express used to be a world leading non-stop service between the airport and central London but that it has been degraded to a stopping service on the route from Brighton.[213] Similar concerns were raised in relation to the Stansted Express service.[214] The London Chamber of Commerce and Industry told us that it:

> would like the Thameslink franchise to mandate the reinstating of the dedicated Gatwick Express, an upgrading of rolling stock to suit the needs of air passengers and the removal of ticket barriers to allow a seamless travel experience for passengers who are currently forced to wait and queue to exit the airport and join the rail network.[215]

In broader terms, Gatwick suggested that in designing tender documents for new rail franchises that will serve major international airports, the Government needed to specify clear requirements on the delivery of high-quality air-rail services and lay down the specific characteristics of service that airports need.[216] Gatwick added that rail timetables and infrastructure should be designed to cater for growth in air passengers and commuters separately. The Secretary of State indicated that the Government was committed to investing in improved infrastructure.[217] For example, improving railway links to major ports and airports is one of the strategic priorities in the Government's 'Railways Act 2005 Statement for Control Period 5'. This statement identifies specific ideas that the Government has put forward to improve or augment rail access to Heathrow and Gatwick.[218] However, there is no mention of Stansted or other London airports.

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211 AS 092 [Stansted Airport Ltd]

212 Q 168 [Stewart Wingate]; AS 035, para 17 [Zac Goldsmith MP]; and AS 079, para 13 [London First]

213 Q 65 [Simon Buck]

214 Q 65 [Paul Simmons]

215 AS 046, para 36 [London Chamber of Commerce and Industry]

216 AS 068, paras 30-31 [Gatwick Airport]

217 Qq 843-844 [Rt Hon Patrick McLoughlin MP]

218 Department for Transport, *Railways Act 2005 Statement for Control Period 5*, paras 43-44

84. An expanded Heathrow would also benefit from better surface access. Foster and Partners warned that "without sufficiently new and capacious rail connectivity, an expanded Heathrow would place yet further demands on a local road network already suffering severe capacity constraints and consequentially result in worsening of already poor air quality impacts".[219] Furthermore, Corin Taylor, from the Institute of Directors, argued that if Heathrow remained the UK's main hub airport, the High Speed 2 (HS2) railway line should run straight through Heathrow.[220] Mr Walsh suggested that this might reduce the need for direct flights between, for example, Manchester and Heathrow, thus freeing up a limited amount of capacity at Heathrow.[221] The Secretary of State was reluctant to pre-judge the findings of the Airports Commission but confirmed that the previously proposed "Heathrow loop" to the HS2 network could be reintroduced if necessary.[222]

85. **Surface connections to major airports in the south east are poor. Road access to each of these airports is far from optimal. In terms of rail access, Gatwick and Stansted are on already congested commuter lines. Heathrow is not yet on the national rail network (with the exception of the limited Heathrow Express rail link which connects to London Paddington), although it will shortly be served by Crossrail and a western rail access to Reading and the Great Western network was announced in July 2012. Our view is that Gatwick and Stansted should each be served by a dedicated express rail service that is fit for purpose.**

86. **While the Government has identified the need to improve railway links to major airports as one of its strategic priorities for Control Period 5 it does not go far enough in setting out exactly what its strategy is. *In preparation for the next control period, we recommend that the Government develop a coherent strategy to improve road and rail access to the UK's major airports. As part of this, an assessment should be made of the surface access requirements from the growth of aviation, and in particular, the changes to surface access infrastructure that will be necessary if Heathrow expands. The Government should ensure that the service requirements of major UK airports are incorporated into future rail franchise agreements with rail operators serving those airports. Also, if as we recommend Heathrow is allowed to expand, the Government must ensure that the High Speed 2 rail network serves Heathrow.***

219 AS 039A, para 28 [Foster+Partners]

220 Q 450 [Corin Taylor]

221 Q 256 and Qq 267-268 [Willie Walsh]

222 Qq 834-835 [Rt Hon Patrick McLoughlin MP]; and Transport Committee, Tenth Report of Session 2010–12, *High Speed Rail*, HC 1185

5 Airports outside the south east

87. There is ample airport capacity outside the south east of England to meet demand for the foreseeable future and the use of this capacity is set to increase over the coming decades.[223] Where possible, passengers favour travelling from their local airport.[224] In this chapter we consider how best to support airports outside the south east and encourage growth in the services they offer.

Developing new routes

88. We were told by witnesses that there is great demand for more direct air services from airports outside the south east and that the current lack of connectivity from these airports was damaging local businesses.[225] However, as we previously stated, airlines are commercially driven enterprises and will operate services only where there is a viable market.[226] It was suggested that airlines did not consider routes to emerging markets from airports outside the south east to be attractive.[227] Sian Foster, from Virgin Atlantic Airways gave us an example to illustrate this point. She explained that, according to CAA data, 90,000 people a year fly between Manchester and Hong Kong. There is no direct route, so these passengers are probably travelling through Heathrow or a foreign hub airport. A direct route, using Virgin's smallest aircraft would have a capacity of approximately 175,000 seats per annum. Ms Foster told us that a load factor of 80% would enable the airline to break even and that given, the shortfall in the number of passengers, this route would not be commercially viable.[228] However, Emma Antrobus, from the Greater Manchester Chamber of Commerce, told us that there was evidence that "around 200,000 passengers from the north west flew to Hong Kong last year".[229] Clearly, their evidence of passenger journeys from across the north west, rather than solely from Manchester Airport, makes the Manchester to Hong Kong direct route look more commercially viable. **There is a potential role for local authorities and Local Enterprise Partnerships to ensure that there is robust research on demand for new routes and to ensure that this is communicated to airlines.**

89. While demand from the UK is important, Mike Spicer, from the British Chambers of Commerce (BCC), reminded us that for a route to be financially viable, there has to be demand at both ends. He told us that "it is not just about British businesses and British travellers looking to go overseas; there has to be a reciprocal demand from the other end".[230] It was acknowledged that through improved marketing, awareness could be raised about airports outside the south east—such as Birmingham, Manchester, Liverpool, East

223 Paragraph 22, table 3

224 Q 388 [Andrew Harrison]

225 Q 456 and Qq 460-461 [Jerry Blackett]; Q 457 [Emma Antrobus]

226 Paragraph 32; Q 14 [Simon Buck]; and Q 15 [Sian Foster]

227 Q 366 [Andrew Haines]

228 Q 15 [Sian Foster]

229 Q 469 [Emma Antrobus]

230 Q 439 [Mike Spicer]

Midlands or Bristol Airports—which might make them more attractive to foreign visitors.[231] Birmingham Airport recently suggested that the Government should actively support and market airports outside of the south east by designating them as "National Airports", in order to assist them in attracting new routes.[232] Jonathan Moor, Aviation Director at the DfT, assured us that the DfT spends a lot of time promoting links to airports outside the south east.[233] ***We recommend that the Government take a more active role in promoting airports outside the south east, however, this seems to be at odds with the DfT prioritising the views of British based airlines who have objected to new international routes to our regional airports.***[234]

90. We were keen to find out how else the development of new routes from airports outside the south east might be encouraged. The Scottish Chambers of Commerce (SCC) told us that the Scottish Air Route Development Fund, operated by the Scottish Government until 2007, had provided valuable support to airlines for the development of new routes. Garry Clark, from the SCC, told us that the Fund had been axed in the belief that it would have breached European state aid rules, but the Scottish Government was looking into alternative options that would be compliant with European regulations.[235] We also heard that changes to aviation taxes, particular Air Passenger Duty (APD), might also be used to encourage new routes—we return to this subject later in our report.

91. The commercial viability of a new route does not guarantee that a new service will be introduced. The provision of international air services has traditionally been governed by bilateral air service agreements, which are essentially trade treaties between Governments that might, for example, cover "fifth freedom rights" relating to whether foreign airlines can land in the UK and then fly on to another country. Manchester Airports Group (MAG) suggested that the restrictions inherent in these agreements would "not be in the best interests of passengers or in the interests of rebalancing the UK economy and making best use of existing capacity".[236] MAG suggested that UK airlines are particularly influential in the negotiation of bilateral agreements.[237] Andrew Harrison, CEO of MAG, told us that airports outside the south east are more reliant on foreign airlines for long-haul connectivity and therefore the fact that a UK airline might be influencing the negotiations "puts a third party's not unbiased view into the pot".[238] However, Mr Moor assured us that bilateral agreements were generally not a constraint on access to UK airports. He explained that the fifth freedom rights described above have been available for regional airports for a number of years. He added that there is currently only one route taking advantage of this: a Pakistan International Airlines flight, which flies from Islamabad to Manchester and then

231 Q 471 [Jerry Blackett]; AS 055, para 25 [Bristol Airport Ltd]; AS 086, para 3.18 [Birmingham Airport]; and AS 089, para 21 [Virgin Atlantic Airways]

232 Birmingham Airport, *Don't put all your eggs in one basket: A challenge to aviation orthodoxy*, June 2012, p 19

233 Q 839 [Jonathan Moor]

234 AS 044A [Manchester Airports Group]

235 Qq 474-475 [Garry Clark]

236 AS 044A [Manchester Airports Group]

237 AS 044A [Manchester Airports Group]

238 Q 397 [Andrew Harrison]

on to New York. Mr Moor indicated that other similar services have not been introduced for commercial reasons.[239]

92. An alternative approach would be to liberalise air service agreements and thereby move towards an "open skies" policy. Witnesses acknowledged that an open skies policy might have some advantages but that it could also result in the UK "giving away" its negotiating rights.[240] The Government's current approach is set out in its Aviation Policy Framework:

> We are proposing […] to offer bilateral partners open access to airports outside the south east in order to facilitate inward investment in new routes and extra choice for business and passengers without necessarily having to secure reciprocal access for UK airlines to the airports of the other country.
>
> The granting of such rights would be subject to a case-by-case consideration within the context of the current position in the UK's bilateral aviation relationship with the country concerned (for example, we might not grant such rights if there were concerns that there was not a level competitive playing field in the market, such as if it were argued that the airline in question was in receipt of state aid that was distorting competition).[241]

93. **We welcome the Government's moves towards further liberalisation of air service agreements. However, we question whether the current approach goes far enough in reducing the barriers faced by airports outside the south east that are trying to secure new routes and still leaves the door open for UK airlines to restrict access by claiming unfair competition. An open skies policy which allowed airlines from foreign countries to land and pick up new passengers to a third destination would make some routes commercially viable which they would not be on a point-to-point basis. *There are arguments for the introduction of an unrestricted open skies policy outside the south east, covering both point to point services and fifth freedom rights, and we recommend that the Airports Commission assess the impact that such a policy would have.***

Connectivity through hubs

94. In the absence of direct routes, passengers using airports outside the south east have little choice but to fly to a hub airport and transfer onto a connecting flight to their desired destination. Andrew Haines, from the CAA, told us that this often involves connecting through international hubs rather than a UK hub.[242] Many of the long-haul services that operate from airports outside the south east are in fact supplying transfer traffic to overseas hubs, such as Dubai.[243] Such connections were considered to be helpful in terms of providing connectivity for business and leisure passengers in these areas.[244] However, there are also some potential negative impacts of relying on hubs overseas. For example, as we

239 Qq837-839 [Jonathan Moor]

240 Q 381 [Andrew Haines]; and Q 480 [Paul Gilbert]

241 Department for Transport, *Aviation Policy Framework*, Cm 8584, p 24

242 Q 290 [Andrew Haines]

243 Q 88 [Dale Keller]

244 Q 393 [Paul Kehoe]; Q 394 [Andrew Harrison]; and Q 395 [Robert Sinclair]

previously noted, the use of overseas hubs could generate unnecessary emissions.[245] Moreover, Mr Clark suggested that passengers arriving at the UK hub in London were more likely to connect onwards to visit other parts of the UK.[246]

95. Due to current capacity constraints at the UK's hub airport, connections between UK airports and Heathrow are scarce. For example, the number of seats between Glasgow and Heathrow has more than halved since 2000 and Liverpool Airport lost its flight links with London in 2007.[247] We were told by Derek Provan, from Aberdeen Airport, that demand from his region to Heathrow was greater than demand for travel to all European hubs put together.[248] In the absence of access to the UK's hub, Flybe and Manchester Airport have established an innovative 'regional hub' solution. Flybe has optimised its scheduling at Manchester to allow passengers travelling from other regions to access other air services offered by the airport, thereby providing greater connectivity through Manchester, rather than through Heathrow.[249] However, Manchester does not provide access to many of the emerging markets that a classic international hub airport, such as Heathrow, can offer. Mr Provan suggested that with increased capacity at Heathrow, it might be possible to "carve-out" some slots for airports outside the south east.[250] The Royal Aeronautical Society agreed that there was "a case for a limited number of protected slots for feeder services into Heathrow and possibly Gatwick – particularly from poorly served regions including the South West and Scotland".[251] However, the CAA identified two problems with this approach. Firstly, liberalisation of air transport across Europe means that it is not possible to restrict access on the basis of either destination or nationality of carrier and there are therefore "very clear limitations within European legislation on how you can use public service obligations and so on".[252] Secondly, restricting how scarce capacity is used at a particular airport could well have unintended consequences, such as reducing the number of passengers using the airport.[253] He concluded that this approach would be undesirable.[254]

96. **Transferring through overseas hubs provides customers in regions outside the south east with connectivity that they cannot at present achieve through the capacity constrained UK hub airport. We hope that as capacity increases at the UK's hub airport, connectivity between London and other UK regions improves. *In the short-term, the Government should investigate whether it would be possible—within the framework of current European regulations—to protect slots at Heathrow for feeder services from poorly served regions.***

245 Paragraph 38

246 Q 490 [Garry Clark]

247 Q 414 [Craig Richmond]; Q 459 [Garry Clark]; and AS 063, para 30 [Liverpool Chamber of Commerce]

248 Q 412 [Derek Provan]

249 AS 094, para 2d [Flybe]

250 Q 412 [Derek Provan]

251 AS 011, para 22 [Royal Aeronautical Society]

252 Q 305 [Andrew Haines]; and Q 357 [Andrew Haines]

253 Q 357 [Andrew Haines]

254 Qq 357-358 [Andrew Haines]

Surface access

97. Good surface access is crucial to ensure that airports outside the south east are more attractive both to potential passengers and to the airlines providing services. We were told that road and rail links to the main airports outside the south east were generally quite good but that there was room for improvement.[255] In particular, the development of the HS2 network was considered by some to be a "game changer" with the potential to transform the way people are connected around the country.[256] The network brings Birmingham Airport and Manchester Airport much closer to London and as we previously noted, it could potentially relieve some capacity at the crowded south east airports.[257]

Economic regulation

98. Since the publication of our recent report, *Draft Civil Aviation Bill: Pre-Legislative Scrutiny*, we have maintained our interest in the system of economic regulation of airports by the CAA. Charges levied by the CAA on airports help it to fund its regulatory activities. These charges vary for "designated" (Heathrow, Gatwick and Stansted) and "non-designated" airports. Designated airports are deemed to have market power and, as such, could increase charges to airlines to the detriment of consumers. In contrast, non-designated airports operate in competitive markets, where airlines often hold the market power and can negotiate lower charges. During our inquiry into the then draft Civil Aviation Bill, Mr Haines assured us that despite the changes to the regulatory regime, the CAA was "looking to reduce its costs and burden to industry".[258] However, since then we have heard concerns, particularly from Bristol and Newcastle Airports, that the CAA has proposed to increase its charges even to non-designated airports.[259] We raised this with the CAA and we were told that:

> Overall, the main charges we are proposing for 2013/14 are held at current levels, which represents a reduction in real terms. However, some specific charges are being lowered whilst others are being raised. The increase in non-designated airport charges […] has been proposed to reduce the cross-subsidy that this area of the industry has benefited from over a number of years. To this end, we also anticipate a further increase in 2014/15 to fully eliminate the cross-subsidy. Historically, the cross-subsidy has been paid by airlines, which also operate in a competitive market.[260]

Mr Haines explained that at the time he answered our question in relation to the draft Civil Aviation Bill, he had responded honestly on the basis of the general direction of CAA

255 Q 495 [Jerry Blackett]; Q 496 [Emma Antrobus]; AS 038 [Newcastle International Airport Ltd]; and AS 055, para 23 [Bristol Airport Ltd]

256 Q 406 [Paul Kehoe]; Q 476 [Jerry Blackett]; and Q 477 [Emma Antrobus]

257 Paragraph 84; Q 406 [Paul Kehoe]; and Q 476 [Jerry Blackett]

258 Transport Committee, Thirteenth Report of Session 2010-12, *Draft Civil Aviation Bill: Pre-Legislative Scrutiny*, HC 1694, Ev 20

259 Qq 399-401 [Robert Sinclair]; Qq 422-423 [Graeme Mason]; and AS 055A [Bristol Airport]

260 Qq 295-301 [Andrew Haines]; and AS 075A [Civil Aviation Authority]

charges, and that the disaggregated fees by airport designation type had at that time not been considered.[261] The CAA's charging proposals are currently subject to consultation.

99. **We are disappointed to hear that the CAA proposes to increase charges for non-designated airports, particularly given that we were previously assured that the CAA was looking to reduce its costs and burden to industry. We consider that higher charges for these airports risk making them less attractive to airlines if passed on or, more likely, impact on their ability to operate profitably.** ***We recommend that the CAA reconsider the need to impose these charges.***

261 Q 301 [Andrew Haines]

6 Taxation

Fuel duty and VAT

100. The 1944 Convention on International Civil Aviation, also known as the Chicago Convention, established an international agreement that aviation fuel should be exempt from tax. In the UK, airlines are therefore exempt from paying fuel duty. Airlines are also exempt from paying VAT. The European Commission favours taxation of aircraft fuel, however an attempt to introduce this through a worldwide agreement to overturn provisions in the 1944 Chicago Convention was rejected by ICAO.[262] As a compromise, Directive 2003/96/EC allows EU Member States to tax aviation fuel for domestic flights and through agreements on a case by case basis with other EU member states.[263]

101. We heard that the loss of tax revenue meant that the contribution of aviation to the UK economy was overestimated and that aviation should be taxed in the same way as other modes of transport.[264] However, the low levels of taxation have to some extent been addressed by the introduction in 1994 of Air Passenger Duty (APD).[265]

Air Passenger Duty

102. APD is charged on a per passenger basis on all passenger flights from UK airports. UK APD rates are higher than those charged by any other country in Europe, many of which have abandoned such taxes as being damaging to the economy.[266] Many of the airlines we heard from were opposed to high rates of APD, as were representatives from airports, the tourism industry and UK businesses.[267] British Airways told us that it is:

> putting UK aviation at a unique and increasing disadvantage among European competitors. APD distorts international markets and undermines the UK's attractiveness as a destination for business and tourism. APD is the highest aviation tax of its type in the world, while several European countries –Belgium, the Netherlands, and Denmark - have in recent years abandoned their aviation taxes in recognition of the economic damage they had done.[268]

Mr O'Leary told us APD was a "complete disaster and has caused visitor numbers to the UK to decline" and BAR UK told us that rates had become so high, that they were even causing diplomatic protests.[269]

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262 AS 106, para c.iv [Institution of Mechanical Engineers]

263 AS 106, para c.iv [Institution of Mechanical Engineers]

264 QQ 670-671 [Keith Allott]; AS 010, para 2.4 [HACAN]; and AS 109, para 17 [Greenpeace]

265 AS 042, Annex A [Stop Stansted Expansion]

266 AS 058, para 11 [British Airline Pilots' Association]; and AS 078 [Scottish Passenger Agents Association]

267 For example: Q 92 [Dale Keller]; Q 125 [Andrew Cooper and Eddie Redfern]; AS 040 [IATA]; AS 044, para 2.8 [Manchester Airports Group]; AS 046, para 19 [London Chamber of Commerce and Industry]; AS 078 [Scottish Passenger Agents Association]; AS 050 [A Fair Tax on Flying Campaign]; and AS 094, para 4.a [Flybe]

268 AS 110, para 1.5 [British Airways]

269 Q 95 [Michael O'Leary]; and AS 020 [BAR UK]

103. Paul Simmons, from easyJet, told us that ideally, HM Treasury should carry out "a fully costed study" to assess the industry's assertion that APD is damaging UK plc.[270] In the absence of such a study, a consortium of UK and Irish airline operators commissioned PricewaterhouseCoopers LLP (PwC) to "provide an evidence-based assessment" of the role of APD in the UK economy. The PwC report concluded that:

- abolishing APD could boost UK GDP by 0.46 per cent in the first year, with continuing benefits to 2020;
- the GDP boost to the UK economy would amount to at least £16 billion in the first three years and result in almost 60,000 extra jobs in the UK over the longer term; and
- abolishing APD would pay for itself by increasing revenues from other sources such as income tax and VAT. This net benefit, even after allowing for the loss of APD revenue, would be almost £500m in the first year.[271]

104. During our inquiry we heard calls to either freeze or scrap APD.[272] When we questioned the Secretary of State for Transport, he expressed an interest in the PwC report but informed us that this was "a matter for the Chancellor [… and] we have to bear in mind how much APD raises".[273] The Chancellor of the Exchequer subsequently announced, in his 2013 Budget, that APD would rise in line with the Retail Price Index from April 2013 and again from April 2014.

105. ***We recommend that HM Treasury conduct and publish a fully costed study of the impact of APD on the UK economy. We would, in particular, like to know what the Government's view is of the PwC conclusion that abolishing APD would pay for itself by increasing revenues from other sources. If such a study produces clear evidence that APD has a negative effect on the UK economy and Government revenue, we recommend that APD is significantly reduced or abolished.***

Differential rates and APD holidays

106. High rates of APD were considered to be a barrier to the introduction of new services, particularly at airports outside the south east. For example, Manchester Airport failed to attract a direct route to Kuala Lumpur, and APD was cited as one of the key factors in that decision.[274] The airports and representatives of businesses in regions outside the south east were broadly in favour of introducing differential rates of APD or introducing an APD holiday to help encourage the development of new routes.[275] It was also argued that differential rates of APD might help to shift demand away from capacity constrained

270 Q 8 [Paul Simmons]

271 PricewaterhouseCoopers LLP, *The economic impact of Air Passeneger Duty*, February 2013; and British Airways Press Office, *Scrapping Flight Tax Could Pay For Itself And Create 60,000 Jobs, Says Pioneer Study*, 4 February 2013

272 Q 95 [Michael O'Leary]; Qq 280-281 [Willie Walsh]; Qq 452-453 [Corin Taylor, Mike Spicer, and Rhian Kelly]

273 Q 826 [Rt Hon Patrick McLoughlin MP]

274 Q 479 [Emma Antrobus]

275 Q 389 [Robert Sinclair and Paul Kehoe]; Q 419 [Graeme Mason and Craig Richmond]; and Q 499 [Paul Gilbert]

airports.[276] Unsurprisingly, the more capacity constrained airports in the south east were opposed to this suggestion.[277] The airlines were also opposed to differential rates of APD and were concerned that they would have unpredictable effects.[278] **There are complex issues and vested interests to be taken into account in any consideration of the merits of differential rates of Air Passenger Duty.** ***We recommend that the Government carry out an objective analysis of the impacts such a policy might have. On the other hand, we see merit in the concept of an APD holiday and recommend that this be introduced for a 12-month trial period for new services operating out of airports outside the south east. After this time, the DfT should assess the extent to which it has led to the development of new routes.***

Devolution

107. In 2012, the Government devolved to Northern Ireland the power to set APD rates for direct long-haul flights departing from Northern Ireland. The Northern Ireland Assembly has decided to set APD rates for direct long haul flights at zero.[279] One of the reasons for this move was that passengers in Northern Ireland were increasingly travelling across the border to take flights from Dublin that were significantly cheaper due to lower levels of taxation. We heard calls from the Scottish Chambers of Commerce that APD should also be devolved to the Scottish Parliament.[280] However, we were told that this might be problematic, as passenger traffic might be lost from the north of England to Scotland.[281] **While we accept the need to devolve responsibility for Air Passenger Duty (APD) in Northern Ireland, we do not support further devolution of APD at this stage as it may have negative impacts, for example, in the north of England.**

276 Q 207 [Brian Ross]; Q 389 [Andrew Harrison]

277 Q 180 [Colin Matthews]; and Q 181 [Stewart Wingate]

278 Q 50 [Simon Buck]; Q 51 [Sian Foster]; Q 52 [Paul Simmons]; Q 100 [Otto Grunow]

279 Northern Ireland Affairs Committee, Second Special Report of Session 2012-13, *An air transport strategy for Northern Ireland: Government Response to the Committee's First Report of Session 2012–13*, HC 960

280 AS 059, para 8 [Scottish Chambers of Commerce]

281 Q 281 [Willie Walsh]; and Q 453 [Mike Spicer and Rhian Kelly]

7 Concluding remarks

108. **It is immensely disappointing that a decade after the publication of the 2003 White Paper and the then Government's decision to support a third runway at Heathrow, the UK is still faced with the unresolved problem of aviation capacity. Following decades of policy papers, inquiries, taskforces, and commissions, it is the lack of a long-term cross-party political strategy for aviation that is principally to blame for the very real danger that the UK could lose its status as an international hub for aviation.**

109. **We have heard evidence from the main players in aviation and many other interested parties. We have found that there is a clear need for greater capacity at the UK's hub airport. Our view is that a new hub airport should not be built at this time. A split hub is not a viable option. Although high speed rail connections within the UK and to the near continent, if properly connected to our main airports, present opportunities to achieve a modal shift from domestic and short-haul international flights, thereby releasing additional capacity for long-haul routes. A third runway at Heathrow is necessary to meet existing and future demand that can be reasonably predicted. Longer term, further work is required to assess whether further expansion at Heathrow, potentially via a new airport to the west of the current site, is required. We recommend that the Airports Commission obtains this information so that an evidence-based decision can be made.**

The main challenges going forward

110. **It is less than ideal that the Airports Commission is working to a protracted timetable, with a final report not to be produced until after the 2015 General Election. We could complain that this is yet another example of important decisions on aviation being kicked into the long grass, but instead we challenge the Commission to use this opportunity to, once and for all, provide a robust and independent evidence base for future decisions. It is our hope that the Commission will produce an evidence base that is widely accepted across the political spectrum, and clear recommendations for action. The challenge for the post-2015 Government will be to quickly get to grips with the recommendations of the Airports Commission and not seek excuses for further delay.**

Conclusions and recommendations

Growth in demand

1. Growth in demand for air travel is inevitable. The UK is currently well connected to the rest of the world but there is no room for complacency at a time when the UK's hub airport is faced with increasing global competition. Building greater capacity—in the form of new runways, terminals, or airports—takes time. It would therefore be prudent to acknowledge the long-term upward trend in demand for air travel and act now to maintain the UK's international standing in aviation. We set out our recommendations on how this should be achieved later in our report. (Paragraph 27)

2. While forecasting is inherently uncertain we have no reason to doubt the overall analysis of national demand. There are, however, questions remaining about the long-term forecasts. We welcome the Airport Commission's discussion paper on aviation demand forecasts and hope that the Commission will address some of the anomalies we have identified. We note that it is important that the drivers of hub demand are better understood as this will help to identify the extent to which hub demand might be relocated. (Paragraph 35)

Dealing with the impacts of growth

3. Aviation can and should be permitted to grow. Despite existing spare capacity, demand could not easily be switched between different geographical locations. We therefore consider that an increase in capacity will be necessary to accommodate sustainable aviation growth. We recommend that any future plans for increased aviation capacity take into account progress on global initiatives to deal with emissions. (Paragraph 40)

4. Stacking of aircraft, particularly over London, generates unnecessary emissions. We recommend that NATS carry out modelling work to identify the extent to which stacking might be reduced if an additional runway is built at Heathrow. This work should be reported to the Airports Commission, ahead of its final report. (Paragraph 42)

5. We recommend that airport operators develop action plans to reduce air pollutants that are generated by vehicles travelling within airports. These should include a timeline for the introduction of low carbon airport vehicles, including aircraft towing vehicles. We note that many airports already produce surface access strategies setting targets for reducing the number of staff and passengers travelling to and from airports by car. Where air pollutants exceed EU limits Government should draw up plans to ensure that EU limits are met. (Paragraph 44)

6. Aircraft noise is an annoyance to a large number of people. We note that airlines value an aircraft's environmental performance and that new aircraft are quieter than their predecessors. Aircraft manufacturers should continue to develop quieter aircraft and, to facilitate this, we recommend that the Government seek to influence global noise standards through its involvement with the International Civil Aviation

Organization. Airports should encourage airlines to take older, noisier aircraft out of service at the earliest possible opportunity. (Paragraph 51)

7. We urge the Civil Aviation Authority immediately to review existing flight paths and landing angles to reduce noise pollution, especially over London. (Paragraph 52)

8. People living in the vicinity of airports must be properly compensated—for example through the provision of noise insulation—for the noise annoyance they experience, especially when growth in Air Traffic Movements at a given airport result in the level of noise they experience increasing significantly. We recommend that the Government and the aviation industry develop a comprehensive nationwide approach to noise compensation. As part of this work, an assessment should be made of the minimum standards of compensation that are acceptable, and of the costs and benefits associated with providing different types of compensation to those experiencing different levels of noise (for example, 55 dB Lden and 57-63 dB LAeq16h). We consider that this work should be carried out in parallel with the work of the Airports Commission so that the compensation package is clearly defined by the time the Commission makes its final recommendations. (Paragraph 53)

The case for capacity at the UK's hub airport

9. The UK's hub airport is of great importance to all the regions of the UK. It plays a unique role in connecting the country to the rest of the world—a role that could not be adequately fulfilled by a non-hub airport. It is imperative that the UK maintains its status as an international aviation hub. (Paragraph 56)

10. There is a specific capacity problem at Heathrow Airport. It is the UK's only hub airport, it has been short of capacity for a decade, and it is currently operating at full capacity. Furthermore, there is a lack of capacity to meet demand during peak hours across all airports in the south east. There may be some scope to shift small business aircraft to designated business airports. However, this will have limited impact. The vast majority of aircraft movements at Heathrow are commercial flights, which carry a mixture of leisure passengers, business passengers and cargo. It is therefore impractical to suggest that Heathrow's capacity problem can be resolved by shifting commercial flights of a "specific" type (for example, leisure flights) to another airport. Furthermore, we note that airlines make decisions on where services operate based on commercial reasons. We also note that some non-hub airports may have a role to play in providing flights to emerging markets and that the HS2 rail project offers the potential for other airports such as Birmingham and East Midlands to attract more passengers from London and the South East. For example, with HS2 the rail journey time from central London to Birmingham airport will be less than 40 minutes, not dissimilar from journey times to the main London airports. This, however, is not a substitute for increased hub capacity. (Paragraph 33)

11. Any increase to capacity at the UK's hub airport must address the need to improve airport resilience, particularly in the event of bad weather, but this should not restrict the overall benefits derived from increasing runway capacity. (Paragraph 57)

Option1: A new hub airport to the east of London

12. While there is some support for a new hub airport to the east of London we note that there are significant challenges associated with such a development. These include: designating airspace in an already crowded environment, mitigating birdstrike, and dealing with environmental challenges such as potential future sea-level rise and the risk of flooding. There are also potential impacts on habitats in and around the Thames estuary to take into account. Furthermore, uncertainty remains over the number of people that would be affected by noise from a new hub airport as both it and the surrounding community grew. (Paragraph 66)

13. We reject the proposal for a new hub airport east of London, in part due to the challenges described above, but primarily on the following bases:

- a new hub airport will not be commercially viable without significant public investment in new infrastructure, as shown by the research we commissioned;
- a new hub airport will only be viable if Heathrow closes as a commercial airport;
- a new hub airport will increase passenger movements from centres of population, potentially generating more carbon emissions as passengers have to travel further to and from the terminals; and
- the closure of Heathrow would, in our view, be unacceptable due to the impact on the local economy and the huge disruption caused by the potential relocation of businesses and individuals in the vicinity of Heathrow.

We are also unconvinced that the aviation industry—which would ultimately pay for using the new hub through airport charges—would support a new hub airport at the level of costs which are likely to be required. It should not be assumed that all traffic would automatically transfer from Heathrow to a new hub as many passengers, particularly those with journeys originating in or destined for west London, might choose to use Gatwick, Birmingham, Bristol, Cardiff, Exeter or Luton airports instead, even if that meant connecting through a hub airport overseas. (Paragraph 67)

Option 2: A split hub airport

14. We conclude that a split hub would not be a viable solution to the hub capacity problem and we reject these proposals. (Paragraph 68)

Option 3: Expansion of existing airports

15. We note that since the change in ownership, Gatwick has attracted new long-haul services and is keen to compete with Heathrow. We note Gatwick's vision for a second runway and we encourage the airport's operator to develop a robust business case to demonstrate the role that a two-runway airport could play in increasing airport competition. However, on their own, new runways distributed across a

number of airports will not provide a long-term solution to the specific problem of capacity at the UK hub airport. (Paragraph 72)

Our conclusions on the expansion of Heathrow

16. The current situation is unsustainable. A two-runway hub airport is not adequate for the needs of the UK. We have considered the options put to us and on the basis of the evidence we have heard we recommend that the Government allow Heathrow to expand. Heathrow is the jewel in the crown of international aviation and we believe that a third runway is long overdue. British businesses are overwhelmingly in favour of this option. An expanded Heathrow might require improvements to surface access that would build on existing infrastructure and we make recommendations on this subject later in our report. (Paragraph 76)

17. We note the concerns that a third runway at Heathrow may not be sufficient to meet long-term increases in demand. However, we do not believe that question can properly be addressed until we can more accurately predict the long-term changes in demand resulting from factors such as HS2 in rebalancing the economy and making airports in the Midlands more accessible, and from the potential of additional capacity at other airports such as Gatwick. This, however, does not remove the real need for a third runway at Heathrow to address capacity constraints in the foreseeable future. (Paragraph 77)

18. We acknowledge the very real environmental concerns that have been expressed by residents living in the vicinity of Heathrow. People affected by noise from an expanded Heathrow must be adequately compensated and our recommendations on noise compensation are set out in paragraph 53. (Paragraph 78)

19. We would also like the Airports Commission to assess what conditions may realistically be applied to an expansion of Heathrow in order to mitigate noise pollution. (Paragraph 79)

20. We have also considered the proposal to build new runways at Heathrow 3 km to the west of the existing site. While there is currently not much detailed information on this proposal we believe that it has merit, particularly as relocating the runways could reduce the noise annoyance currently experienced by people affected by the flight path. We recommend that the Government also consider the option to expand Heathrow to a four runway airport to the west of the existing site. We recommend that the Airports Commission assess the feasibility of this proposal and its implications on noise levels. (Paragraph 80)

21. We welcome changes to operational procedures at Heathrow that will make the airport more efficient and more resilient. Some changes, such as the introduction of mixed-mode operations, may help in the short-term to address the capacity problem. However, mixed-mode operations are inherently undesirable because they deprive local residents of periods of respite from aircraft noise. We recommend that the Government consult residents in the vicinity of Heathrow airport and others affected by noise under the flight path before any final changes to operational procedures are introduced. (Paragraph 82)

Surface access to airports

22. Surface connections to major airports in the south east are poor. Road access to each of these airports is far from optimal. In terms of rail access, Gatwick and Stansted are on already congested commuter lines. Heathrow is not yet on the national rail network (with the exception of the limited Heathrow Express rail link which connects to London Paddington), although it will shortly be served by Crossrail and a western rail access to Reading and the Great Western network was announced in July 2012. Our view is that Gatwick and Stansted should each be served by a dedicated express rail service that is fit for purpose. (Paragraph 85)

23. While the Government has identified the need to improve railway links to major airports as one of its strategic priorities for Control Period 5 it does not go far enough in setting out exactly what its strategy is. In preparation for the next control period, we recommend that the Government develop a coherent strategy to improve road and rail access to the UK's major airports. As part of this, an assessment should be made of the surface access requirements from the growth of aviation, and in particular, the changes to surface access infrastructure that will be necessary if Heathrow expands. The Government should ensure that the service requirements of major UK airports are incorporated into future rail franchise agreements with rail operators Also, if as we recommend Heathrow is allowed to expand, the Government must ensure that the High Speed 2 rail network serves Heathrow. (Paragraph 86)

Airports outside the south east

24. There is a potential role for local authorities and Local Enterprise Partnerships to ensure that there is robust research on demand for new routes and to ensure that this is communicated to airlines. (Paragraph 88)

25. We recommend that the Government take a more active role in promoting airports outside the south east, however, this seems to be at odds with the DfT prioritising the views of British based airlines who have objected to new international routes to our regional airports. (Paragraph 89)

26. We welcome the Government's moves towards further liberalisation of air service agreements. However, we question whether the current approach goes far enough in reducing the barriers faced by airports outside the south east that are trying to secure new routes and still leaves the door open for UK airlines to restrict access by claiming unfair competition. An open skies policy which allowed airlines from foreign countries to land and pick up new passengers to a third destination would make some routes commercially viable which they would not be on a point-to-point basis. There are arguments for the introduction of an unrestricted open skies policy outside the south east, covering both point to point services and fifth freedom rights, and we recommend that the Airports Commission assess the impact that such a policy would have. (Paragraph 93)

27. Transferring through overseas hubs provides customers in regions outside the south east with connectivity that they cannot at present achieve through the capacity

constrained UK hub airport. We hope that as capacity increases at the UK's hub airport, connectivity between London and other UK regions improves. In the short-term, the Government should investigate whether it would be possible—within the framework of current European regulations—to protect slots at Heathrow for feeder services from poorly served regions. (Paragraph 96)

28. We are disappointed to hear that the CAA proposes to increase charges for non-designated airports, particularly given that we were previously assured that the CAA was looking to reduce its costs and burden to industry. We consider that higher charges for these airports risk making them less attractive to airlines if passed on or, more likely, impact on their ability to operate profitably. We recommend that the CAA reconsider the need to impose these charges. (Paragraph 99)

Air passenger duty

29. We recommend that HM Treasury conduct and publish a fully costed study of the impact of APD on the UK economy. We would, in particular, like to know what the Government's view is of the PwC conclusion that abolishing APD would pay for itself by increasing revenues from other sources. If such a study produces clear evidence that APD has a negative effect on the UK economy and Government revenue, we recommend that APD is significantly reduced or abolished. (Paragraph 105)

30. There are complex issues and vested interests to be taken into account in any consideration of the merits of differential rates of Air Passenger Duty. We recommend that the Government carry out an objective analysis of the impacts such a policy might have. On the other hand, we see merit in the concept of an APD holiday and recommend that this be introduced for a 12-month trial period for new services operating out of airports outside the south east. After this time, the DfT should assess the extent to which it has led to the development of new routes. (Paragraph 106)

31. While we accept the need to devolve responsibility for Air Passenger Duty (APD) in Northern Ireland, we do not support further devolution of APD at this stage as it may have negative impacts, for example, in the north of England. (Paragraph 107)

Our concluding remarks

32. It is immensely disappointing that a decade after the publication of the 2003 White Paper and the then Government's decision to support a third runway at Heathrow, the UK is still faced with the unresolved problem of aviation capacity. Following decades of policy papers, inquiries, taskforces, and commissions, it is the lack of a long-term cross-party political strategy for aviation that is principally to blame for the very real danger that the UK could lose its status as an international hub for aviation. (Paragraph 108)

33. We have heard evidence from the main players in aviation and many other interested parties. We have found that there is a clear need for greater capacity at the UK's hub airport. Our view is that a new hub airport should not be built at this time.

A split hub is not a viable option. Although high speed rail connections within the UK and to the near continent, if properly connected to our main airports, present opportunities to achieve a modal shift from domestic and short-haul international flights, thereby releasing additional capacity for long-haul routes. A third runway at Heathrow is necessary to meet existing and future demand that can be reasonably predicted. Longer term, further work is required to assess whether further expansion at Heathrow, potentially via a new airport to the west of the current site, is required. We recommend that the Airports Commission obtains this information so that an evidence-based decision can be made. (Paragraph 109)

34. It is less than ideal that the Airports Commission is working to a protracted timetable, with a final report not to be produced until after the 2015 General Election. We could complain that this is yet another example of important decisions on aviation being kicked into the long grass, but instead we challenge the Commission to use this opportunity to, once and for all, provide a robust and independent evidence base for future decisions. It is our hope that the Commission will produce an evidence base that is widely accepted across the political spectrum, and clear recommendations for action. The challenge for the post-2015 Government will be to quickly get to grips with the recommendations of the Airports Commission and not seek excuses for further delay. (Paragraph 110)

Annex A: Programme of the visit to Frankfurt Airport

Thursday 13 December 2012

Flight from the UK to Frankfurt.

- Presentations by Fraport AG
- Lunch with Fraport AG and Lufthansa AG
- Meeting with Lufthansa AG
- Guided tour of Frankfurt Airport with Fraport AG

Flight from Frankfurt to the UK.

Annex B: Commissioned research: Would a new hub airport be commercially viable?

Executive summary

The Transport Committee is conducting an inquiry into the UK's aviation strategy.282 Commissioned by the Committee and prepared by Oxera, this report assesses the conditions under which a new hub airport is, or is not, likely to be commercially viable.

The assessment does not evaluate a specific proposal for a new hub; rather, it includes a range of scenarios covering various airport designs, demand forecasts, cost estimates and assumptions about the level of airport charges.

In all of the examined scenarios, Oxera's analysis suggests that a new hub airport would not be commercially viable. Specifically:

- all the scenarios have a negative value at a rate of return that a private investor would require; and
- the analysis implies that substantial public support/subsidy would be needed (in the range of £10–30 billion in today's money for the base-case scenarios examined).

Nevertheless, from a public perspective, the project may still offer good value for money, depending on the scope of wider benefits that the airport could facilitate.

282 See http://www.parliament.uk/business/committees/committees-a-z/commons-select/transport-committee/news/aviation---tor/.

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1 Introduction

1. The Transport Committee (the Committee) is conducting an inquiry into the UK's aviation strategy.[283] Commissioned by the Committee and prepared by Oxera, this report provides an assessment of the conditions under which a new hub airport is, or is not, likely to be commercially viable. As part of this review, Oxera has been asked to develop a set of questions for the Committee to use during its inquiry to probe the evidence put forward by witnesses.[284] These questions are presented in the boxes throughout the report.

2. The assessment is deliberately undertaken from the perspective of a private investor taking account of the private returns expected from the airport. This is a conceptually different assessment from one encompassing wider economic and social concerns, which might be conducted from the perspective of government. The review is also undertaken at a conceptual level, drawing on evidence from existing proposals, but not seeking to conclude whether any of the specific proposals for a new airport are commercially viable.

3. A new hub airport would provide a step change in the UK's aviation capacity, leading to a significant impact on transport users, the economy and the environment. It would involve a substantial capital investment. This review seeks to assess whether that investment could be made by the private sector alone, or whether some form of state support would be required.

4. Proposals for a new hub airport are just one option for enhanced aviation capacity in South East England. It is therefore appropriate to acknowledge upfront that there are other options for expanded capacity, including new runways at Heathrow, Gatwick, Stansted or elsewhere. (The report does not review these proposals in detail.) However, understanding the interaction between a new airport and existing airports, and the financial prospects for such an airport, is technically complex, and the proposals put forward to date do not generally include an extensive analysis of many of these issues.

5. Broadly, the areas where questioning is likely to prove beneficial include the following.

- **Scenarios**—what are the feasible designs and locations for a new hub airport?
- **Demand**—how might changes in economic growth affect demand projections? How might demand be abstracted from existing airports and absorbed by the new hub? What categories of traffic would be most likely to volunteer to move from existing airports?
- **Costs**—what is the range of likely costs for the construction and operation of the airport, including surface access?
- **Charges**—what is the likely level of charges that could be supported at the airport, given competitive constraints?
- **Funding**—are proponents of a new airport expecting it to be viable on a stand-alone commercial basis, or that public funding would be required? Can the funding of the proposed investments be split into components with different sources of funding?

[283] See http://www.parliament.uk/business/committees/committees-a-z/commons-select/transport-committee/news/aviation---tor/.

[284] Oxera Consulting Ltd was awarded the commission following a competitive tender process.

The report proceeds by examining each of these areas in turn. It has deliberately been kept concise, with additional detailed supporting material being provided in a series of appendices.

2 Scenarios

1. The viability of a new hub will be affected by its precise design details. Factors such as size and location will have different implications for revenues and costs, and hence for commercial viability. There is also uncertainty around factors that are outside the control of aviation policy. In this report, Oxera assesses a non-exhaustive range of combinations of these factors. Full details of the scenarios tested are provided in Table A2.1 in Appendix 2.

Design factors

2. The design of the airport (for example, the number of runways and terminals) will inevitably influence the costs of the proposal (see section 4). All else being equal, the larger the airport, the greater the costs of the land and construction. Moreover, the designed facilities at an airport need to be considered in combination with policy towards existing airports—for example, the larger a new airport, the more likely it is that existing airports will close as a consequence.

3. The location of the airport will influence the amount of passengers (and air freight) who will be able to use it (and hence the demand for it), based on surface access times, and/or will affect whether new surface access links need to be built, and thus the costs of a new hub. The proposed airport locations of a selection of recent proposals are presented in Figure A3.1 in Appendix 3. Heathrow is situated close to a number of major motorways and has a direct, dedicated rail link from central London. A proposal for a new airport in a different location, such as the Thames Estuary, is likely to have very different access times, particularly for travellers from parts of Britain outside London. For example, Figure A3.2 in Appendix 3 gives examples of road catchment areas for Heathrow, and those for a proposal at Cliffe in Kent.

Q: What would the policy objectives for a new airport be, and how would decisions be taken about location and design?

Q: Would the new airport be designed as a replacement for Heathrow, as a competitor, or as part of a managed multi-airport system in which government allocates traffic between airports according to traffic distribution rules?

External factors

4. Regardless of the precise details of the proposed scheme, a number of factors are inherently uncertain and beyond the control of aviation policy.

5. First, the level of future aviation demand will be influenced by the future development of the UK and world economies (see section 3). Given the recent changes in forecasts for short- and medium-term economic growth,[285] and the prospect that long-term growth has also changed, scenarios for different rates of growth in overall aviation demand are tested.

6. Second, the degree of abstraction of traffic from other London airports and other EU hubs will be critical in influencing the traffic that is available for the new hub (see section 3). This will depend on passengers' and airlines' willingness to switch airports. If the only traffic diverted from

[285] See HM Treasury (2012), 'Autumn Statement', December.

existing airports comes from Heathrow, the outcome for demand for the new hub will be substantially lower than if some traffic is also diverted from Gatwick, Stansted, other airports and other transport modes.

7. Third, passengers and airlines' price sensitivity will influence the extent to which prices at a new airport could rise (in real terms) and how quickly in order to cover costs. (Alternatively, in some scenarios, charges at existing airports could be increased in order to pre-fund the new airport) (see section 5).

8. Lastly, the level of costs will be influenced by a range of external factors, such as wage rates. Some cost components are much more uncertain than others—for example, the cost of reclaiming land from the Thames Estuary is much more uncertain than the market price of agricultural land onshore (see section 4).

Q: To what extent have the business cases for existing proposals been tested against external shocks, such as lower demand and cost overruns?

Q: What assumptions do the proposals make about developments at other airports in the South East, including the provision of extra capacity?

Summary

9. This section has considered the factors that could influence the commercial viability of a new airport. These are analysed further in sections 3 to 5 below.

3 Demand for aviation

1. In assessing whether a new hub airport would be commercially viable, the first consideration is the extent of future demand from passengers (and, to a lesser extent, air freight) for air travel. Demand forecasts are needed in order to calculate estimates of the revenue that could be earned from a new airport, and hence the expected cash flows (which have been modelled by Oxera, see Appendix A.8). There will be a relationship between outturn demand and the prices charged by an airport (see section 5).

New/generated demand

2. The DfT publishes official projections of constrained and unconstrained future UK aviation demand.[286] The latest edition was published in August 2011, selected results of which are shown in Table 3.1.[287] The constrained demand forecasts are reported for the 'maximum use' capacity scenario;[288] this assumes that no new runways will be built in the UK, but that airports will maximise their current potential runway capacity in the medium term. The unconstrained scenario allows for capacity expansion.

Table 3.1 UK terminal passenger forecasts, central estimates (million passengers per annum, mppa)

	Unconstrained			Constrained (maximum use)		
	Date forecast made			Date forecast made		
Forecast year	**2007**	**2009**	**2011**	**2007**	**2009**	**2011**
2010	270	260	211	270	260	211
2020	385	365	275	355	345	270
2030	495	465	345	425	405	335
2040	–	–	425	–	–	405
2050	–	–	520	–	–	470

Source: Department for Transport (2007), 'UK Air Passenger Demand and CO2 Forecasts', November, pp. 37–43; (2009), 'UK Air Passenger Demand and CO2 Forecasts', January, pp. 42–50; (2011), 'UK Aviation Forecasts', August, pp. 44–8.

Q: Do you agree with the government's assessment of the likely rate of growth in demand?

3. The DfT's figures show a substantial difference between constrained demand (470mppa) and unconstrained (520mppa) demand by 2050, which suggests that, without expansion, there will be a degree of unfulfilled demand. This constraint would be particularly severe in the South East, where it is predicted that, by 2030, Heathrow, Gatwick, Stansted, Luton and London City Airports will all be operating at full capacity. A new hub airport could provide a means for supplying this unmet demand.

[286] The DfT's passenger demand forecasts are calculated using two models: the National Air Passenger Demand Model and the National Air Passenger Allocation model (see Appendix A4 for details).

[287] Department for Transport (2011), 'UK Aviation Forecasts', August.

[288] The maximum use capacity scenario is used for the central estimates of constrained demand in the 2011 forecasts. In the 2007 and 2009 forecasts, the 's12s2' scenario was used for the central estimates—in which a second runway opens at Stansted in 2015 and a third runway opens at Heathrow in 2020.

Q: How many extra runways/terminals would be required at a new airport to ensure that the unconstrained levels of demand envisaged by DfT are met, including in the 'high' demand case? What would be the operational requirements, including combinations of hours of operation and mixed/single mode at future dates?

4. Table 3.1 also shows how the central estimates of future demand have changed across the past three forecasting reports published by the DfT. The table shows that central demand estimates have been revised downwards significantly since 2007. This hints at the variability in forecasting, although a large majority of the revision—particularly between 2009 and 2011—is likely to be a result of the financial crisis.

5. In general, short-term fluctuations in the macroeconomy are movements around a long-run trend and should make little difference to the overall assessment of long-term future demand. However, the outlook for the macroeconomy has changed substantially in the past few years in a way that goes beyond short-term variations. Indeed, a comparison of December 2012 forecasts with those of March 2011 shows a marked downward revision in the expected *level* of output in the medium term (with a 6% differential in 2015–16). The forecasts do not fully reconcile until around 2040.[289] In addition, according to its latest 'Economic and Fiscal Outlook', the Office for Budget Responsibility expects long-run growth to remain at 2.3%, although it did test a scenario of 1.5% (as well as revising down short- and medium-term growth).[290]

6. These more recent expectations for lower levels of output since 2011 suggest that the central case provided in the DfT's forecasts may well be considered a form of upside scenario—in particular, during the earlier years of the forecast—although the recent forecasts indicate that this effect may be reduced by the time a new airport is likely to be fully operational.

Q: To what extent would prolonged lower economic growth reduce demand forecasts, and how would this affect the business case for, and timing of, new capacity?

Q: Does the progressive reduction in the economic outlook since the DfT's 2011 aviation projections materially reduce the need for new capacity?

Abstracted demand

7. The degree of competition from other UK and European hub airports is extremely important for the viability of a new hub. The willingness of passengers and airlines to move airports is interlinked with the choice of policy for the location and design of the new airport.

8. In addition to providing services to currently constrained traffic, if all traffic that would otherwise have used Heathrow transfers to the new airport, there would be an additional 85mppa available for the new hub in 2050 (assuming 100% transfer and dependent on the demand scenario). In Oxera's analysis, scenarios where Heathrow is closed assume 100% transfer from Heathrow to the new hub, while when Heathrow remains open no transfer is assumed.

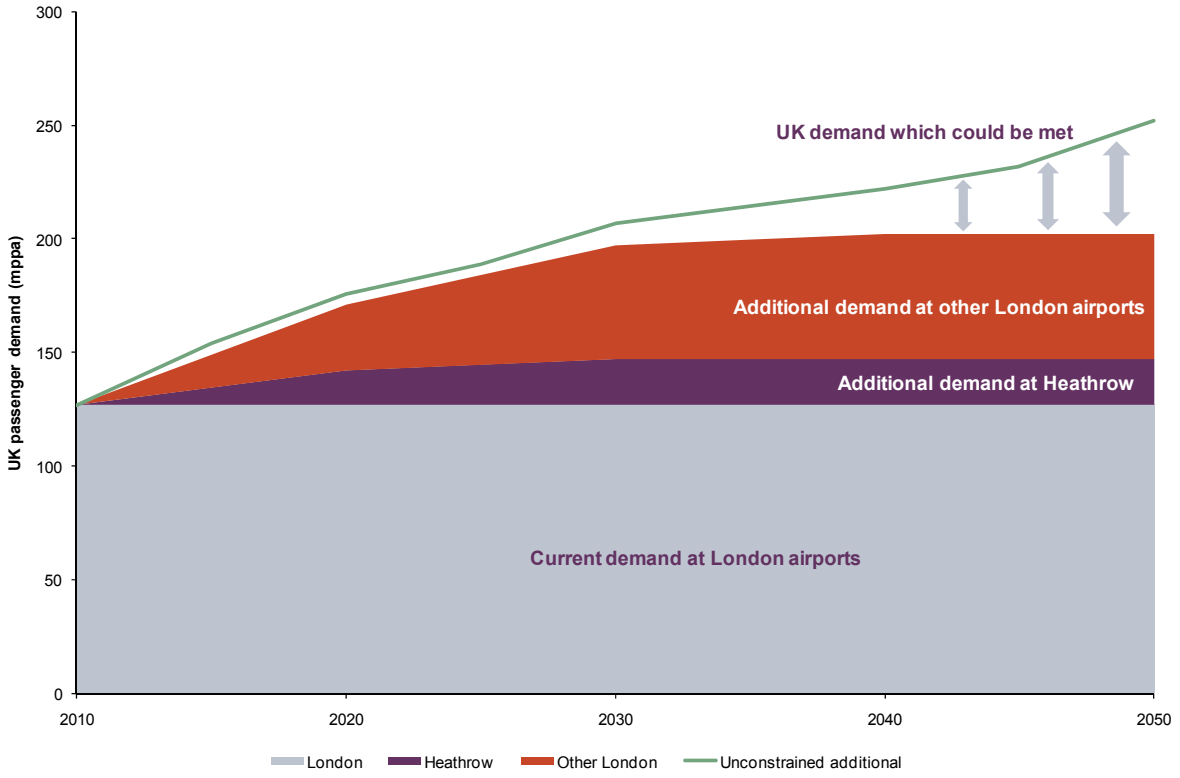
[289] This implies that for the first 15 years of operation of the airport (from 2024), the level of GDP is now expected to be below the 2011 estimate (by up to 3.5%).

[290] Office for Budget Responsibility (2012), 'Economic and Fiscal Outlook', December, para 5.40.

9. There may also be some abstraction from Gatwick and Stansted, which together are expected to serve 70mppa in 2050,[291] although full abstraction from Gatwick, Stansted and elsewhere is unlikely. Oxera's base-case scenario has been to assume that there is no abstraction from these airports, and, in a high-case scenario, that there is abstraction of traffic from full-service carriers at Gatwick (30%) and Stansted (3%) that will transfer to the new hub.[292] These assumptions should cover the full range of likely outcomes, with the outturn level of traffic transfer likely to be somewhere in between.[293]

10. The relative importance of unconstrained demand compared with existing demand at London airports is shown in Figure 3.1.

Figure 3.1 Demand at London airports



Source: Department for Transport (2011), 'UK Aviation Forecasts', August.

11. Competition with European hub airports is also relevant, but unlikely to be as critical as servicing end demand from the UK. The DfT's forecasts are primarily based on growth within the UK. Currently, transfer/transit traffic at Heathrow accounts for 35% of total demand. However, any substantial changes in the capacity that is available at Charles de Gaulle (Paris), Schiphol (Amsterdam) and Fraport (Frankfurt) are all likely to exert a degree of competitive constraint on any UK hub airport.

12. What the airport charges compared with other airports will influence the willingness of passengers and airlines (and indirectly passengers) to switch airports. If it is left to a commercial decision, this is likely to be one of the key factors. This question is returned to in section 5.

[291] See Table A4.1.

[292] See http://www.caa.co.uk/%5Cdefault.aspx?catid=78&pagetype=90&pageid=12275.

[293] Full details of the scenarios used are shown in Tables A7.1 and A7.2.

However, there is also a role for policy, since forced closure of an airport(s) would force passengers/airlines to switch.

Q: How would an enforced shift of services to a new airport affect airlines? Would it reduce their willingness to develop their networks and, if so, why?

Q: If Heathrow remained open once the new airport began operating, how much traffic would switch to it from Heathrow? Are there any estimates (or expectations) of the likely amount of demand that may move from other airports (UK and/or non-UK) to the new airport?

Q: What categories of traffic (eg, full-service, low-cost carrier, freight?) would be most likely to move out of existing airports?

Type of demand

13. An important consideration is whether there is a difference in demand for point-to-point services versus demand for hub services. The Civil Aviation Authority (CAA) distinguishes between passengers depending on whether they are:

- **point-to-point traffic**—passengers for whom the airport is either their starting or final destination;
- **connecting traffic**—'passengers whose sole business at an airport is to transfer from one flight to another, within 24 hours of arrival at the airport'.[294] In 2011 connecting traffic accounted for 34.6% of all passengers at Heathrow,[295] and 13% at Gatwick;[296]
- **transit traffic**—passengers arrive at and depart from the airport on the same flight, normally remaining on board the aircraft. Transit passengers account for around 0.5% of total UK traffic[297] and are thus not a significant driver of demand.

14. The advantage of hub services is that, where there are a significant number of connecting passengers, airlines may be able to operate routes that would not be viable on the basis of local demand alone. As such, there may be circumstances in which a new hub airport might be able to cater for demand that could not be serviced by existing UK airports since the routes would not be commercially viable at airports unable to offer hub services.

15. There is, however, evidence to suggest that point-to-point services are becoming increasingly sought after and therefore viable, such that the need for connecting passengers to make routes viable may be diminishing. This trend was noted as far back as the 2003 Aviation White Paper:

> there is evidence to suggest that a combination of liberalised air markets, changing aircraft design and growing demand will increasingly mean that airlines will want, and be able, to fly point-to-point to a greater number of destinations. Demand in the South East will be strong

[294] Civil Aviation Authority (2008), 'Connecting passengers at UK airports', November, p. 2.

[295] See http://www.heathrowairport.com/about-us/facts-and-figures.

[296] Civil Aviation Authority (2008), op. cit., Table 5.1.

[297] Civil Aviation Authority (2008), 'UK Airport Statistics, Terminal and Transit Passengers 2011', Table 9.

> enough to support more point-to-point services without the reliance on connecting traffic.[298]

16. The DfT has also noted that:

> at capacity constrained airports, increasing demand over time for travel from the local market tends to displace connecting passengers, since, in general, point to point traffic is higher yielding than connectors.[299]

Q: Why do proponents of a new hub airport believe that hub rather than point-to-point capacity is needed? What mix of traffic (ie, hub versus point-to-point) would a new airport need in order to compete successfully with Heathrow and other airports in the UK?

Location and surface access

17. Passengers' ability to access the new airport is important, and the surface transport connections are therefore likely to be critical in determining the demand for the airport.

18. A new airport in the Thames Estuary is unlikely to be as well connected by road to the UK's regions as Heathrow is, given its proximity to a number of major motorways (although it also faces congestion problems). Figure A3.2 compares drive times from Heathrow with those from a potential site at Cliffe. It demonstrates that areas such as the West Midlands are better connected by road to Heathrow than areas to the east of London. However, a new airport located in Berkshire or Oxfordshire, for example, may also be similarly well connected.

19. In terms of rail access, a new airport might be comparably well connected if dedicated rail infrastructure were constructed to service the new airport. However, it is already the case that some existing airports are likely to have their rail connectivity improved, assuming that HS2 is completed as currently planned, which would enhance connectivity at Heathrow and Birmingham Airports. Any policy analysis would need to include a comparison of the relative costs and benefits of the surface access to the various proposed sites for airport expansion.

Q: How could access to and from the new airport be ensured to enable as wide a range of the population as possible to travel to and from the airport at reasonable cost?

Q: To what extent would the precise location of the new airport in the South East affect how much traffic it attracts, and will this depend on the quality of the surface access provided?

Summary

20. This section has considered the prospects for demand growth in aviation. Although the DfT expects continued growth, recent forecasts have seen downward revisions. There is an expectation of a substantial degree of demand being constrained unless extra capacity is developed, although the degree of churn from existing airports is as important. Based on this section Oxera's modelling has used the following assumptions.

- **The base-case demand scenario** is based on the central DfT 2011 aviation forecasts. It assumes that realisation of constrained demand accrues to the new hub, as does all traffic from Heathrow, but no traffic from Gatwick or Stansted.

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[298] Department for Transport (2003), 'The future of air transport', December, p. 112, para 11.15.

[299] Civil Aviation Authority (2008), op. cit., p. 3.

- **Low- and high-demand scenarios** are tested covering the low and high scenarios from the DfT forecasts respectively. Two scenarios are also considered for the transfer of full-service traffic from Gatwick and Stansted: either that no transfer occurs, or that all full-service traffic transfers (30% and 3% of total traffic respectively).

4 The cost of a new hub

1. The likely cost of a new airport will vary depending on the precise proposal (for example, in terms of location or number of runways). A range of recent proposals has been reviewed for this report and their cost estimates are collated in Table 4.1 (adjusted for inflation where necessary).

Table 4.1 Simplified collation of cost estimates (£ billion, 2012 prices)

	Design	Construction	Surface access (new)	Surface access and infrastructure (existing)	Total
New hubs					
London Jubilee International Airport[1]	Five runways	24	22	3	**49**
Thames Hub[2]	Four runways	20	20	10	**50**
Cliffe[3]	Four runways	14.2	2.2	–	**16.4**
Thames Reach[4]	Two runways	9.5	0.3	–	**9.8**
Goodwin Sands[5]	Three runways	24.8	11.4	3	**39.2**
Indicative range					**10–50**
Expansion at existing airports					
Heathrow[6]	Third runway	–	–	–	**8–9**
Gatwick[7]	Second runway and/or third runway	2.3–7.4	–	0.1–0.4	**2.3–7.8**
Stansted[8]	Second runway	–	–	–	**4**

Note: Oxera has adjusted forecast costs to 2012 prices using the Office for National Statistics CPI.

Sources: 1 Testrad (2012), 'London Jubilee International Airport', November. 2 Foster and Partners, Halcrow and Volterra (2011), 'Thames Hub: An integrated vision for Britain', November, p. 30. 3 Helsey, M. and Codd, F. (2012), 'Aviation: proposals for an airport in the Thames Estuary, 1945-2012', House of Commons library, July 20th, p. 8. 4 Halcrow Group (2003), 'SERAS: Review of Thames Reach Airport Proposal', December, p. 7. 5 Beckett Rankine (2012), 'Cost estimate for Goodwin Airport', December, available at: http://www.goodwinairport.com/?page_id=510. 6 DfT (2007), 'UK Air Passenger Demand and CO2 Forecasts', November, Table 4.2. 7 The bottom end of the range corresponds to a second runway and the top end to a second and third runway. Department for Transport, Local Government and Regions (2003), 'SERAS Stage Two: Appraisal Findings Report', December, Table 8.2. 8 Department of Transport (2007), 'UK Air Passenger Demand and CO2 Forecasts', November, Table 4.2.

2. On the basis of the most recent estimates presented above, a new airport would probably cost in the range of £20 billion to £50 billion. In general the offshore proposals are expected to be more costly than onshore proposals. The wide range of cost estimates is also driven by the differing estimates of surface access costs. While the proposals put forward at the time of the 2003 Aviation White Paper suggested surface access costs in the region of £0.3 billion to £2.2 billion (in 2012 prices), more recent proposals have indicated costs of up to £30 billion. The construction cost per runway is broadly £5 billion.

3. Since many of the proposals outlined above are indicative only, it is unclear whether they account for 'optimism bias'—the systematic tendency for business planners to underestimate the costs that will be incurred in delivering a project.[300] The impact of such bias on cost projections is not trivial—'cost overruns in the order of 50 per cent in real terms are common for major infrastructure and overruns above 100 per cent are not uncommon.'[301] A recent example is provided by the new Berlin Brandenburg Airport, which required a capital injection of €1.2

[300] For example, Flyvbjerg (2009) found that, of a sample of 258 transport infrastructure projects, nine out of ten had cost overruns. Flyvbjerg, B. (2009), 'Survival of the unfittest: why the worst infrastructure gets built—and what we can do about it', *Oxford Review of Economic Policy*, **25**:3, pp. 344–67.

[301] Ibid., p. 346.

billion from its public owners to cover construction cost overruns (on an initial budget of around €3 billion).[302] It may therefore be appropriate to include an optimism bias adjustment in the assessment of the plausible range of costs. Based on the Treasury's Green Book guidance, such an adjustment could be in the range of 6–66%.[303]

4. Such optimism bias can also affect the timing of the opening of a new airport. Unanticipated delays relating to environmental, operational and even archaeological factors can all result in longer delivery times, which further reduce the returns on investment in today's terms. Indeed, in addition to cost overruns, Berlin Brandenburg Airport has seen its scheduled opening date slip from 2011 to 2014 following numerous delays.[304] Oxera's analysis assumes that a new UK hub airport would open and be fully functional around 2025, which, from the proposals to date, appears to be a reasonable base case, although it is likely that a staged opening would occur in practice.

5. One aspect on which many of the proposals have provided few details is compensation. If Heathrow is forced to closed, there may need to be substantial compensation to existing airport owners/users. The current value of Heathrow's regulatory asset base (RAB) is around £13 billion, and past estimates have suggested that total compensation for the closure of Heathrow could be as high as £20 billion when accounting for compensation to airlines.[305] Additional compensation may be needed if a new airport adversely affects nearby residents. This is unlikely to be the case for the Thames Estuary proposal, but this location does have the potential to incur costs related to environmental issues.

6. Operating costs at the new airport are also likely to be relevant, particularly if there is scope for efficiency gains to be realised from an improved design relative to existing airports (see Appendix 6).

Q: Offshore proposals appear to be more expensive than onshore proposals. How great are the benefits of an offshore site, and would they justify the additional cost?

Q: The range of cost estimates for a new airport is very wide. Can this be narrowed down at the moment, and what are the options for keeping costs down without impairing the service offered?

Q: What scale of compensation would be required if Heathrow were: a) restricted to certain traffic levels; b) allowed to continue operating; or c) closed down? How much would the availability of alternative uses for the site reduce this compensation?

Q: What would be the scope for greater efficiency at a new airport, and how far would this depend on its scale and design?

[302] European Commission (2012), 'State aid: Commission approves capital injection to finalise construction of Berlin Brandenburg airport', press release, December 19th.

[303] Based on the range for Non-standard Civil Engineering projects recommended in HM Treasury (2003), 'Supplementary Green Book Guidance', Table 1.

[304] Berlin Brandenburg Airport (2013), 'Re Berlin Brandenburg Airport', press release, January 7th.

[305] See Appendix 5.

Summary

7. This section has considered the likely costs of construction and operation for a new hub airport. These indicate a wide range of potential costs for both airport construction and surface access. Oxera has used the following assumptions, based on recent proposals, although Oxera has not tested the validity of these estimates:

	Base case	Low-cost case	High-cost case
Airport construction costs	(four runway hub)		(including 32% optimism bias)
New hub construction	30	10	40
Surface access	20	10	26
Total construction costs	50	20	66
Compensation (only if Heathrow closed)	20	20	20
Total actual cost	**70**	**40**	**86**

Source: Oxera analysis of cost forecasts.

In Oxera's scenario analysis, these cost estimates are used as follows.

- **The base-case cost scenario** is based on the range of costs above and assumed to be £30 billion for a new two-runway hub, £40 billion for a new three-runway hub, or £50 billion for a new four-runway hub (inclusive of surface access costs, which are £20 billion). In addition, in scenarios where Heathrow is closed, it is assumed that compensation of £20 billion is required.

- **Low- and high-cost scenarios** are tested covering, in the low-cost scenario, total construction costs of £20 billion,[306] and, in the high-cost scenario, a 32% optimism bias mark-up on the base-case costs.

[306] In practice, based on the cost forecasts provided, this scenario is likely to be consistent only with the smaller construction options, and therefore is likely to mean that both demand and airport value are also constrained.

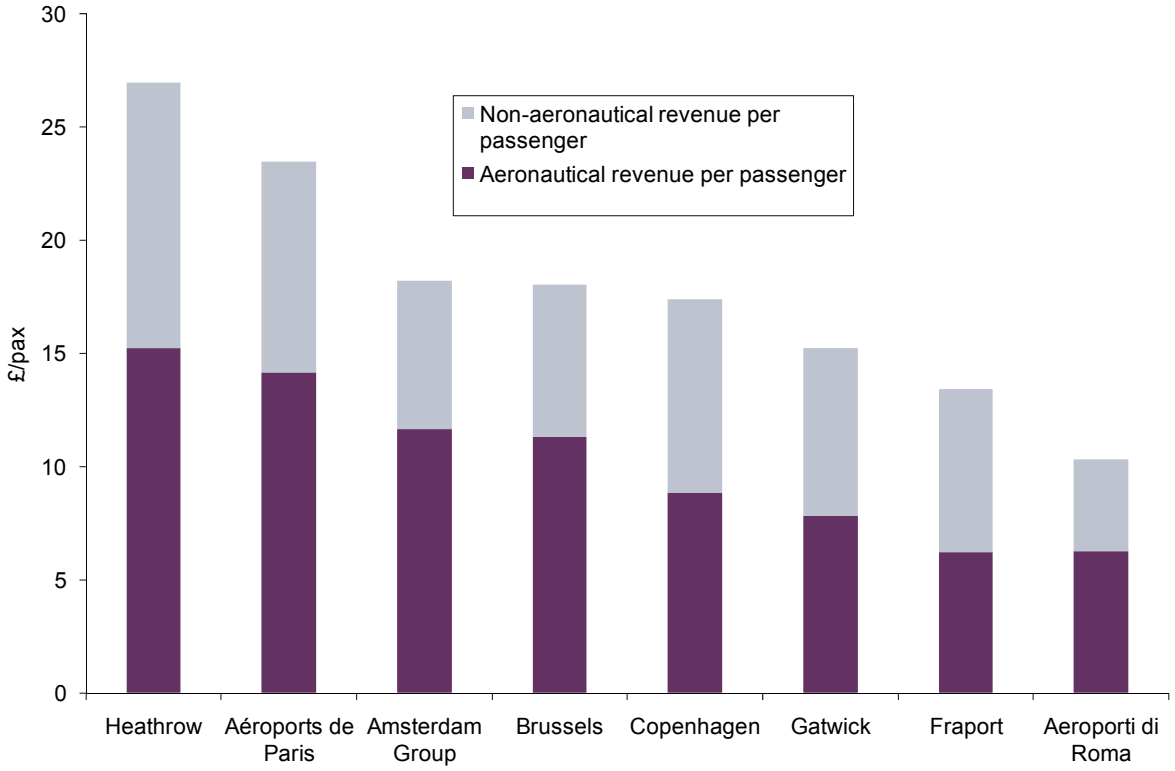
5 Implications for charges

1. Having assessed expected revenues and costs, the next step is to estimate the likely level of charges at the new airport. This is a complex process, since it interacts with the expected level of demand and will in turn determine the likely revenues that an investor may be able to recover.

Current level of charges

2. A reasonable base-case scenario may be to assume that the prevailing level of charges levied at other UK or European airports could be charged at the new airport (see Figure 5.1). These charges appear to be sustainable in the aviation market since they are currently levied and the airports in question are utilised.

Figure 5.1 Implied levels of current charges



Note: Aéroports de Paris operates Charles de Gaulle, Orly, Le Bourget and ten general aviation airfields. Amsterdam Group owns and operates Schiphol, Rotterdam and Eindhoven (small regional airports) and Lelystad (a general aviation field). Fraport is the owner and operator of Frankfurt Airport. Aeroporti di Roma manages and operates Fiumicino and Ciampino.

Source: Leigh Fisher (2012), 'Airport Performance Indicators', October.

3. However, as Heathrow is a regulated entity, it is not appropriate to interpret its charges as the maximum level that the market could bear (if they were, there would be no need for regulation). Indeed, it might be that the market could bear higher charges, but that the current levels are deemed to be sufficient to provide investors with an adequate return as determined by the CAA's regulatory reviews.

4. Charges at a new airport could therefore potentially be higher than the existing level at Heathrow, subject to constraints from other UK airports and European hubs, and a policy desire to limit the market power of the new hub and existing UK airports.

5. In addition, as is the case at many other airports, Heathrow's charges are differentiated according to the type of traffic, and therefore the charges in Figure 5.1 should be interpreted as average charges. For example, Heathrow sets different charges for departing passengers depending on whether the flight is to a European (short-haul) or non-European (long-haul) destination. Similarly, like other hub airports, it charges less for transfer/transit passengers than for originating/ terminal passengers.[307]

Interaction with demand

6. There is an interaction between the level of charges and the level of demand. If higher charges are required in order for a new airport to recover its investment, it is not sufficient simply to say that charges must rise to a particular level, since such an increase may lead to a decline in demand and hence have an offsetting effect on revenue.

7. Additionally, as noted above, proposals to increase charges will be constrained by what other airports charge. As an overall guide, should the charges be significantly different between UK and European hub airports, it is unlikely that the UK hub airport will be able to obtain the higher demand forecasts associated with significant hub expansion.

Timing of changes to charges

8. The likely timing of changes to charges would also need to be considered. Increases to charges would not need to be implemented immediately, but could be phased in over time. Furthermore, if one of the existing airports takes an ownership stake or operates the new hub, it may be possible that charges could be levied on its existing passengers ahead of completion of the new airport (see Appendix A10). Even if not under common ownership, there might be an option where the government could allow higher charges for other airports and require some of this to be paid to a new airport. It should be noted, however, that this would represent a return to the cross-subsidy principle under which Stansted was built, and which was opposed at the time by airlines and subsequently rejected by the CAA in both the Q4 and Q5 regulatory reviews.[308]

Q: Do you accept the principle that the development of a new airport to replace Heathrow could, or should, be funded in part by higher charges now for users of Heathrow and other airports? Which categories of cost should they be required to cover?

Non-aeronautical revenues

9. It is also important to consider commercial (non-aeronautical) revenues, which could be substantial and would reduce the level of aeronautical charges necessary to make the airport profitable. For example, in 2010, non-aeronautical revenues at Heathrow were £11.56 per passenger.[309] Heathrow has a 'single-till' arrangement, under which non-aeronautical activities can effectively cross-subsidise aeronautical activities.[310]

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[307] Civil Aviation Authority (2012), 'Heathrow: Market Power Assessment', The CAA's Initial Views, February.

[308] Civil Aviation Authority (2003), 'Economic regulation of BAA London Airports (Heathrow, Gatwick, Stansted), 2003-2008', February; Civil Aviation Authority (2006), 'Airports price control review – Initial proposals for Heathrow, Gatwick and Stansted', December.

[309] Leigh Fisher (2012), 'Airport Performance Indicators', October.

[310] Some airports operate under dual- or hybrid-till arrangements, whereby the non-aeronautical revenue does not subsidise, or partially subsidises, the aeronautical activities.

Regulatory regime

10. As noted above, the main London airports are currently subject to economic regulation by the CAA. Under the terms set out in the Civil Aviation Act 2012, a new hub airport would be 'designated', and required to hold a regulatory licence, if it were determined that regulation was both necessary and beneficial. To ascertain whether this were the case, the CAA would be required to assess market power using three criteria, with regulation being introduced only if:

- the airport has, or is likely to acquire, significant market power (SMP) in a market ('test A');
- competition law does not provide sufficient protection against abuse of that SMP ('test B');
- regulation by means of a licence will provide benefits that outweigh any adverse effects ('test C').[311]

11. There is, however, some scope for changes to the current regulatory regime at existing airports to help improve the viability of a new airport. This is so in the case of pre-funding (see Appendix A10). Also, if the existing airports remain open, the addition of a hub airport could increase the degree of competition between the UK airports and could therefore indicate that no regulation, or a change of regulation, would be appropriate (at least for some of the airports).[312]

12. If the new hub airport were regulated, it would be appropriate to consider how the regulatory regime would need to evolve to reflect the following:

- the greater risk from a new investment and the need to ensure that investors have the incentive to invest. A new airport would inherently carry greater risk than other airports until the demand emerged to cover the costs, and this would need to be reflected in the allowed return for investors, and might require some pre-commitment from the regulator;
- how commercial revenues (eg, retail) can be used to support the economic viability of the new airport;
- how the new airport would affect the regulation of existing airports;
- the potential for charges to rise above the levels currently observed at Heathrow and other airports in the South East, potentially to cover the costs of rising demand rather than to reflect an improvement in service.

Q: Heathrow levies higher charges than competitor airports, while still attracting high levels of demand. What factors lie behind this, and could these be replicated at a new airport, permitting charges as high, or even higher, than at Heathrow?

[311] HM Government (2012), 'Civil Aviation Act: Part 1—Airports'.

[312] Oxera notes that the CAA is currently reviewing the appropriate form of regulation at Stansted, Gatwick and Heathrow for the next control period, known as Q6, which starts in 2014. The CAA has indicated that it is 'minded to find…that the market power test as set out in the CA Act is met in relation to Stansted airport'. CAA (2012), 'Consultation on Stansted market power assessment', December, p. 2.

Summary

13. This section has considered the likely charges that would be levied at a new hub airport. The estimates used by Oxera are based on the prevailing level of charges at existing London airports.

- **The base-case cost scenario** is based on the current level of aeronautical and non-aeronautical charges at Heathrow.
- The **low-charges scenario** is based on the current level of charges at Gatwick and the **high-charges scenario** on the charges at Heathrow plus a 50% mark-up.

6 Is public funding likely to be required?

1. The above assessment of revenues, costs and charges (in sections 4 and 5) is sufficient to give an indication of the commercial returns that may be available from the project.

2. The assessment of costs and returns that follows takes account of both their magnitude and their time profile. The analysis below considers the net present value (NPV) of the projected revenues and costs of the airport. The NPV represents the amount at which a commercial investor would value the potential investment in the airport today.

3. This calculation would be based on the assumptions in the previous sections and is calculated as follows for an indicative scenario of a four-runway hub costing £50 billion, with Heathrow closed, assuming that 30% of Gatwick and 3% of Stansted traffic transfer to the new hub, and assuming charges and operating costs equivalent to Heathrow's current level.

- The **value of the new airport** is calculated by estimating the revenues from forecast passengers (as outlined in section 3 above), assuming that each pays the forecast charges (consistent with section 5) net of operating costs (consistent with section 4). These are then calculated in today's money using a 'discount factor' that reflects the time value of money between now and the period over which the airport is operating (ie, between now and the assumed opening date of 2025).[313] This results in **a value of £15.6 billion**.

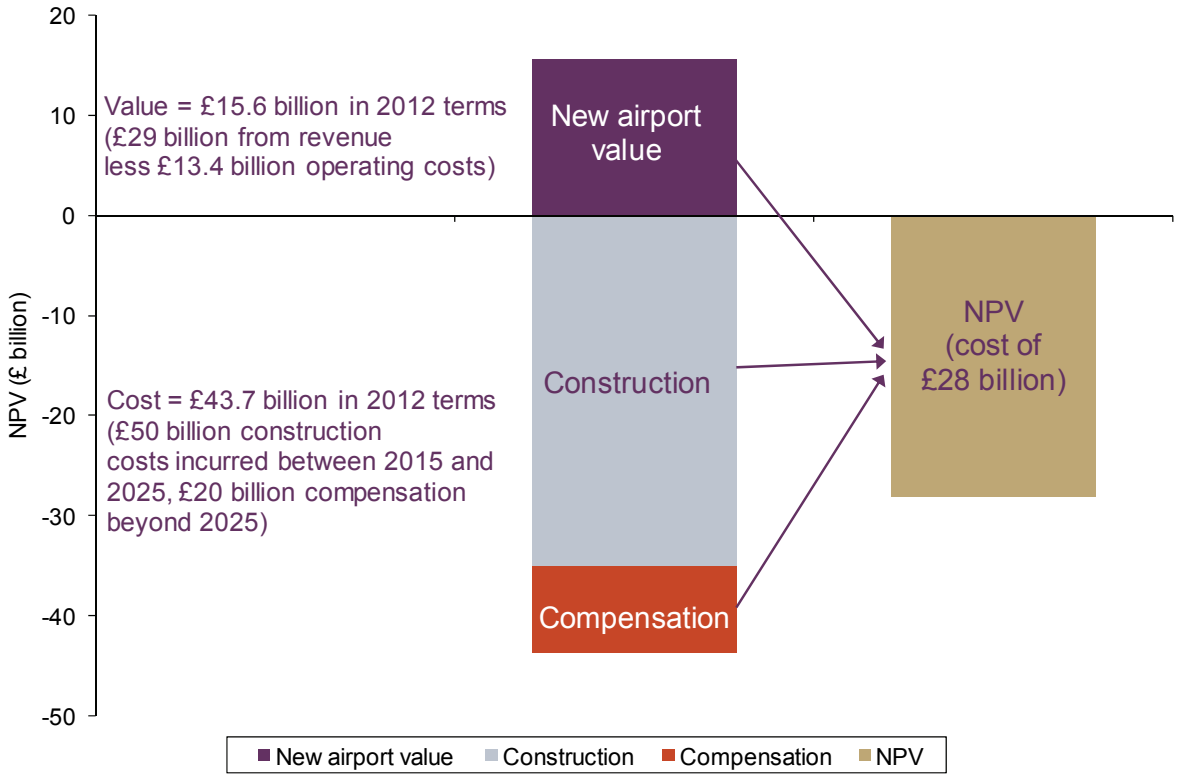
- The **cost of the new airport** is then calculated on a comparable basis by taking the cost estimates for a four-runway hub from section 4 above of £70 billion (including compensation). This is then calculated in today's money using a discount factor, assuming an investment programme over ten years to 2025 and compensation after the new airport becomes operational. This results in a **cost of £43.7 billion**.

- The **value of the investment** or NPV is then calculated by subtracting the costs from the airport value. Given that the costs are significantly higher than the value, the net value of the investment is significantly negative, implying that a commercial investor would not undertake the investment.

[313] This is a commercial assessment based on an assumed discount rate of 9% applied to pre-tax cash flows. It is assumed that tax can be ignored, as the very significant investment costs mean that no tax is likely to be paid until late in the project's life, if at all. If HM Treasury's recommended social discount rate of 3.5% is used then many of the scenarios are found to have positive NPV. Furthermore, if a full social assessment is conducted, the addition of wider economic benefits and other factors will also affect the calculated NPV.

4. Table A2.1 in Appendix 2 shows the expected NPV of a new hub airport under various scenarios. It can be seen that in the majority of cases a substantial degree of public subsidy would be required. The NPV of the indicative scenario is disaggregated in Figure 6.1.

Figure 6.1 Investment valuation within the illustrative scenario



Note: This assumes a four-runway hub, with Heathrow closed, corresponding to Scenario 6 detailed in Table A7.1, also assuming that 30% of Gatwick and 3% of Stansted traffic transfer to the new hub. Airport value includes the 'terminal value', the value in today's money of the assumed value of the airport at the end of the modelling period (2060). Due to the time value of money, the current value of this is low (£2.2 billion).

Source: Oxera.

Q: Do policy-makers accept that some public subsidy is likely to be required for this project? If so, how much subsidy would be justified given the wider economic and social benefits involved?

Understanding the likely need for public support

5. The intuition behind the likely need for subsidy can be explained in a number of ways.

6. First, consider the current value of airport assets. Heathrow is today worth about £13 billion.[314] The proposal is to create a new airport which can, in 20–30 years' time, expect to carry more passengers than Heathrow. The new airport would potentially be able to serve at least double the traffic that Heathrow can carry. If demand were to reach the upside estimate, this could grow three to four times in 40–50 years, and a new airport could therefore be worth significantly more than Heathrow.

[314] Based on enterprise value (debt + equity), using the RAB value as the basis for the value.

7. Figure 6.2 below illustrates this effect for Oxera's indicative scenario. The new airport would have higher value, once opened, than the value that Heathrow would be likely to have in 2025, largely due to higher capacity, although Oxera's model also assumes that a new airport would require no further investment beyond the £70 billion construction cost, whereas Heathrow's current value will reflect the need for further future investment. However, this benefit is broadly offset by the fact that the new airport will not generate any revenues until it opens in 13 years' time.

Figure 6.2 Potential value of new hub relative to Heathrow

Note: The value of discounting represents the economic approach of placing less weight on future costs and benefits than current costs and benefits. It is unrelated to discounting in the context of offering lower prices.

Source: Oxera.

8. In summary, the value (on a valuation basis comparable to Heathrow today) of a new airport when it is launched would be around £20 billion–£30 billion in the base case. If demand turns out on the upside, it may be worth more, at around £30 billion–£40 billion. All of these estimates are higher than the current value of Heathrow (approximately £13 billion), due largely to the effect of greater passenger numbers.[315]

9. However, to put this valuation into context, it should be compared with the estimates of investment costs. Section 4 indicated that total costs (including surface access and compensation) for a four-runway hub could be around £70 billion, of which the construction cost of £50 billion has to be invested before the opening of the airport. Therefore, the costs are much higher than the value of the airport once built. The scenario analysis in Appendix 2 shows that even in Oxera's upside scenarios, the value of the airport is always less than the cost, and it is clear from

[315] However, all valuations also include a premium which will take account of the impact of lower investment costs over time.

Figure 6.1 above that it would take a very significant deviation from the assumptions in the indicative scenario for the value to exceed the cost.

10. From a financial market investor's perspective, in order to be commercially viable, the new airport would need to have a commercial value today equal to the investment cost at around £50 billion in 2012 prices (even excluding compensation). If this is compared with BAA's London airport revenue (Heathrow and Stansted) in 2011 of £1.7 billion, or total revenue of £2.2 billion (including other revenue, such as Heathrow Express revenue), it is equivalent to a revenue multiple of around 23–30x. This would significantly exceed any comparable airport multiples for existing operators.

11. It therefore appears that:

- the combined investment in a new airport plus associated infrastructure is unlikely to be a commercial investment—ie, the total cost of building the airport will exceed the value of the airport that exists at the end of the build phase;
- it might be possible to finance the investment in the new airport infrastructure of around £20 billion alone, but only through injection of substantial levels of public subsidy and investment for the surface access and compensation, which would comprise around 60–75% of the total investment cost;
- even in this case, the airport investment would be a risky investment, which would rely on the realisation of either significant volume growth or higher charges, and would therefore be likely to require government support to encourage investor participation.

12. This could be justified if the government concludes that the wider social and economic benefits of the airport outweigh the public investment costs. As discussed above, the government will generally give more weight to longer-term benefits when evaluating the public policy benefits of an investment. This is done within a cost–benefit analysis (CBA) by using a lower discount rate of 3.5%,[316] rather than a commercial rate of return as would be required by a commercial investor. It would also permit the inclusion of wider social and economic benefits created by the infrastructure investment, net of the associated social and environmental costs. If such benefits in net terms could be equal to around £8 billion per annum (using the base-case assumptions in this report), this would offset the investment cost in commercial terms. If the social discount rate of 3.5% were used, the wider benefits required would be significantly lower.

Q: Would the new airport bring wider economic and social benefits that might justify any government subsidy required?

Would funding by government subsidy be compatible with EU state aid law?

13. If the government did wish to subsidise the airport, it would be necessary to ensure that any subsidy granted were compatible with EU state aid law.

14. The EU Court of Justice has recently issued a judgment confirming that the construction of airport infrastructure can be treated as an economic activity that falls within the definition of

[316] HM Treasury (2011), 'The Green Book, Appraisal and Evaluation in Central Government', July, Annex 6.

state aid.[317] Central or local government funding support for the new hub airport may therefore need to be notified to the European Commission under state aid rules, and made the subject of a state aid approval process. This would involve determining whether the aid was compatible with the Treaty on the Function of the European Union, and if it was not, the aid could be blocked.

Q: Has the compatibility of any government support with EU state aid law been considered?

Types of subsidy

15. While direct subsidy is the most obvious form of public support that could be provided to the new airport, a number of other options could enhance viability. For example, explicit government guarantees might enhance the viability of a project by reducing the commercial risk of the project, and hence financing costs.

16. An alternative form of subsidy without direct reliance on public funds would be to impose some form of levy on interested parties (see the Crossrail example given in Appendix 9).

Summary

17. This section has considered the commercial position of the proposals for a new hub airport, and therefore whether public subsidy is likely to be needed. Based on Oxera's modelling, the conclusion is as follows:

- **the new airport would potentially be valued at around £20–£30 billion at current prices**, depending on the ability to benefit from higher passenger numbers from Heathrow, or higher, if either demand is higher than the DfT's base case and/or charges can be increased without losing customers to other airports (albeit this latter effect could also be achieved at Heathrow);
- **public subsidy will be required** at a minimum for the surface access and any compensation costs, given that this value is significantly below the £50–£70 billion estimated for the combined costs of a new airport;
- **the airport as a stand-alone project could repay the investment**, but given the risks around demand forecasts and in respect of cost and time to complete, it would still represent a risky investment project.

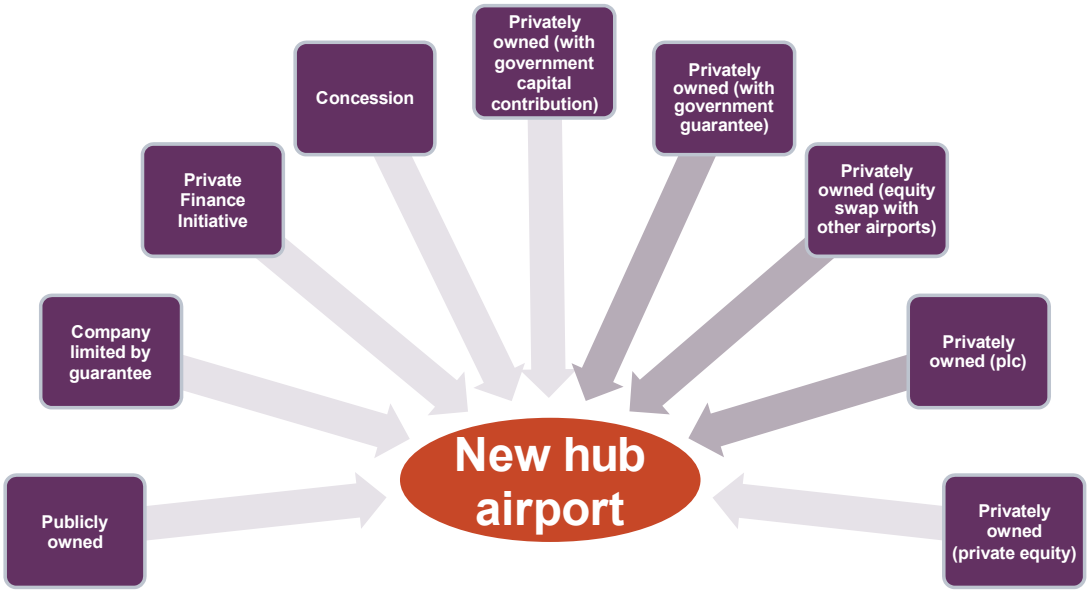
[317] European Court of Justice (2012), 'Judgment of the Court (Eighth Chamber), Flughafen Leipzig-Halle GmbH vs European Commission', Case C288/11P, December.

7 Is it financeable?

1. Based on the above assessment of the funds likely to be required from the private and public sectors, the next question is whether, and how, adequate financing can be provided for the new airport in line with required timescales and risks.

2. In the context of the conclusions in section 6 above, Oxera has considered a range of funding sources used in comparable infrastructure projects, as shown in the figure below.

Figure 7.1 Options for investment and ownership of a new hub airport



Options span from full public ownership to more limited forms of government intervention with greater, and different types/timing of, private involvement.

Source: Oxera.

3. The analysis indicates that the most likely outcomes are as follows.

- **Public ownership**. Many European airports are publicly owned, and this is a legitimate option for the government, at least during the early stages of the project. The government could then seek to dispose of some or all of its investment as the project proceeds, or once the new airport is open.

- **Private Finance Initiative (PFI) (or private–public partnership, PPP)**—this is the most common source within the UK for significant infrastructure projects that are not commercially viable on a stand-alone basis. PFI is generally used for projects where there is less of a natural commercial incentive and/or equity upside, and is focused on efficient management of costs, such as in the construction of public service infrastructure. It would therefore be potentially more compatible with the funding of surface access than of the airport itself. Appendix 9 gives some relevant examples.

- **Privately owned (with government support)**. There are a number of potential structures where the government could jointly invest in the airport project with a private investor. This could be done through the government either taking an equity stake, to reduce the risk and

provide a source of additional finance for a new investor, or providing a guarantee and/or direct debt investment.

- **Privately owned (including equity swaps with other airports)**. Given the potential for very significant compensation to other airports, including Heathrow, an option for the government would be to seek to obtain equity investment in the new airport from existing airports, subject to wider considerations around competition and the timing and nature of compensation against investment costs.

Q: Which parts of the investment cost would be potentially more suitable for public (or PFI-type) funding?

A1 Remit

1. Following a competitive tender process, Oxera was commissioned to brief the Committee through this report. The scope of the analysis presented here focuses on one specific aspect of aviation policy. It is important that this analysis of a new hub is not considered on a stand-alone basis, but rather in the context of wider UK aviation policy, in line with the Committee's inquiry.

Wider policy context

2. The possibility of building a new hub airport is just one option in the context of wider UK aviation policy. Most forecasts suggest that airports in the South East of England will be at full capacity within the foreseeable future, if not already. Hence, from an economic perspective, there appears to be a case to expand capacity to alleviate capacity constraints. However, using a new hub airport to expand capacity is just one option. There has also been a long history of proposals for expansion at existing airports, covering ideas such as a third runway at Heathrow, a second runway at Gatwick or Stansted, or greater integration between airports (the 'Heathwick' proposal).

Commercial assessment versus economic assessment

3. Oxera has been asked specifically to assess the commercial viability rather than provide a full social CBA. This means that the review has considered purely whether commercial owners of a new airport would be able to make adequate returns to obtain finance.

4. A full social CBA would also assess the wider economic impacts and environmental effects. Potentially, such an assessment could provide very different results to the commercial case due to the scope for substantial impacts generated by aviation on third parties. There are a number of well-established mechanisms through which aviation contributes to the wider economy.[318]

Concept versus specific proposals

5. Although this report makes reference to a number of specific proposals, it has focused on the overall rationale for the concept of a new hub. While this helps to abstract from proposal-specific issues, it has meant that estimates of revenues and costs have had to be calibrated using broad conceptual numbers, rather than proposal-specific estimates.

[318] See Oxera (2009), 'What is the contribution of aviation to the UK economy?, November, prepared for Airport Operators Association.

A2 Assessment of scenarios

1. The assessment of the viability of the hub airport is subject to a number of uncertainties. Oxera has sought to address these through a non-exhaustive set of scenarios, presented in Table A2.1 below, all of which assume that there is no public funding. Given the outcomes of these scenarios Tables A2.2–A2.5 assess an alternative set of scenarios that assume a degree of public funding. There are myriad different scenarios that could be tested, many of which will depend on the specifics of any individual scheme. It is therefore relevant to highlight the key assumptions that should be considered as influencing the outcome of the assessment, as follows.

Demand

- long-term economic growth prospects (which are likely to differ from those underpinning DfT 2011 projections);
- churn from competing airports and previously unsatisfied demand, and the relationship with the destinations/connections offered;
- charges;
- the response of passenger demand to different charging levels, including churn;
- oil prices; and
- aviation taxes.

Supply

- the number of runways/terminals at the new airport; and new runways/terminals at competing airports in UK and EU;
- whether Heathrow will close;
- whether Heathrow (or other UK airports) will form part of a consortium investing in new airport;
- the response of airlines to differential charge rates between airports, including migration to new airport, fare-setting, and the destinations/connections offered.

Charges

- whether and how far Heathrow (or other UK airports) will raise charges during the construction period in order to fund the new airport;
- till arrangements;[319]
- the level and nature of public funding, if any;

[319] This refers to the treatment of non-aeronautical revenues in the setting of charges. Under a single-till regime, non-aeronautical revenues are used to offset aeronautical charges; whereas, under a dual-till regime, aeronautical charges are set solely with reference to the costs of providing aeronautical services and take no account of non-aeronautical costs and revenues.

- regulatory restrictions—judgement on the extent of competition, and possible fare caps;
- implications for required private returns of different risk levels associated with different supply and funding scenarios.

2. A selection of these key assumptions have been modelled; the results are presented in Tables A2.1–A2.5 below.

Table A2.1 How much subsidy is required?

	Design	Impact on Heathrow	Base case[1]	Demand different from DfT forecasts[2]		Different transfer from other London airports[3]		Difference in charges[4]		Differences in construction costs[5]	
				Low	High	Low	High	Low	High	Low	High
Policy scenarios	Two-runway new hub[6]	Heathrow open	–18.1	–19.6	–11.4	—	–16.4	–19.7	–16.4	–11.1	–24.8
	Three-runway new hub[7]	Pre-financing from Heathrow	–14.1	–15.6	–7.4	–25.1	–12.4	–21.9	–6.1	–0.1	–32.3
	Three-runway new hub[8]	Heathrow closed	–22.7	–24.2	–16.0	–33.7	–21.0	–30.5	–14.7	–8.6	–40.9
	Three-runway new hub[9]	Heathrow closed Surface access publicly funded	–8.6	–10.2	–2.0	–19.6	–7.0	–16.5	–0.7	–8.6	–13.1
	Four-runway new hub[10]	Heathrow open	–32.1	–33.7	–25.4	—	–30.4	–33.8	–30.4	–11.1	–43.3
	Four-runway new hub[10]	Heathrow closed	–29.7	–31.2	–23.0	–40.7	–28.0	–37.5	–21.7	–8.6	–40.9
	Four-runway new hub[10]	Heathrow closed Surface access publicly funded	–15.6	–17.2	–9.0	–26.7	–14.0	–23.5	–7.7	–8.6	–22.4
	Phased-in two-runway new hub[11]	Heathrow closed	–14.0	–15.5	–7.8	—	–13.0	–15.4	–12.6	–8.5	–19.3

Note: For full details of assumptions, see Appendix 8. [1] Based on the DfT's 2011 aviation forecasts, assuming transfer of all traffic from Heathrow and full-service traffic from other non-London airports. [2] Oxera has adjusted the DfT's forecasts to account for possible lower long-term economic growth.[3] Unlimited transfer from London airports to the new hub up to the capacity constraint of the hub. [4] Passenger demand is less sensitive to changes in price. [5] Higher cost of construction. [6] New hub opens in competition with Heathrow. Surface access costs are paid for by the airport. Single-till regime.[7] New hub opens, having been pre-financed by charges at Heathrow. [8] Three-runway hub opens and Heathrow is shut in a single step. [9] Surface access costs are covered by public funding. [10] Larger new hub. [11] Slower phasing in of the new hub, one runway at a time. Short-term capacity constraints are alleviated by temporary mixed-mode flying.

Source: Oxera.

Table A2.2 Three-runway hub (traffic light system)

		Base case[1]	Demand forecast variations[2]		Construction cost variations[3]	
			Low	High	Low	High
Three runway hub Heathrow closed	No public funding	●	●	●	●	●
	Surface access publicly funded	●	●	●	●	●
	Compensation publicly funded	●	●	●	●	●
	Surface access and compensation publicly funded	●	●	●	●	●

Key: Viability is defined on a commercial basis—ie, incorporating only the expected cash flows of a private airport.

● **Likely to be viable (positive NPV at a commercial discount rate of 9%)**
● **Marginal viability (NPV above –£5 billion)**
● **Unlikely to be viable (NPV less than –£5 billion)**

Note: For a full table with quantified estimates, see Table A2.3. [1] The base case incorporates the following assumptions. Demand will be in line with the central case from the DfT's 2011 aviation forecasts. Demand at the new hub will be equivalent to the transfer of all traffic from Heathrow and all additional traffic that is currently unmet. Construction costs will be £40 billion, inclusive of £20 billion of surface access costs. The new owner will be liable for £20 billion of compensation to Heathrow and all entities disrupted by the construction of the new hub [2] These scenarios use the low and high versions of the DfT's aviation traffic forecasts respectively. [3] These scenarios vary in their construction costs. The low scenario assumes a construction cost of £20 billion for the new airport inclusive of £10 billion of surface transport costs. The high case adds a 32% optimism bias to a construction cost of £40 billion.

Source: Oxera.

Table A2.3 Three-runway hub (base table)

		Base case	Demand different from DfT forecasts		Differences in construction costs	
			Low	High	Low	High
Three-runway hub Heathrow closed	No public funding	–22.7	–24.2	–16.0	–8.6	–31.6
	Surface access publicly funded	–8.6	–10.2	–2.0	–1.6	–13.1
	Compensation publicly funded	–15.6	–7.4	–14.1	–0.1	–23.1
	Surface access and compensation publicly funded	–0.1	–1.6	6.6	7.0	–4.5

Note: See Table A2.2.

Source: Oxera.

Table A2.4 Four-runway hub (traffic light system)

		Base case[1]	Demand forecast variations[2]		Construction cost variations[3]	
			Low	High	Low	High
Four-runway hub Heathrow closed	No public funding	●	●	●	●	●
	Surface access publicly funded	●	●	●	●	●
	Compensation publicly funded	●	●	●	●	●
	Surface access and compensation publicly funded	●	●	●	●	●

Key: Viability is defined on a commercial basis—ie, incorporating only the expected cash flows of a private airport.

● **Likely to be viable (positive NPV at a commercial discount rate of 9%)**
● **Marginal viability (NPV above –£5 billion)**
● **Unlikely to be viable (NPV less than –£5 billion)**

Note: for a full table with quantified estimates, see Table A2.5. [1] The base case incorporates the following assumptions. Demand will be in line with the central case from the DfT's 2011 aviation forecasts. Demand at the new hub will be equivalent to the transfer of all traffic from Heathrow and all additional traffic that is currently unmet. Construction costs will be £50 billion, inclusive of £20 billion of surface access costs. The new owner will be liable for £20 billion of compensation to Heathrow and all entities disrupted by the construction of the new hub [2] These scenarios use the low and high versions of the DfT's aviation traffic forecasts respectively. [3] These scenarios vary in their construction costs. The low scenario assumes a construction cost of £20 billion for the new airport inclusive of £10 billion of surface transport costs. The high case adds a 32% optimism bias to a construction cost of £50 billion.

Source: Oxera.

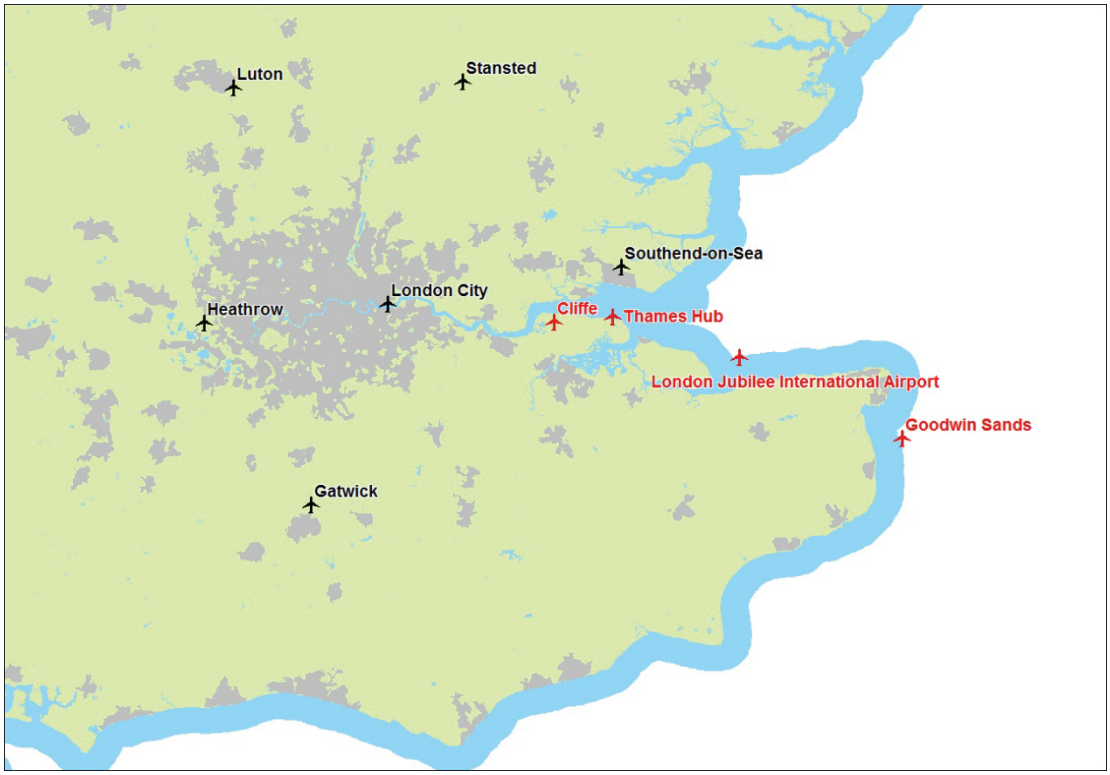
Table A2.5 Four-runway hub (base table)

		Base case[1]	Demand different from DfT forecasts[2]		Differences in construction costs[5]	
			Low	High	Low	High
Four-runway hub Heathrow closed	No public funding	–29.7	–31.2	–23.0	–15.6	–40.9
	Surface access publicly funded	–15.6	–17.2	–9.0	–8.6	–22.4
	Compensation publicly funded	–22.6	–14.4	–21.1	–7.1	–32.3
	Surface access and compensation publicly funded	–7.1	–8.6	–0.4	–0.1	–13.8

Note: See Table A2.4.
Source: Oxera.

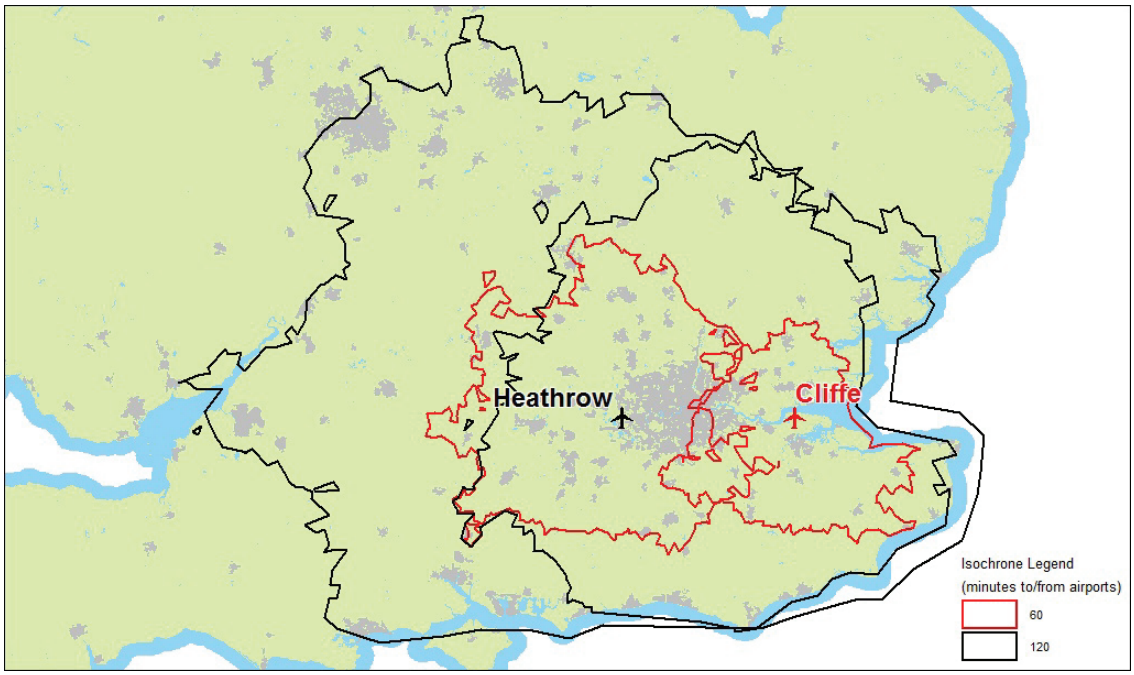
A3 Location of existing proposals

Figure A3.1 Location of existing airports and selected proposals for a new hub



Source: Oxera.

Figure A3.2 Drive times from Heathrow and Cliffe



Source: Oxera.

1. Figure A3.1 above shows the location of the existing main South East international airports and of some of the proposals.

2. Figure A3.2 gives an illustration of the accessibility to Heathrow and one of the proposals—Cliffe—based on 60- and 120-minute drive times. This demonstrates that all of Greater London and the majority of the South East are within two hours' drive time of both Heathrow and Cliffe. In addition, the West Midlands, Bristol and Bournemouth are within two hours' drive of Heathrow.

3. Access to airports by road is only one of the surface access options. Most of the proposals for a new hub airport involve a rail link, either surface or underground, or both. The performance of such access may depend on ongoing projects, such as HS2 and Crossrail, which will also influence access to Heathrow.

4. Indeed, for a number of the proposals for sites in the Thames Estuary, the designs involve a landside terminal, in which case the access time to the terminal will be an under-representation of the full travel time, since there will be additional time between the terminal building and boarding the aircraft.

A4 Construction of demand forecasts

1. The DfT's terminal passenger demand forecasts are constructed using two models: the National Air Passenger Demand Model and the National Air Passenger Allocation Model. These models, and how they work, are summarised below.

The National Air Passenger Model

2. Used to forecast passenger demand assuming no future capacity constraints, the National Air Passenger Demand Model combines:

- analysis of the sensitivity of air passenger demand to changes in income and prices—how has demand for air transport changed historically in response to GDP growth and changes in air fares?
- assumptions around how the sensitivity of air passenger to changes in income and air fares will evolve as the market matures;
- projections of these demand drivers—how are GDP and air fares expected to change in the future?

3. The GDP forecasts used in the DfT's modelling reflect the Office for Budget Responsibility's March 2011 projections and the International Monetary Fund (IMF) World Economic Outlook 2010. The central estimates of the Office for Budget Responsibility at that time assumed a trend growth rate of 2.35% per year to the end of 2013, and 2.10% thereafter.[320] Air fares are assumed to move in line with airline costs—split into fuel costs and non-fuel costs (eg, taxation, Air Passenger Duty, the EU Emissions Trading Scheme, etc).

The National Air Passenger Air Allocation Model

4. Used to allocate demand between airports, and thus to determine the extent of unmet demand, the National Air Passenger Allocation Model splits the UK into 455 zones and assumes that passenger demand at each of the airports depends on factors including:

- the time and expense of accessing the airport;
- passengers' value of time;
- passengers' preference for particular airports;
- flight duration and the frequency of service.

5. Projections are made for unconstrained passenger demand growth in each zone, and the model calculates how much of the forecast demand to/from each zone will travel via each airport. If passenger demand exceeds a particular airport's (runway or terminal) capacity, a 'shadow cost' is calculated that estimates the extra cost of using the airport that would be needed to meet all the demand. This shadow cost is then added to the cost of using each

[320] Office for Budget Responsibility (2011), 'Economic and fiscal outlook', March.

airport where capacity constraints are expected, before the model is re-run until an equilibrium is found in which capacity is not exceeded at any airport.

6. Table A4.1 below shows passenger forecasts at the South East airports, and for the UK as a whole, based on the passenger allocation model.

Table A4.1 UK terminal passenger forecasts (constrained maximum use'), South East airports (central forecast) (mppa)

Forecast year	**2010**	**2020**	**2030**	**2040**	**2050**
Heathrow	65	80	85	85	85
Gatwick	30	35	40	40	40
Stansted	20	25	35	35	30
Luton	9	12	15	15	15
London City	3	7	7	7	7
Total: London	**125**	**155**	**180**	**185**	**185**
Others	80	115	150	210	285
Total	**210**	**270**	**335**	**405**	**470**

Note: Numbers may not sum to totals due to rounding.

Source: Department for Transport (2011), 'UK Aviation Forecasts', August, Table 2.15.

A5 Compensation costs

Compensation for home owners and businesses

1. Those living near to the site chosen for a new hub airport are likely to be entitled to compensation. As noted in the recent consultation on the HS2 first-phase compensation scheme, under the statutory system of compensation, homeowners would expect to be compensated for:

- the unblighted open-market value of the property (ie, the value of the property if no project were going ahead);
- a home loss payment of 10% of the value of the property (up to a current maximum of £47,000);
- reasonable moving expenses.[321]

2. These compensation costs would be likely to be lower if a new airport were to be built in a relatively remote location, such as the Thames Estuary or Cliffe.

3. However, if the compensation scheme went beyond the minimum statutory requirements, as that proposed for HS2 does, these costs could be even greater.

Compensation for existing airports

4. To assess the scenario in which Heathrow is forced to close (or loses substantial business), it would also be necessary to consider the additional costs that would be incurred to compensate some of Heathrow's stakeholders (and potentially Gatwick and Stansted). Furthermore, property and land prices could fall more generally in West London, although it is unclear whether there would be any accompanying compensation for this. In terms of the direct impact at Heathrow, the report would consider the effect on the following categories of stakeholders.

- **Equity investors**. Investors with an equity stake in Heathrow Airport Holdings (formerly BAA), including Ferrovial, would look to recover their investment in the company, which would likely be approximated by the equity value of the RAB. The total RAB value, including both debt and equity, was £12.7 billion at March 31st 2012.[322]
- **Bondholders**. A proportion of the RAB reflects debt financed through the issuing of bonds. Should the bonds default as a result of closure then bondholders would need to be compensated for the closure in line with this value.
- **Airlines**. Airlines that have made sunk investments at Heathrow, such as British Airways, would need to be compensated for these investments.

[321] Department for Transport (2012), 'High Speed Two: Property and Compensation for London–West Midlands', October.

[322] BAA (2012), 'Heathrow Airport Limited Regulatory Accounts–Year ended 31 March 2012', April.

- **Air traffic control**. If a new hub were built in a different location to existing airports, flights using the airport would be likely to pass through different air space sectors and, hence, require air traffic control to cater for this.

5. Estimates of the cost of compensation for the closure of Heathrow have suggested that it could be in the region of £20 billion.[323] This would need to be offset to the extent that the value of Heathrow is sustained under an alternative use, since it is likely that the government could redevelop the Heathrow site for other purposes if it were to purchase the site from equity investors.[324] In practice, a key requirement in West London would be to create sufficient jobs to mitigate the loss of employment at airport and the resulting reduction in demand for the existing housing stock.

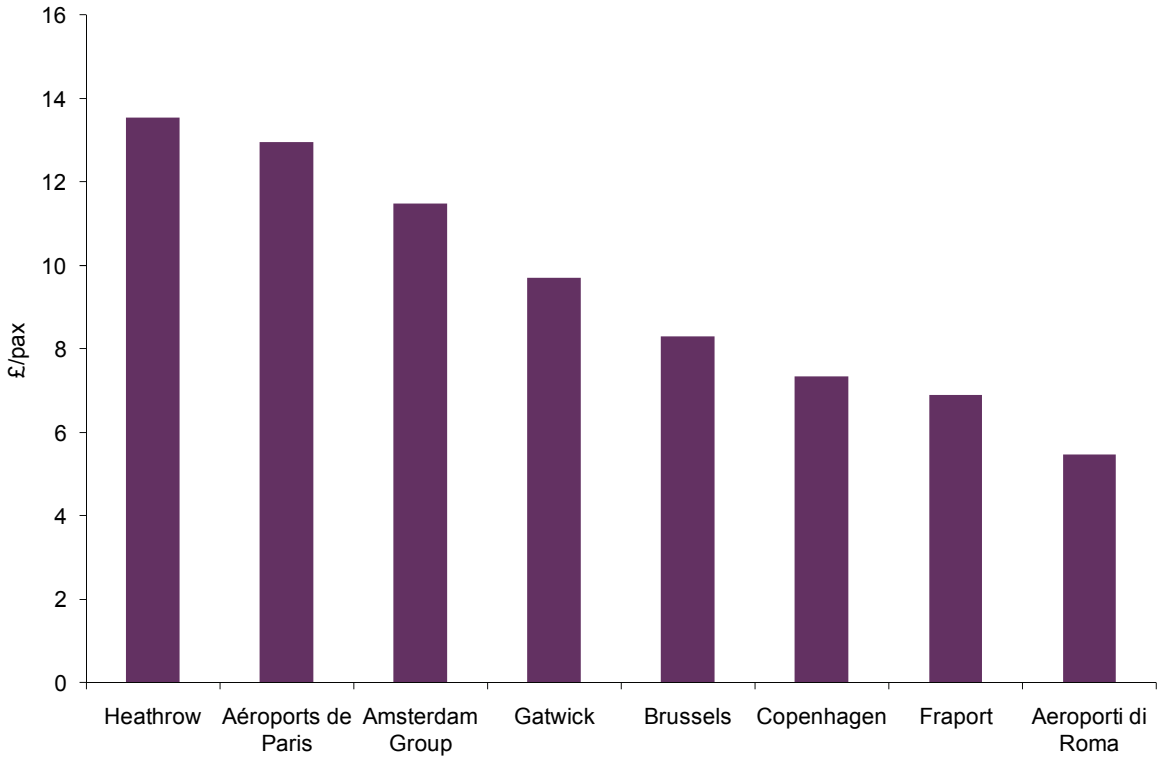
[323] Helsey, M. and Codd, F. (2012), 'Aviation: proposals for an airport in the Thames Estuary, 1945-2012', House of Commons library, July 20th.

[324] This argument has been used previously by Foster + Partners when considering how the Thames Hub Airport could be funded.

A6 Operating costs

1. Following the construction of the airport there will be ongoing operating costs associated with its functioning. Figure A6.1 shows the current level of operating costs at some European airports.

Figure A6.1 Operating costs (£/pax)



Note: Operating costs include all non-staff cash costs, such as utilities, cleaning and maintenance, and excludes staff costs and depreciation. The exclusion of staff costs negates the issue that some airports have different approaches to resourcing security—ie, some have in-house security, while at others it is contracted out and/or not funded by the airport.

Source: Leigh Fisher (2012), 'Airport Performance Indicators', October.

2. Figure A6.1 shows that operating costs per passenger vary across the European airports used in this sample. Initially, Heathrow may seem the closest comparator for the costs of a new hub airport—both are hub airports and will face similar input costs from being located in the South East.

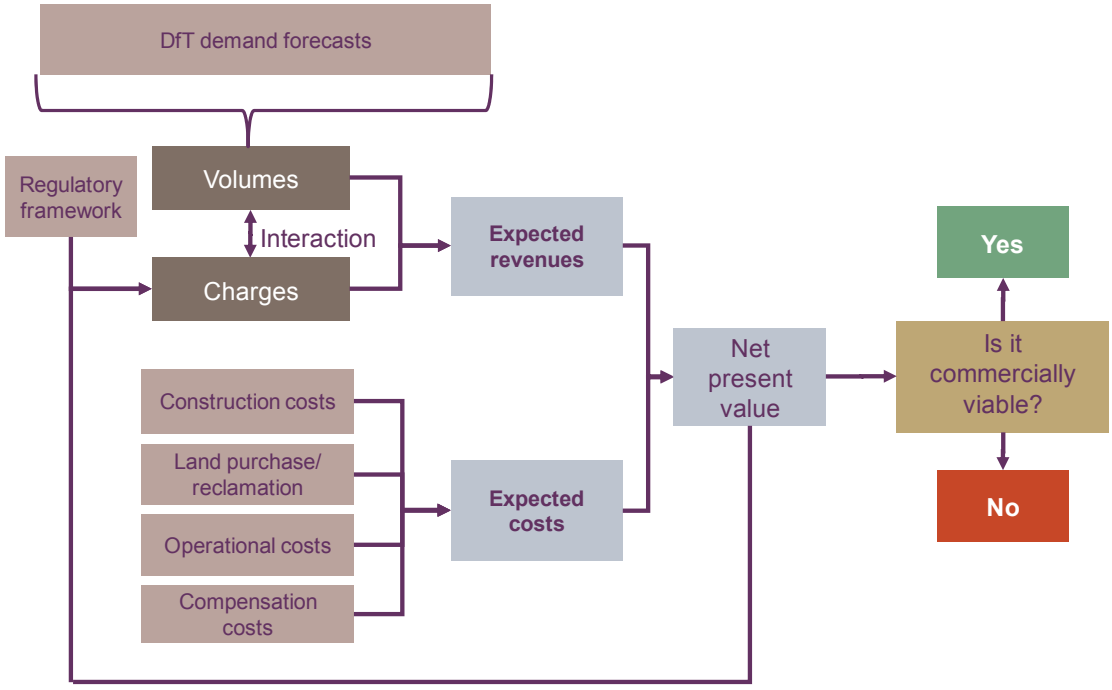
3. However, a new hub airport would most likely be designed and constructed in a way that allows it to optimise its functioning (for example, baggage-handling systems, passenger connections between terminals) and potentially realise efficiency gains. A caveat to this is that proposals with split landside and airside passenger terminals are likely to incur increased operating costs due to the need to duplicate some staff and facilities.

4. As OPEX costs may not be comparable across airports due to differences in the services provided (eg, policing at Fraport is state-funded), Oxera has assumed the operating cost value of Heathrow in its base-case assumptions.

A7 Oxera's cash-flow modelling

1. Oxera has constructed a simple cash-flow model in order to produce stylised calculations that underpin its assessment of the viability of a new hub airport. This model was used for the calculations in Appendix 2.

Figure A7.1 Stylised representation of Oxera's cash-flow model



Source: Oxera.

Demand assumptions

2. The base-case demand assumptions are based on the DfT's 2011 aviation forecasts.[325] As noted in section 3, developments in the macroeconomy since 2011 may merit revisions to these forecasts. However, for the purposes of this study, the official forecasts have been retained, with an acknowledgement that there may be some downside to these values.

3. Oxera has created a number of scenarios for analysing demand at a new hub airport. All of these are purely indicative and intended to illustrate volume effects rather than representing specific demand scenarios. Oxera's base-case assumption has been that if Heathrow is closed, all Heathrow traffic moves to the new hub airport. If Heathrow remains open, the new hub soaks up all unmet traffic and attracts some of Heathrow's existing demand.[326]

4. The DfT's forecasts incorporate a degree of diversion from London airports to the rest of the UK as a result of capacity constraints at the London airports. Oxera has also tested a scenario whereby the London airports maintain their current market share relative to the

[325] Department of Transport (2011), 'UK Aviation Forecasts', August.,

[326] The DfT's constrained forecasts used here are on a national basis; hence, this assumption is likely to have a favourable impact on commercial viability since not all of the constrained traffic may actually be associated with the South East.

rest of the UK. The results of this scenario are similar to those arising from using the DfT's high case demand forecasts, and are not shown separately in Table A2.1.

5. Oxera has assumed that there are no capacity constraints at the new hub airport. In the period examined, this means that the new airport can service unlimited demand growth. In the most favourable scenarios examined for this report, this would mean that the airport is servicing 150–200mppa by 2050.

Cost assumptions

6. Oxera's construction and surface access cost assumptions are based on a broad range of evidence from existing proposals, as described in section 4. Oxera has taken these cost estimates as given and has not sought to independently verify their validity.

7. Oxera's operating cost assumptions are based on the current level of operating costs at UK airports. See Appendix 6.

Price-setting assumptions

8. In the base case Oxera has assumed that charges are equivalent to those at Heathrow (incorporating both aeronautical revenues and revenues earned from commercial activities).

9. Oxera has also tested a low scenario where charges are equivalent to Gatwick's current charges. Additionally, a high scenario has been tested where charges are 50% higher than Heathrow's charges per passenger.[327]

Summary of assumptions

10. Tables A7.1 and A7.2 summarise the assumptions used in Oxera's cash-flow modelling.

[327] This value comes from indicative demand modelling conducted by Oxera to indicate the level of charges that might be sustainable by an unregulated monopolistic airport, assuming linear demand and the DfT's estimate of current price elasticities.

Table A7.1 Detail of policy scenarios

	Design	Impact on Heathrow	Base case	
			Transfer from Heathrow	Total private construction cost (£ billion)
1	Two-runway new hub	Heathrow open	0%	30
2	Three-runway new hub	Pre-financing from Heathrow	100%	40
3	Three-runway new hub	Heathrow closed	100%	40
4	Three-runway new hub	Heathrow closed Surface access publicly funded	100%	20
5	Four-runway new hub	Heathrow open	0%	50
6	Four-runway new hub	Heathrow closed	100%	50
7	Four-runway new hub	Heathrow closed Surface access publicly funded	100%	30
8	Phased-in two-runway new hub	Mixed mode flying at Heathrow	0%	30

Source: Oxera.

Table A7.2 Detail of external scenarios

External scenario	Scenario	
Demand different from DfT central forecast	Low	DfT low scenario
	High	DfT high scenario
Different transfer from other London airports	Low	No transfer
	High	30% transfer from Gatwick; 3% transfer from Stansted
Difference in charges	Low	Equivalent to Gatwick
	High	Equivalent to Heathrow plus a 50% mark-up
Differences in construction costs	Low	Low end of corresponding range from section 4
	High	32% optimism bias mark-up on base case

Source: Oxera.

A8 Financing options—transport precedent

1. Financing of significant infrastructure projects can span from full public ownership to more limited forms of government intervention to full private ownership. However, as highlighted below, most recent infrastructure investments have tended to involve significant levels of public financing. As discussed below, there is relatively little experience of new infrastructure projects being directly privately financed.

Government funding

Eurostar

2. Eurostar was originally financed by the three shareholders: SNCF of France, SNCB of Belgium, and London & Continental Railways (LCR) of the UK, all state-owned.

Berlin Brandenburg Airport

3. While Berlin Brandenburg Airport was originally intended to be funded at least in part through private investment, in practice the equity funding has all been provided by German government institutions, and the debt funding has all been subject to a full government guarantee.

PPP/PFI

HSL Zuid (High-Speed Line South), Netherlands

4. After nine years of construction, the HSL Zuid opened in 2009, connecting Amsterdam to Brussels, via Schiphol, Rotterdam and Breda. NS (Dutch Railways) Hispeed is the service operator, with a 90% share in the venture, and KLM owns 10%.

5. At 2006 prices, the project cost was €6.9 billion,[328] and was financed through a PPP scheme led by the Infraspeed BV consortium (which included Fluor Daniel, BAM/NBM, Siemens, Innisfree and Charterhouse Project Equity Investment). The banking consortium was led by Bayerische Hypo-und Vereinsbank, ING, KBC, KfW, Dexia Public Finance Bank and Rabobank.

6. HSL Zuid will remain the property of the Dutch government, which will pay an annual performance fee to the operators. The contract covered a four-year construction period and maintenance up to 2030.

Sud-Europe Atlantique

7. In 2011, the European Investment Bank (EIB) decided to provide financing of €1.2 billion for the Sud-Europe Atlantique high-speed rail line between Tours and Bordeaux, France, which is privately owned through a 50-year concession. The design and

[328] Based on Railway-Technology.com, available at http://www.railway-technology.com/projects/zuid/ accessed, January 11th 2013.

construction phase is due to take six years, and the line will connect Bordeaux and Paris in about two hours.[329]

8. The EIB's financing structure is as follows:

- €1 billion of debt—mix of government-guaranteed debt under an economic stimulus plan, lending not guaranteed by the government, and equity bridging lending;
- a special loan guarantee of €200m provided by the Bank and the European Commission.

Birmingham highways

9. In 2010, public services provider, Amey, won a 25-year highways maintenance contract worth £2.7 billion to upgrade and maintain Birmingham's infrastructure network.[330] The terms of this PFI deal included Amey investing £350m in road and pavement repair and providing street lights, with the DfT and Birmingham City Council funding the remainder of the project.

Franchising

Rail franchising

10. The majority of rail franchises in Great Britain operate with some form of government intervention, such as subsidy and/or a revenue share/support arrangement

Government funding with private capital contribution

Crossrail

11. The Crossrail project has been granted funding of £14.8 billion.[331] Fully owned by Transport for London, it is to be financed by the UK government and the Greater London Authority, with some support from London businesses. The funding participants are:

- the Greater London Authority;
- government via a grant from the DfT;
- Crossrail farepayers contributing to repaying the debt raised by Transport for London;
- certain London businesses; and
- additional financial contributions from some key beneficiaries of Crossrail (City of London Corporation, BAA, Canary Wharf Group, and Berkeley Homes).

[329] EIB (2011), 'Tours-Bordeaux Sud Europe Atlantique high-speed line – RFF signs Europe's largest high-speed rail concession agreement with VINCI - Unprecedented EIB financing of EUR 1.2bn', press release, June 16th.

[330] Wragge & Co (2010), 'Wragge & Co advises Amey on £2.7 billion Birmingham highways PFI project', June 10th.

[331] Based on Crossrail website, http://www.crossrail.co.uk/railway/funding#.UO1BqZaNRu4.

12. However, the funding is not in the nature of traditional private finance, as it represents a contribution to an infrastructure project, the return on which will be indirect, through the benefits to the private investors' businesses from the funding.

Private funding with government guarantee

Network Rail

13. Network Rail is the GB rail infrastructure manager. It is a company limited by guarantee, and its debt financing from private capital markets benefits from a government guarantee. The proportion of debt to the regulatory value of the company (its RAB) is limited by the Office of Rail Regulation via a licence provision.

Private funding

Existing airports and incremental infrastructure investment

14. Many existing airports, including all the major London airports, are privately owned, and new infrastructure in those airports, such as the investment in Terminal 5 at Heathrow, is privately owned and funded.

A9 Recent proposals and international precedent

1. This section looks at some of the evidence that has been used to inform the estimate used in this report, covering UK proposals and international precedent.

2. Oxera considers that these proposals provide useful information on costs where this cannot easily be obtained elsewhere, and can also be used as a cross-check for other sources of information.

UK proposals

3. In forming estimates for the costs involved in building a hub airport that have been used in the cash-flow model, Oxera has drawn on the proposals that have been put forward for a new hub airport in the UK. These proposals have an advantage over international example, in that they should already incorporate some UK-specific factors, such as labour costs. The proposals outlined below are not an exhaustive list, but cover some of the most recent and substantiated proposals.

- **'Testrad'**—the Mayor of London, Boris Johnson, has advocated a new hub airport on an artificial island in the Thames Estuary. In November 2008, he appointed Douglas Oakervee to carry out a feasibility study for such an airport. The Oakervee review considered a new airport to be additional to, rather than a replacement for, the existing London airports. It estimated the cost of building a two-runway airport, plus transport links, at £40 billion (while noting that this could be lowered).[332] Since then Testrad has been formed and its proposals for 'London Jubilee International Airport were published in November 2012.[333]

- **Thames Hub**. Foster and Partners, Halcrow and Volterra have proposed a four-runway Thames Hub airport, which would be capable of serving 150mppa and would be integrated with a new high-speed orbital rail route. As well as benefiting from a fourth runway, it is proposed that the airport would have very low noise impact and would be able to operate 24 hours a day, since the approach to the airport would primarily be over water. The cost of the entire Thames Hub project is estimated at £50 billion, including the costs of the orbital rail route (circa £20 billion), enhancements to the Thames Barrier (£6 billion), and infrastructure improvements (£4 billion).[334] The cost of the airport alone is estimated to be around £20 billion.[335] The authors of the proposal estimate that it could generate £150 billion of economic benefits, of which £35 billion would come directly from the airport.

[332] Oakervee, D. (2009), 'Thames estuary airport feasibility review', October.

[333] Tested (2012), op. cit.

[334] Foster and Partners, Halcrow and Volterra (2011), 'Thames Hub: An integrated vision for Britain', November, p. 30.

[335] Foster and Partners (2011), 'Foster + Partners, Halcrow and Volterra launch Thames Hub vision', press release, November 2nd.

- **Cliffe**. In the process leading up to the 2003 White Paper on aviation, the DfT identified a site near Cliffe, on the Hoo Peninsula in Kent, as the leading candidate for a new hub airport. The site was chosen on the basis that 'it offered enough land for large-scale development, the potential for good transport connections to key markets in and around London, support for regional planning objectives in the Thames Gateway, and the potential for 24-hour operation (of particular value to freight operators), with relatively low numbers of people affected by noise.'[336] This option was not supported by the White Paper owing to the high capital costs, lower benefits than expansion of existing airports, and the risk to financial viability posed by the high upfront construction costs. It was estimated at the time that the Cliffe airport would have cost around £16 billion in 2002 prices.[337]

International proposals

- **Hong Kong International Airport** was designed as a replacement for the former international airport (Kai Tak Airport), which had limited expansion potential to cope with increasing air traffic. Hong Kong International Airport is run by the Airport Authority of Hong Kong, a statutory body of the government but which is financially independent. The airport came into operation in 1998 after six years of construction at a cost of about US$20 billion. The government financed a proportion of this cost while consortiums of banks also provided loans. The new airport was constructed in parallel with the development of new road and rail links to the airport and land reclamation projects. Since the airport opened there has been continued investment in enhancement projects and the construction of a third runway is being considered.

- **Berlin Brandenburg Airport**. The opening of Berlin Brandenburg Airport was recently postponed again, from June 2012 to 2014, having been postponed from its original opening date in 2011, owing to various operational problems. Once opened, the airport will replace the existing multi-airport system: Templehof Airport has already closed, Tegel Airport will close when Berlin Brandenburg Airport starts operating, and much of the terminal infrastructure of the existing Schönefeld Airport is being incorporated into this hub, which is on a nearby site.[338] The owner of the Berlin airports was originally set up as a public operation with the states of Berlin and Brandenburg each holding a 37% share, and the Federal Republic of Germany the remaining 26%. In 2002, an investment consortium bought all the shares and agreed to provide capital and to acquire any additional land needed for airport expansion, in exchange for a concession to operate Berlin Brandenburg Airport for 99 years. Following this, there was a subsequent injection of capital from the government. The federal government has borne the costs for the railway and road infrastructure associated with the new airport. It is predicted that Berlin Brandenburg Airport will eventually handle 27m passengers a year, although it can be expanded for up to 45m

[336] Department for Transport (2003), 'The Future of Air Transport', December, pp. 112–3, para 11.19.

[337] Helsey, M. and Codd, F. (2012), 'Aviation: proposals for an airport in the Thames Estuary, 1945-2012', House of Commons library, July 20th, p. 8.

[338] BER (2012), 'Press Kit', September 21st.

passengers. A number of airlines have already made plans to expand their operations at this new airport.[339]

- **Montreal Mirabel Airport**. This airport was opened in 1975 at a cost of US$1 billion and with forecasts of up to 50m passengers annually. It was expected that airlines would choose to move to Mirabel with its updated facilities and that it would replace Montreal's Dorval Airport. For a few years after opening, all international flights to and from Montreal were required to use Mirabel. However, the out-of-town location and poor rail and road links to the city led to criticism from airlines and passengers. Mirabel never handled more than 2.8m passengers annually and in 2004 became a cargo-only airport, while Dorval remained the main Montreal airport.[340]

[339] Ibid.

[340] Krauss, C. (2004), 'End of Era Near in Montreal for White-Elephant Airport', *The New York Times*, October 3rd.

A10 Pre-funding of aviation infrastructure via charges

1. Pre-funding[341] is the process of raising funding for future investment from existing users. It is known as pre-funding since it involves obtaining funds prior to an investment being made, rather than borrowing (or raising finance in another way) which is ultimately repaid by future users.

2. In the context of a new hub airport, pre-funding could come from raising funds from existing aviation users at existing airports, with the most likely method being via increased charges. Charges at Heathrow, Gatwick and Stansted are currently regulated.

3. In a regulatory context, infrastructure investments can be pre-funded through the advancement of revenues from later control periods. One way of doing this is to add the associated capital expenditure (CAPEX) to the RAB while the asset is still under construction, rather than waiting for that asset to become operational. This allows the infrastructure owner to earn allowed revenues on a larger asset base in the short term.

4. This appendix highlights the example of the CAA capping Heathrow's aeronautical charges at a level that incorporated an allowance for pre-financing of a future infrastructure investment (ie, Terminal 5), and considers the advantages and disadvantages of such an approach.

Example: Heathrow Terminal 5

5. In February 1993, BAA applied for planning permission to develop a fifth terminal at Heathrow Airport. The development was the subject of a public inquiry that ended in March 1999. The first construction phase commenced after government approval in November 2001. The development costs of T5 are outlined in Table A10.1.

Table A10.1 T5 development phasing and costs

Phase	Commencing	Opening year	Capacity (mppa)	Construction costs (2002 prices, £m)
1	2002	2008	20–22	2,711
2	2007	2011	10	422
Total			**30–32**	**3,133**

Source: Competition Commission (2002), 'BAA plc: A Report on the Economic Regulation of the London Airports Companies (Heathrow Airport Ltd, Gatwick Airport Ltd and Stansted Airport Ltd)', November, p. 292.

6. The key issue in the regulatory treatment of T5 related to the addition of the CAPEX to the RAB. A typical regulatory approach is to allow an increase in the RAB upon completion of the project, since this is the point at which users can benefit from the investment. However, there were two main arguments as to why an advancement of revenues was appropriate in the case of a project of the size of T5. First, BAA argued that

[341] Funding typically refers to who ultimately pays for a service, whereas financing refers to who covers any short-term shortfall and is later compensated by the funders. In the case of pre-funding, both funding and financing effectively occur simultaneously such that the terms pre-funding and pre-financing are often used interchangeably.

without revenue advancement it would have faced substantial financing problems during construction due to the mismatch in the timing of its financing costs and the revenues from T5. Second, as T5 would lead to a substantial increase in the RAB and thus Heathrow's price cap, concentrating the increase in a one-off adjustment in the RAB would lead to a substantial jump in users' costs.[342] The CAA concluded that this would have led to an:

> inefficient profile of pricing, by diluting BAA's investment incentives since large price increases in 2008/9 would have a low probability of being seen as credible or deliverable, and by making the delivery of BAA's investment programme more difficult. Not allowing revenue advancement for this review would increase the likelihood that a much larger revenue advancement, in future, or higher cost of capital would have to be adopted, now or in future, to compensate.[343]

7. The solution devised was twofold. First, the CAA allowed a step-wise increase in the RAB, with compensation for assets under construction. The increases were linked to milestones in the construction process for T5. The achievement of these milestones then 'triggered' the increase in the RAB (see Table A10.2).

8. Since a higher RAB implies both a greater depreciation charge and a higher return on capital, the step increases in the RAB fed through to greater allowed revenues that the airport could collect from its users. In turn, this allowed for higher charges than would have been the case, without adding assets under construction to the RAB. Consequently, Heathrow's users were effectively contributing to the costs of T5 before it was operational.

Table A10.2 Triggers for RAB increases in T5

Date	Trigger
2003	Earthworks complete
2004	First four stands operational Rivers diverted
2005	Control tower completed
2006	Terminal weather-tight Satellite weather-tight
2008	Terminal completed

Source: CSFB (2003), 'BAA', March 27th.

9. The CAA also allowed an uplift to the cost of capital as recommended by the Competition Commission (CC). The CC identified a variety of factors when explaining the increase in the cost of capital, including systematic and non-systematic risks and financeability. Regarding systematic risk, the key consideration was the greater sensitivity of demand that BAA would face at all of its airports given the additional capacity of T5:

> we believe that the scale of the T5 project and consequential increase in borrowings and gearing will increase BAA's risks: it represents a considerable investment, with

[342] The CC calculated that a one-off price adjustment of approximately 80% would be needed when T5 commenced operations with no revenue advancement. Competition Commission (2002), 'BAA plc, report on the economic regulation of the London airport companies', November, p. 317, para 10.38.

[343] Civil Aviation Authority (2003), 'Economic Regulation of BAA London Airports (Heathrow, Gatwick and Stansted) 2003–2008: CAA Decision', February, p. 36.

very long-term returns, subject not only to construction risks, but also risks of uncertain demand.[344]

Advantages

10. There are two main advantages of pre-financing, as captured in BAA's arguments on the pre-financing of Heathrow's T5. First, front-loading revenues can help to ensure that there are sufficient cash flows to meet the upfront design and construction costs involved in large infrastructure projects. Second, pre-financing can help to smooth increases in charges, rather than having step changes in charges at the point when new investments become operational.

Disadvantages and opposition from airlines

11. There may, however, be several disadvantages of pre-financing.

- In particular, pre-financing may raise intergenerational equity issues since it involves a transfer between current users and future users—ie, current users pay for facilities that will primarily be used by (and thus provide benefits for) future users. While in some cases these users may be the same (eg, at a corporate level, the new investment may be used by the existing airlines), there is no guarantee that they will be. Hence, there is potentially a transfer between individuals. This form of intergenerational subsidy is common to many types of investment, although it also goes against the normal approach of asking future generations to pay for investment because they are expected to be better off.

- It may weaken the incentives for the investment to be delivered in a costly and timely manner.

- It is likely to receive opposition from airlines: for example, the International Air Transport Association has argued that it is expensive, inefficient, unfair, unjustified and unnecessary.[345]

[344] Competition Commission (2002), 'A report on the economic regulation of the London airports companies (Heathrow Airport Ltd, Gatwick Airport Ltd and Stansted Airport Ltd)', para 2.327.

[345] International Air Transport Association (2012), 'Pre-financing', position paper, available at http://www.iata.org/policy/Documents/Pre_financing.pdf accessed on January 11th 2013.

A11 Potential uses of existing airport space

1. A number of the scenarios examined in this report assume that Heathrow would be closed once the new hub was opened. If this occurred a decision would need to be taken about the use of Heathrow's existing land. Indeed, the use of the land may influence the commercial case since it may affect the amount of compensation required by the airport owners.

2. This section describes several previous instances of the closure of international airports and how these sites were subsequently used for other purposes. In general, the areas have been used for a mixture of residential and commercial purposes.

Airport	City	Closed	Reuse	Reuse value
Stapleton International	Denver	1995	Residential and commercial redevelopment	$4 billion

3. Following the closure of Stapleton International Airport in 1995 the area occupied by the airport was converted into one of the USA's largest brownfield redevelopments. The site of more than 4,000 acres supported the construction of more than 12,000 homes and 10m square feet of office and industrial space.[346]

4. A private sector developer is working in conjunction with the local authorities as part of a PPP to collaborate and finance the infrastructure and community facilities.

Airport	City	Closed	Reuse	Reuse value
Robert Mueller	Austin	1999	Mixed-use urban village	$1 billon

5. The site of the former Robert Mueller airport is being redeveloped into a mixed-use urban village with plans for 4,000 homes (25% of which will be 'affordable homes'), 140 acres of parks, commercial space and a town centre. Construction began in summer 2007.[347]

Airport	City	Closed	Reuse	Reuse value
Munich–Reim	Munich	1992	Shopping and community centre and residential and office space	–

The former airport has been converted into the Messestadt-Reim, a new development and borough for the city. It contains a new convention/community centre and 7,000 new homes.[348]

Airport	City	Closed	Reuse	Reuse value
Templehof	Berlin	2008	Urban parkland	n/a

[346] Greater Austin Chamber of Commerce, 'Intercity Visit Denver, CO'.

[347] Mueller Austin (2012), 'Fact Sheet by the numbers'.

[348] http://www.messestadt-riem.com/msr/default_e.htm#

6. Templehof was one of several airports serving Berlin that have been planned to close following the opening of the Berlin Brandenburg Airport.

7. Since the airport has been closed it has been adapted into an area of structured parkland known as 'Templehof Freiheit'. The area is already open to the public, although further changes are expected to the environment. The terminal building is a protected landmark and remains open for public tours. The site is also used for international event fairs.

Airport	City	Closed	Reuse	Reuse value
Tegel	Berlin	2014 (planned)	To be confirmed	n/a

8. Tegel Airport will be closed in 2014 once the Berlin Brandenburg airport opens. The future plans for the space left by Tegel Airport when it closes are currently unclear.

Airport	City	Closed	Reuse	Reuse value
Schönefeld	Berlin	2014 (planned)	Integration into new airport	n/a

9. Parts of Schönefeld will be incorporated into the Berlin Brandenburg Airport once it opens. The new airport will share one runway with the existing one, although much of the old airport, including the terminal and apron areas, will undergo urban redevelopment.

Formal Minutes

Wednesday 8 May 2013

Members present:

Mrs Louise Ellman, in the Chair

Steve Baker	Karl McCartney
Jim Dobbin	Adrian Sanders
Kwasi Kwarteng	Iain Stewart
Karen Lumley	Graham Stringer

Draft Report (*Aviation Strategy*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 32 read and agreed to.

Paragraph 33 read, as follows:

> **There is a specific capacity problem at Heathrow Airport. It is the UK's only hub airport, it has been short of capacity for a decade, and it is currently operating at full capacity. Furthermore, there is a lack of capacity to meet demand during peak hours across all airports in the south east. There may be some scope to shift small business aircraft to designated business airports. However, this will have limited impact. The vast majority of aircraft movements at Heathrow are commercial flights, which carry a mixture of leisure passengers, business passengers and cargo. It is therefore impractical to suggest that Heathrow's capacity problem can be resolved by shifting commercial flights of a "specific" type (for example, leisure flights) to another airport. Furthermore, we note that airlines make decisions on where services operate based on commercial reasons. We also note that some non-hub airports may have a role to play in providing flights to emerging markets, this is not a substitute for increased hub capacity.**

Amendment proposed, in line 10, to leave out "**, this**", and insert "**and that the HS2 rail project offers the potential for other airports such as Birmingham and East Midlands to attract more passengers from London and the south east. For example, with HS2 the rail journey time from central London to Birmingham airport will be less than 40 minutes, not dissimilar from journey times to the main London airports. This, however,**".—(*Iain Stewart.*)

Question put, That the Amendment be made.

The Committee divided.

Ayes, 5	Noes, 1
Steve Baker	Kwasi Kwarteng
Karen Lumley	
Karl McCartney	
Adrian Sanders	
Iain Stewart	

Amendment accordingly agreed to.

Paragraph, as amended, agreed to.

Paragraphs 34 to 79 read and agreed to.

Paragraph 80 read.

Amendment proposed, to leave out lines 5, 6 and 7.—(*Adrian Sanders.*)

Question put, That the Amendment be made.

The Committee divided.

Ayes, 2	Noes, 5
Kwasi Kwarteng	Steve Baker
Adrian Sanders	Karen Lumley
	Karl McCartney
	Iain Stewart
	Graham Stringer

Amendment accordingly negatived.

Paragraph agreed to.

Paragraphs 81 to 95 read and agreed to.

Paragraph 96 read.

Amendment proposed, in line 3, to leave out "**the UK's hub**" and insert "**Heathrow**".—(*Adrian Sanders.*)

Question put, That the Amendment be made.

The Committee divided.

Ayes, 1	Noes, 6
Adrian Sanders	Steve Baker
	Kwasi Kwarteng
	Karen Lumley
	Karl McCartney
	Iain Stewart
	Graham Stringer

Amendment accordingly negatived.

Paragraph agreed to.

Paragraphs 97 to 104 read and agreed to.

Paragraph 105 read, as follows:

> **It is disappointing that Air Passenger Duty (APD) has risen this year and is set to rise again from April 2014.** ***We believe that the Government should reverse this decision and cut APD to help stimulate growth in aviation. Failing this, we recommend that HM Treasury conduct and publish a fully costed study of the impact of APD on the UK economy. We would, in particular, like to know what the Government's view is of the PwC conclusion that abolishing APD would pay for itself by increasing revenues from other sources.***

Motion made, to leave out paragraph 105 and insert the following new paragraph:

> ***We recommend that HM Treasury conduct and publish a fully costed study of the impact of APD on the UK economy. We would, in particular, like to know what the Government's view is of the***

> ***PwC conclusion that abolishing APD would pay for itself by increasing revenues from other sources. If such a study produces clear evidence that APD has a negative effect on the UK economy and Government revenue, we recommend that APD is significantly reduced or abolished.***—(*Iain Stewart.*)

Question put, That the new paragraph be read a second time.

The Committee divided.

Ayes, 5	Noes, 2
Karen Lumley	Steve Baker
Karl McCartney	Kwasi Kwarteng
Adrian Sanders	
Iain Stewart	
Graham Stringer	

Paragraph 105 disagreed to and new paragraph inserted (now paragraph 105).

Paragraphs 106 to 108 read and agreed to.

Paragraph 109 read, as follows:

> **We have heard evidence from the main players in aviation and many other interested parties. We have found that there is a clear need for greater capacity at the UK's hub airport. Our view is that a new hub airport should not be built at this time. A split hub is not a viable option. Expansion of Heathrow is the only way forward. A third runway at Heathrow is long overdue and, depending on the position of future runways, a fourth runway might also be feasible. We have recommended that the Airports Commission assess the feasibility of four runways at Heathrow.**

Amendment proposed, in line 3, to leave out from "option." to the end of the paragraph, and insert "**A third runway at Heathrow is necessary to meet existing and future demand that can be reasonably predicted. Longer term, further work is required to assess whether further expansion at Heathrow, potentially via a new airport to the west of the current site, is required. We recommend that the Airports Commission obtains this information so that an evidence-based decision can be made.**"—(*Iain Stewart.*)

Question put, That the Amendment be made.

The Committee divided.

Ayes, 6	Noes, 1
Steve Baker	Adrian Sanders
Kwasi Kwarteng	
Karen Lumley	
Karl McCartney	
Iain Stewart	
Graham Stringer	

Amendment accordingly agreed to.

Paragraph, as amended, agreed to.

Paragraph 110 read and agreed to.

Annexes agreed to.

Summary agreed to.

Motion made, and Question put, That the Report be the First Report of the Committee to the House.

The Committee divided.

Ayes, 6	Noes, 1
Steve Baker	Adrian Sanders
Kwasi Kwarteng	
Karen Lumley	
Karl McCartney	
Iain Stewart	
Graham Stringer	

Question accordingly agreed to.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Monday 13 May at 4.00 pm

Witnesses

(Published in Volume II on the Committee's website www.parliament.uk/transcom)

List of printed written evidence

(Published in Volume II on the Committee's website www.parliament.uk/transcom)

7	TUI Travel PLC	AS 116
8	Heathrow Airport	AS 84: AS 84A: AS 84B
9	Gatwick Airport	AS 68: AS 68A
10	Stansted Airport Limited	AS 92
11	Aviation Environment Federation	AS 81
12	Friends of the Earth	AS 73
13	HACAN	AS 10
14	Stop Stansted Expansion	AS 42
15	Gatwick Area Conservation Campaign	AS 08
16	British Airways	AS 110
17	CAA	AS 75: AS 75A
18	NATS	AS 51: AS 51A: AS 51B
19	Bristol Airport Limited	AS 55: AS 55A
20	Birmingham Airport	AS 86
21	Manchester Airports Group	AS 44: AS 44A
22	Newcastle International Airport Ltd	AS 38
23	Peel Airports Limited	AS 90
24	Aberdeen Airport	AS 15
25	Airport Operators Association	AS 91: AS 91A
26	CBI	AS 114
27	British Chambers of Commerce	AS 72
28	Institute of Directors	AS 107
29	London First	AS 79
30	City of London Corporation	AS 105
31	Greater Manchester Chamber of Commerce	AS 25
32	Scottish Chambers of Commerce	AS 59
33	Liverpool Chamber of Commerce	AS 63
34	Birmingham Chamber of Commerce	AS 57
35	Freight Transport Association	AS 53
36	London Biggin Hill Airport	AS 66: AS 66A
37	Foster + Partners	AS 39: AS 39A
38	IAAG	AS 22
39	Gensler	AS 111
40	RSPB	AS 98
41	WWF-UK	AS 69: AS 69A
42	Medway Council	AS 60
43	Kent County Council	AS 61
44	London Borough of Hounslow	AS 101
45	London Borough of Hillingdon	AS 16
46	Environment Agency	AS 26
47	Mayor of London	AS 104: AS 104A
48	Department for Transport	AS 87: AS 87A: 87B

List of additional written evidence

(published in Volume III on the Committee's website www.parliament.uk/transcom)

1	Elizabeth M. Balsom	AS 01
2	Mr Ken McDonald	AS 02
3	Mr Philip Greswell	AS 03
4	Howard and Diane Turner	AS 04
5	London Medway Airport Group	AS 05
6	Peter McManners	Ev 06
7	No Estuary Airport campaign	AS 07
8	Dr Patrick Hogan	AS 09
9	Royal Aeronautical Society	AS 11
10	Mrs Caroline Tayler, Mrs Jane Vogt and Mr Stuart McLachlan	AS 12
11	Professor David Metz and Dr Anne Graham	AS 13
12	Belfast City Airport Watch	AS 14
13	Mr Basil Hutton	AS 17
14	Peter Tomlinson, Iosis Associates, Bristol	AS 18
15	Mr Francis Joseph McGlade	AS 19
16	Dr. Peter W. Skelton	AS 21
17	Chartered Institute of Logistics and Transport in the UK	AS 23
18	Dr William D Lowe	AS 24
19	Mr John G Miller	AS 27
20	West Windsor Residents Association	AS 28
21	Bluespace Thinking Ltd	AS 29
22	Rothwell Aviation Ltd	AS 30
23	Save Filton Airfield Campaign Group	AS 31
24	Mr Joe Watson	AS 32
25	Aviation Foundation	AS 33
26	Vanderlande Industries UK Ltd	AS 34
27	Zac Goldsmith MP	AS 35
28	Assurity Consulting	AS 36
29	Marilyn Fletcher B.Sc.Ph.D.	AS 37
30	IATA	AS 40
31	Tim Gresty, Cognitio	AS 41
32	Crawley Borough Council	AS 43
33	Lagan Valley Group Residents' Association	AS 45
34	London Chamber of Commerce and Industry	AS 46
35	Merseytravel	AS 47
36	GATCOM	AS 49
37	A Fair Tax on Flying Campaign	AS 50
38	Liverpool City Region Local Enterprise Partnership	AS 52
39	HS2	AS 54
40	Mr Paul Pitcher	AS 56
41	British Airline Pilots' Association	AS 58: AS 58A

42	Debbie Bryce	AS 62
43	Unite	AS 64
44	NECTAR	AS 65
45	Royal Town Planning Institute	AS 70
46	ADS	AS 74
47	Richmond Heathrow Campaign	AS 76
48	NetJets Europe	AS 77
49	SPAA	AS 78
50	Heathrow Hub Ltd	AS 80
51	Chiltern Countryside Group	AS 82
52	The Authorities' Aircraft Noise Council	AS 83
53	UK Airport Consultative Committees Liaison Group	AS 85
54	North Kent Marshes	AS 88
55	Adams Group	AS 93
56	Flybe	AS 94
57	Wildlife Trusts	AS 95
58	Government of Guernsey	AS 96
59	Mr Terence Hughes	AS 97
60	Campaign to Protect Rural England, Kent Branch	AS 99
61	States of Jersey Economic Development Department	AS 100
62	Yorkshire and Northern Lincolnshire All Party Parliamentary Group	AS 102
63	Marinair, the Thames Estuary Airport Company Limited	AS 103
64	Institution of Mechanical Engineers	AS 106
65	Aberdeen Airport Consultative Committee	AS 108
66	Greenpeace	AS 109
67	UK Travel Retail Forum	AS 112
68	The London Assembly	AS 113
69	Interlinking Transit Solutions Ltd	AS 115
70	Dr. Mayer Hillman	AS 117
71	Why Not Manston?	AS 118
72	Southend on Sea Borough Council	AS 119
73	Lydd Airport Action Group	AS 120
74	The Air League	AS 121
75	Testrad	AS 123
76	London Ashford Airport Ltd (lydd airport)	AS 124
77	Mr S H Ashurst	AS 125

List of Reports from the Committee during the current Parliament

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2013–14

First Report	Aviation strategy	HC 78

Session 2012–13

Twelfth Report	The European Commission's 4th Railway Package	HC 1001
Eleventh Report	Land transport security – scope for further EU involvement?	HC 875
Ninth Special Report	Rail 2020: Government and Office of Rail Regulation Responses to the Committee's Seventh Report of 2012–13	HC 1059
Tenth Report	The Coastguard, Emergency Towing Vessels and the Maritime Incident Response Group: follow up: Government Response to the Committee's Sixth Report of 2012–13	HC 1018
Ninth Report	Marine Pilotage	HC 840
Eighth Report	Cancellation of the InterCity West Coast franchise competition	HC 537
Eighth Special Report	Plug-in vehicles, plugged in policy?: Government Response to the Committee's Fourth Report of Session 2012-13	HC 884
Seventh Report	Rail 2020	HC 329
Sixth Report	The Coastguard, Emergency Towing Vessels and the Maritime Incident Response Group: follow up	HC 647
Fifth Report	Future programme: autumn and winter 2012–13	HC 591
Fourth Report	Plug-in vehicles, plugged in policy?	HC 239
Third Report	Competition in the local bus market	HC 10 (HC 761) (Incorporating HC 1861–i–iii)
Fifth Special Report	Flight Time Limitations: Government Response To The Committee's First Report Of Session 2012–13	HC 558
Fourth Special Report	Air Travel Organisers' Licensing (Atol) Reform: Government Response To The Committee's Seventeenth Report Of Session 2010–12	HC 557
Second Report	Road safety	HC 506 (HC 648) Incorporating HC 1738
First Report	Flight time limitations	HC 164 Incorporating HC 1838

Third Special Report	Sulphur emissions by ships: Government Response to the Committee's Sixteenth Report of Session 2010–12	HC 87
Second Special Report	Counting the cost: financial scrutiny of the Department for Transport 2011–12: Government Response to the Committee's Fifteenth Report of Session 2010–12	HC 15
First Special Report	Draft Civil Aviation Bill: Pre-Legislative Scrutiny: Government Response to the Committee's Thirteenth Report of Session 2010–12	HC 11

Session 2010–12

Seventeenth Report	Air Travel Organisers' Licensing (ATOL) reform	HC 1798
Sixteenth Report	Sulphur emissions by ships	HC 1561
Fifteenth Report	Counting the cost: financial scrutiny of the Department for Transport 2011–12	HC 1560
Fourteenth Report	Cable theft on the Railway	HC 1609 (HC 1933)
Thirteenth Report	Draft Civil Aviation Bill: Pre-Legislative Scrutiny	HC 1694
Twelfth Report	Cost of motor insurance: follow up	HC 1451 (HC 1934)
Eleventh Report	Thameslink rolling stock procurement	HC 1453 (HC 1935)
Tenth Report	High Speed Rail	HC 1185–I (HC 1754)
Ninth Report	Out of the jam: reducing congestion on our roads	HC 872 (HC 1661)
Eighth Report	Bus Services after the Spending Review	HC 750 (HC 1550)
Seventh Report	Taxis and private hire vehicles: the road to reform	HC 720 (HC 1507)
Sixth Report	The Coastguard, Emergency Towing Vessels and the Maritime Incident Response Group	HC 948, incorporating HC 752–i (HC 1482)
Fifth Report	Keeping the UK moving: The impact on transport of the winter weather in December 2010	HC 794 (HC 1467)
Fourth Report	The cost of motor insurance	HC 591 (HC 1466)
Third Report	Transport and the economy	HC 473 (HC 962)
Second Report	Financial Scrutiny of the Department for Transport	HC 683
First Report	Drink and drug driving law	HC 460 (Cm 8050)
Tenth Special Report	The proposal for a National Policy Statement on Ports: Government Response to the Committee Fifth Report of Session 2009–10	HC 1598
Third Special Report	The performance of the Department for Transport: Government response to the Committee's Fourth Report of Session 2009–10	HC 549
Second Special Report	Update on the London Underground and the public-private (PPP) partnership agreements: Government response to the Committee's Seventh Report of Session 2009–10	HC 467
First Special Report	The major road network: Government response to the Committee's Eighth Report of Session 2009–10	HC 421