

The Wider Economy - Impact of Heathrow Airport's expansion on the number and distribution of UK passengers and destinations

A Report by the

All Party Parliamentary Group on

Heathrow and the Wider Economy

3rd February 2015

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ALL PARTY PARLIAMENTARY GROUP ON HEATHROW AND THE WIDER

ECONOMY

INTRODUCTION

1. The All Party Parliamentary Group on Heathrow and the Wider Economy was formed on 10 June 2014. Its terms of reference are to examine the implications of new runway capacity in London, in particular at Heathrow.
2. On 18 December the Group published its report - *Noise from Heathrow Airport* - which set out the results of the Group's first inquiry into present and future noise impact of Heathrow's flight paths. The report can be found online at the Group's website www.heathrowappg.com
3. One of the Group's aims is to examine the impact of Heathrow's expansion on the UK economy. To this end the Group has been looking into the aviation forecasts made by the Airports Commission (the Commission) in its consultation published on 11 November 2013. The consultation is on the Commission's assessment of proposals for additional runway capacity at Gatwick and Heathrow airports.
4. The Commission's brief is to examine the scale and timing of any requirement for additional capacity to maintain the UK's position as Europe's most important aviation hub. In addressing the issue the Commission has said it will seek to balance the wider economic benefits of expansion with the environmental costs.
5. The Commission has also recognised the importance of regional aviation markets to the regional and national economies. In addition, the Government's Aviation Policy Framework supports airports outside the South East of England.
6. It is in the context of these aims and policies that the Group has examined the Commission's forecasts of air passenger demand, related flights and destinations for the UK as a whole. They are the cornerstone of the wider economic benefits from Heathrow's expansion.
7. We understand the Strategic Fit section of the consultation will form a key part of the Commission's recommendation but the analysis contained in this report seemingly has not been undertaken or published. So the exercise is a case of filling a gap rather than challenging any findings by the Commission.
8. The findings challenge the aim of maintaining the UK's position as Europe's most important hub. They also challenge the National Aviation Policy Framework, which specifically supports growth outside the southeast, and they substantially reduce the wider economic benefits in weighing up the balance with local environmental costs such as noise.
9. Inevitably, examination of Heathrow's impact on passenger numbers involves other airports and while the analysis has not focussed on Gatwick, similar findings arise and these are commented on briefly in the report.

10. The framework for the analysis is explained in the Methodology but it may be helpful to briefly describe the approach as a lead into the Executive Summary.
11. The approach has been to establish the passenger numbers for three cases:
 - (1) without expansion of Heathrow or Gatwick (termed the Do Minimum or DM case);
 - (2) with Heathrow expansion, and
 - (3) with Gatwick expansion.

The years examined are 2011, 2030, and 2050 and 2040 where data is available. Focus is on Heathrow's northwest runway option (NWR) and Gatwick's second runway 2R option.

12. The main objective has been to examine incremental changes to passenger numbers, flights and destinations - comparing the DM case with the expansion case. It was found to be important to look behind the headline incremental change and at the considerable re-distribution of demand that is forecast to take place between Heathrow and other airports.

Publication/website

The wider economy - impact of Heathrow Airport's expansion on the number and distribution of UK passengers and destinations can be found online at the Group's website www.heathrowappg.com.

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EXECUTIVE SUMMARY

1. Examination of the Airports Commission's passenger forecasts suggests that on any reasonable assumption there would be no overall increase in the number of UK passengers, flights or destinations as a result of Heathrow's expansion. Instead, the expansion would be fed almost entirely by re-distributing growth from other UK airports and in particular the regional airports.
2. This raises serious doubts about there being any net benefit to the wider UK economy brought about by Heathrow's expansion - not only because of the lack of any incremental growth but quite possibly due to a significant negative impact on the regions and the overall efficiency of the UK economy.
3. Connectivity was examined in terms of the number of destinations and service frequency with special mention of international transfers. These represent a large incremental addition to Heathrow's forecast passenger demand and this report raises doubts about their value to the UK economy.

METHODOLOGY

1. All the raw data analysed here, except some data on international transfers, is contained in the Commission's consultation document - Strategic Fit: AC 05 Forecasts. The aim has been to complete this report by the 3rd February when the Commission's consultation closes. This has meant there has been no time to consider evidence from other sources or to study all of the vast quantity of information published by the Commission in its consultation. The analysis has relied almost entirely on a set of data published in the Strategic Fit Forecasts and we cannot be entirely sure other relevant consultation material has not been overlooked.
2. We have not examined the Department for Transport model used by the Commission and so are unable to comment in detail on the underlying forecasts presented by the Commission on which we base this Report. But we are concerned that the future number of Heathrow aircraft movements may be overstated, as was discussed in our recent Noise Report.
3. The data has been extracted from the Commission's tables and the results assembled in a set of tables contained in the Annexes to this report.
4. Broadly speaking, the tables detail the passenger numbers for the three cases: (1) without expansion of Heathrow or Gatwick (the Do Minimum or DM case); (2) with Heathrow expansion and (3) with Gatwick expansion. These tables provide the comparison needed to determine the overall impact on UK passenger numbers. Usually there are two adjacent tables presented in the Annexes - one for the Heathrow expansion and the other for the Gatwick expansion and both on an incremental basis. They show the re-distribution of passengers between airports taking place to produce the net change in total passengers.
5. The airports examined are Heathrow, Gatwick, other southeast (Stansted, Luton and London City) and the regional airports. This broadly fits with the Commission's breakdown of the figures.
6. The Commission has conducted their appraisal using five scenarios. The Commission says 'An important aspect of the Commission's appraisals is that they are not centred on one potential view of the future. This is because the future development of the aviation sector is inherently difficult to predict.' It goes on to say 'By considering each scheme in relation to multiple potential futures, the Commission aims to stress-test the robustness of its analysis, and ultimately its final recommendations to Government.' The Commission's description of the five scenarios is contained in Annex 1 of this report.
7. The Commission also takes two different approaches to CO₂ - one is termed carbon capped (CC) and the other - carbon traded (CT). These are further described in Annex 1.
8. Combining the above five scenarios with the two carbon scenarios results in ten scenarios, all of which are retained in this analysis.
9. It has not been possible to undertake a risk analysis using the scenarios. But min-max figures across each of the ten scenarios provide the outer extremities of probable variation and a measure

of the uncertainty. What can be said is that the analysis demonstrates that the simple un-risked mean is similar to the median for each of the ten scenarios, which suggests a 'normal' statistical distribution. In considering the results, the term 'average' (although not strictly scientific) is used to give focus to a large quantity of information and a measure of the outcome on any reasonable assumption but it is recognised there is a range of potential outcomes distributed on either side of the average. Each range provides information - some ranges are small and others are larger thus providing insight into the level of uncertainty.

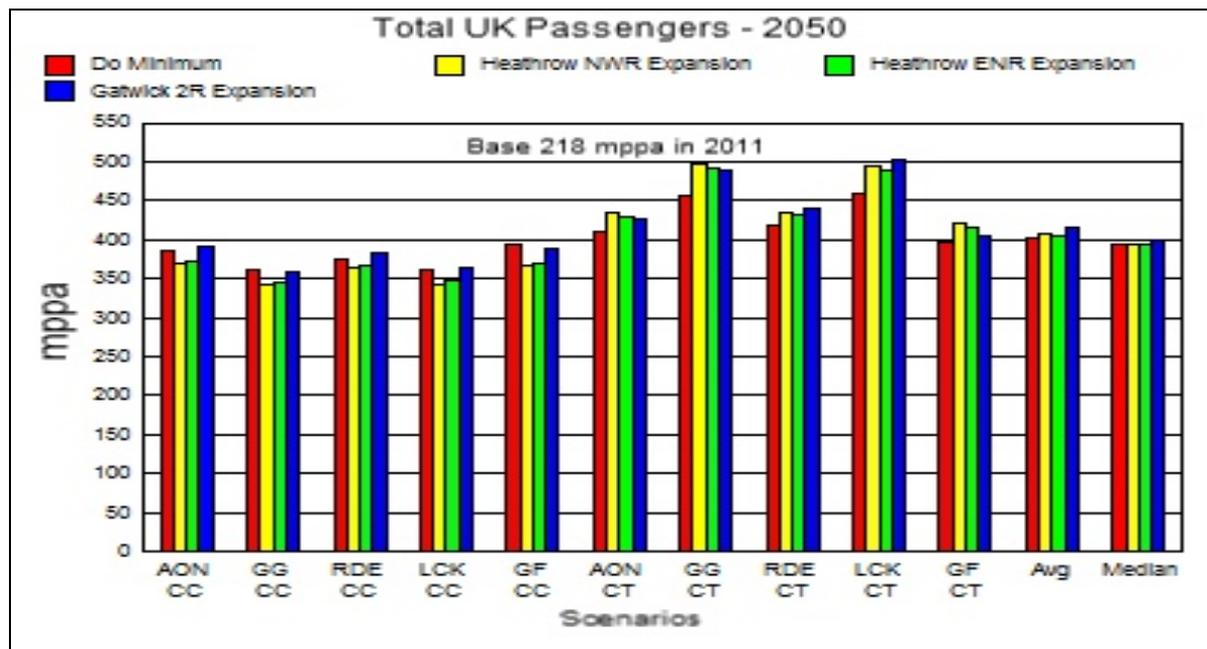
10. It must be stressed that the Group has taken no particular view on where the outcome might be within the range of possibilities. Accordingly, throughout the report a central outcome is placed in the context of the range of possible outcomes.
11. Initially the Heathrow extended runway option (ENR) was also examined but it was found the results are very similar to those for the NWR option, and so only a few of the ENR results are included to illustrate the similarity of outcome.
12. The results are shown in the body of the report as tables and charts. Both are sourced from the tables in the Annexes.
13. Occasionally there are rounding differences in the tables.
14. All the charts and tables have been prepared by the Group secretariat based on the Airports Commission Consultation.

UK AIR PASSENGERS

1. The table and charts in this section are sourced from Annexes 2, 3 and 9.
2. The following table details the Total UK passengers in 2050 based on the forecasts made by the Commission. The total is sub-divided in two ways - long-haul/short haul split and purpose of travel. The figures for the Total UK passengers and each market segment are the averages of the Commission's ten scenarios in each case.
3. The outcome without expansion (do minimum case) is shown in the column headed DM. The Heathrow expansion case is shown in the column headed NWR. The Net increment between the two is analysed as the contribution from Heathrow (LHR), Gatwick (LGW), Other SE airports and regional airports. The other SE airports are Stansted, Luton and London City combined.
4. So for example, expanding Heathrow increases the Total UK passengers by just 5 mppa in 2050 from 402 mppa to 407 mppa. The increase of 43 mppa at Heathrow is offset by decreases of 4 mppa at Gatwick, 6 mppa at other SE airports and 28 mppa at regional airports. These decreases arise through a decrease in growth and are not decreases measured against 2011.
5. It can be seen that all the main segments of UK passenger demand are reduced by the expansion of Heathrow except long-haul demand, which has a relatively small increase of 8 mppa (8% above the DM case) and international transfers which show a very large increase of 19 mppa compared to the DM case, which is discussed later in the section on Destinations.

UK Passengers - million passengers per annum (mppa)								
	Actual	DM No expansion	NWR Expansion	NWR Expansion				
	Total	Total	Total	Incremental				
	UK	UK	UK	LHR	LGW	Other SE	Regions	Net change
Year	2011	2050	2050	2050	2050	2050	2050	2050
Total UK Passengers	218	402	407	43	-4	-6	-28	5
Long haul	54	104	112	14	0	0	-6	8
Short haul	136	245	245	28	-4	-4	-20	0
Domestic	28	53	50	1	0	-2	-2	-3
Travel purpose:								
Business UK resident	19	42	42	4	-1	-1	-2	0
Business foreign resident	15	31	31	3	-1	-1	-1	0
Leisure foreign resident	35	64	61	5	-2	-1	-5	-3
Leisure UK resident	102	207	198	10	0	-1	-18	-9
Business Domestic	14	27	26	1	0	-1	-1	-1
Leisure Domestic	13	25	24	1	0	-1	-1	-1
International (I to I) transfers	20	6	25	19	0	0	0	19

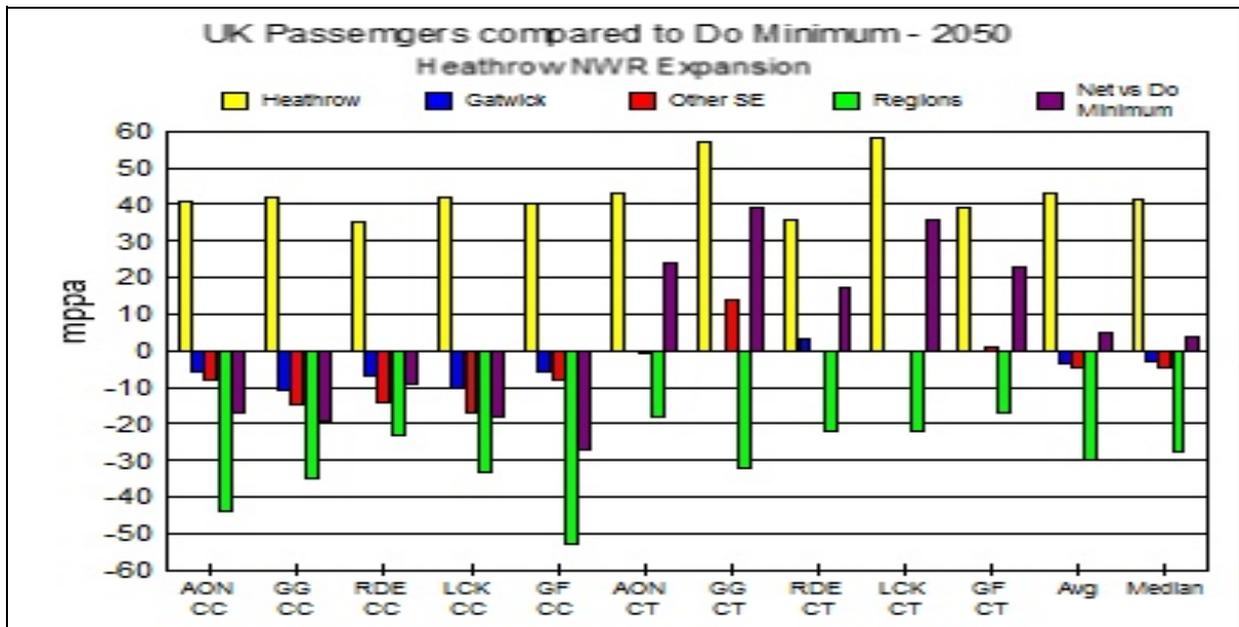
6. It is notable that segments that are potentially beneficial to the UK economy, namely business UK resident, business foreign resident and leisure foreign resident (tourists) are no better off with Heathrow's expansion. The leisure UK resident segment, which is said to act negatively on the UK balance of payments, is marginally reduced compared to the DM case. Long haul is potentially beneficial for business connectivity with emerging markets but it is shown to increase only marginally.
7. The figures in the above table are the average of the Commission's scenarios and it is important to examine the distribution around the average, as illustrated by the following chart. Each of the ten scenarios described in Annex 1 is shown with the average and median of all ten also shown on the right side of the chart. The red columns show the Total UK passengers in the DM case. The yellow columns show the totals with Heathrow expanded by the north west runway option and the green columns show the totals with Heathrow expanded by the extended runway option. Expansion of Gatwick is shown by the blue columns.



8. The Heathrow ENR option results are very similar to those for the NWR option and so are not discussed further.
9. The Gatwick 2R option generally results in slightly more Total UK passengers than the Heathrow option and is briefly discussed later.
10. The outcomes in 2030 and 2040 have also been examined, and while the demand is less in these years compared to 2050, there appear to be no discontinuities or other features that warrant additional comment here. The conclusions are broadly the same as those for the 2050 outcome.
11. Expanded annual capacity is around 150 mppa in the Heathrow NWR option. It is clear from the above table that servicing up to as many as 60 mppa additional passengers at Heathrow is largely the result of the re-distribution of passengers from other airports, particularly from the regions. This is further illustrated by the following chart.
12. The yellow columns show the additional Heathrow passengers in each of the ten scenarios in

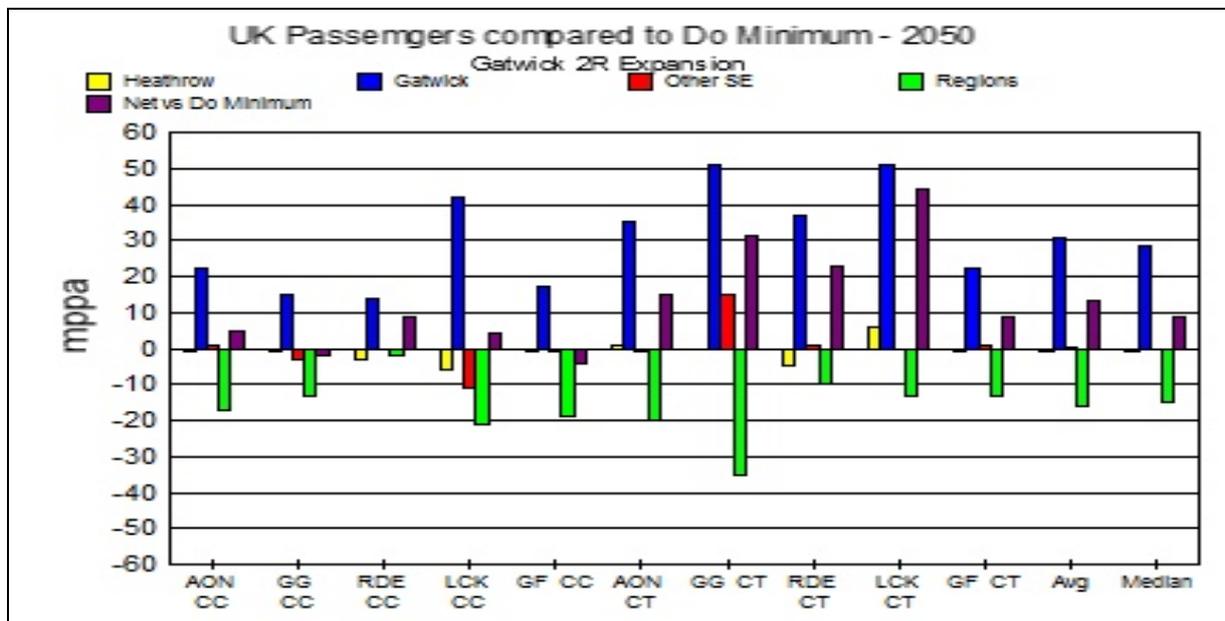
2050. But a major proportion of these passengers are offset by a reduction in the number of passengers at regional airports (the green columns). Gatwick (blue columns) and other southeast airports (red columns) also experience reduced numbers of passengers in the carbon capped scenarios.

- The net effect on Total UK passengers compared to the DM case is shown by the crimson columns. The net effect ranges between minus 27 mppa (GF CC case) and plus 38 mppa (GG CT case). It should be stressed this is an incremental analysis and a reduction is the result of a reduced growth rate rather than an absolute reduction compared to 2011.



- On an individual airport basis the expansion of Heathrow reduces the passengers in 2050 compared to the DM case by about 8% at Gatwick, 7% at other southeast airports and 15% at regional airports but there is considerable variation depending on the scenario. The loss at regional airports can be as high as 28%.
- The carbon capped scenarios appear to result in the greater re-distribution of passengers from the regions to Heathrow.
- The re-distribution of passenger growth to Heathrow from the regions is not a result of insufficient capacity at regional airports. This is discussed later in the section on Air traffic movements.
- There is possibly some “spill” from Heathrow to other airports and suppressed demand prior to expansion. But these market distortions, if they exist, should disperse within a few years of adding capacity and yet the re-distribution from other airports to Heathrow continues through to 2050.
- The forecast range of max-min passenger numbers is an indication of the uncertainty and risk and with Heathrow expansion the range at each airport increases, principally due to a reduction in the minimum number of passengers. This suggests an increased risk for the regional airports and one that is largely on the downside. Also, the range of outcomes is greater across the carbon traded cases compared to the carbon capped cases.

19. The Annexes provide the same detail for Gatwick as provided for Heathrow. But the Gatwick expansion is not the primary focus of this report so we have limited the discussion on Gatwick to the following chart which examines the incremental impact of Gatwick expansion compared to the DM case. The outcome in 2050 is similar to that for the Heathrow expansion described above but the net effect on Total UK passengers compared to the DM case, as shown by the crimson columns, ranges between minus 4 mppa and plus 44 mppa and on average the Total UK passengers rises by 13 mppa from 402 mppa in the DM case to 415 mppa. The overall impact on Total UK passengers is therefore slightly more positive than in the case of Heathrow



20. On an individual airport basis the expansion of Gatwick reduces the passengers in 2050 compared to the DM case by about 1% at Heathrow, 1% at other southeast airports and 8% at regional airports and there is less variation in range of outcomes than in the case of the Heathrow expansion, which indicates less risk. But in every scenario, demand growth is redistributed from the regions to Gatwick, although to a lesser extent than experienced with Heathrow's expansion.

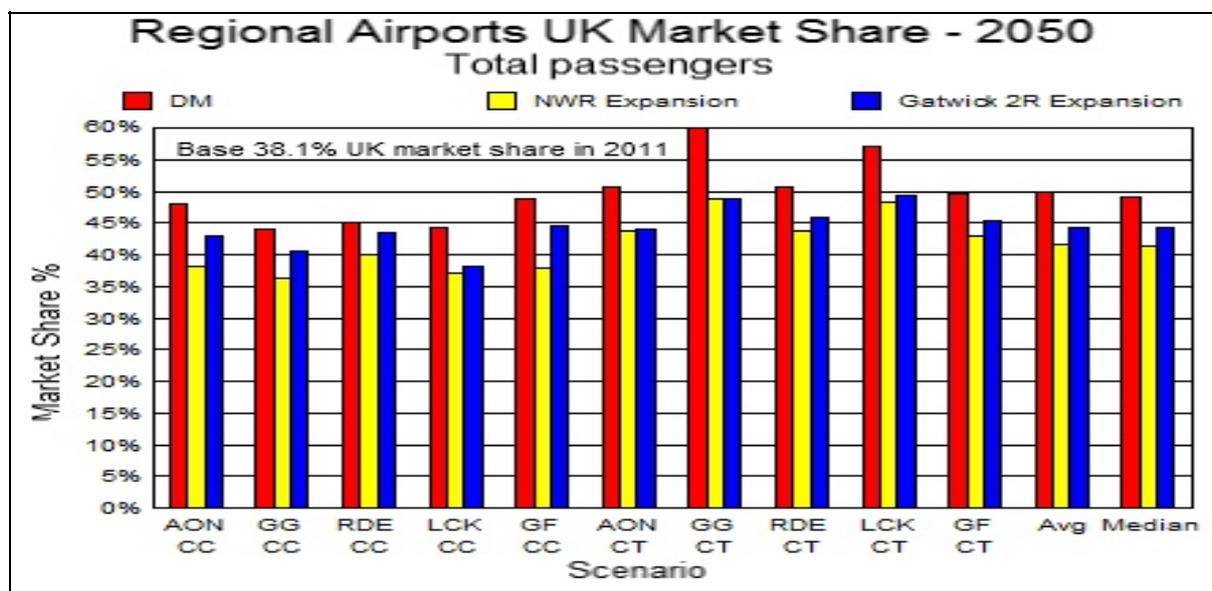
21. The expansion of Heathrow slightly reduces the passenger kilometres in the carbon capped scenarios and increases them in the carbon traded scenarios resulting in an overall increase of around 4% by 2050 on average across all scenarios and for the UK as a whole - see Annex 9. The UK legal limit for carbon emissions is 37.5 MTCO₂ in 2050. The Climate Change Committee estimate a passenger limit of 370 mppa in 2050 whereas the Commission estimate 389 mppa if the emissions are to not exceed the carbon limit. The carbon traded scenarios rely on trading to reduce the gross carbon emissions and it is questionable and not clear from the Commission's consultation to what extent this will be feasible.

UK MARKET SHARES

1. The tables and charts in this section are sourced from Annexes 4 and 5.
2. The following table shows the market share of Total UK passengers without expansion (do minimum case DM) and with an additional northwest runway at Heathrow. The figures for each airport or group of airports are the averages of the Commission's ten scenarios in each case.

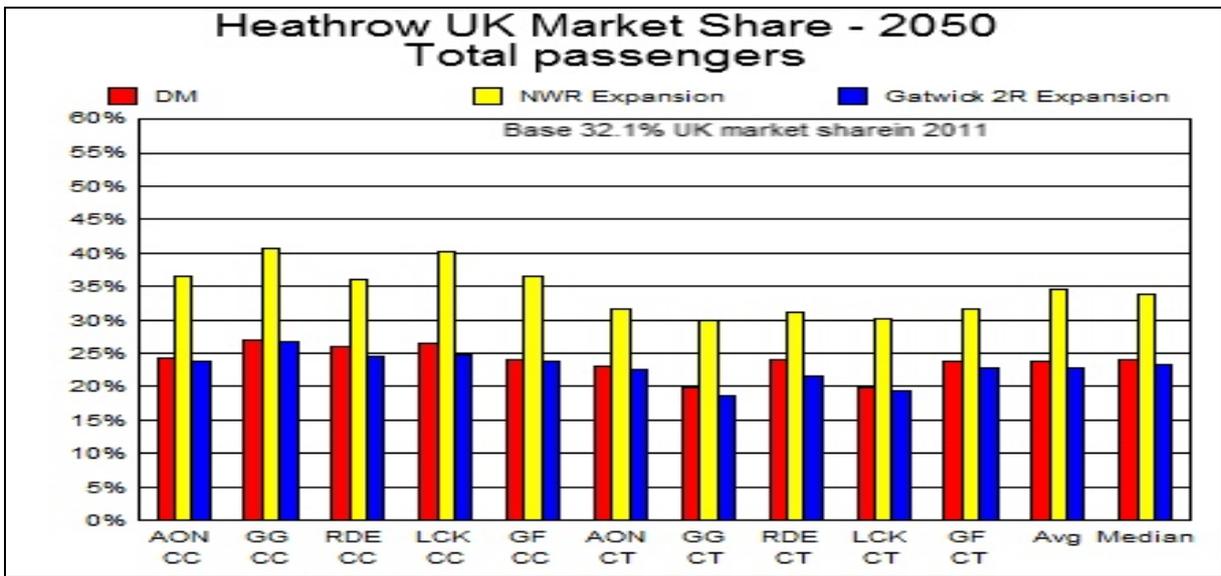
Market Share of Total UK Passengers (%)			
	Actual	DM No Expansion	NWR Expansion
Year	2011	2050	2050
Heathrow	32.1 %	23.8 %	34.5 %
Gatwick	15.6 %	11.5 %	10.4 %
Other southeast airports	14.2 %	14.9 %	13.4 %
Regional airports	38.1 %	49.8 %	41.7 %
Total UK	100%	100%	100%

1. Not surprisingly Heathrow's market share increases compared to the DM case. But the adverse impact on the regions is most notable. The DM case shows a rising regional share between 2011 and 2050, reaching nearly 50%. In itself this is not unexpected given the long term historical trend whereby the regional airports have increased their market share from 30.6% in 1972 to 38.1% in 2011. Many of these years were before capacity constraints at Heathrow and so it difficult to see this growth trend arising from passenger "spill" from a constrained Heathrow. The expansion of Heathrow results in a reversal in growth of the regional share.
2. The following chart shows the range of possible outcomes for the regions depending on

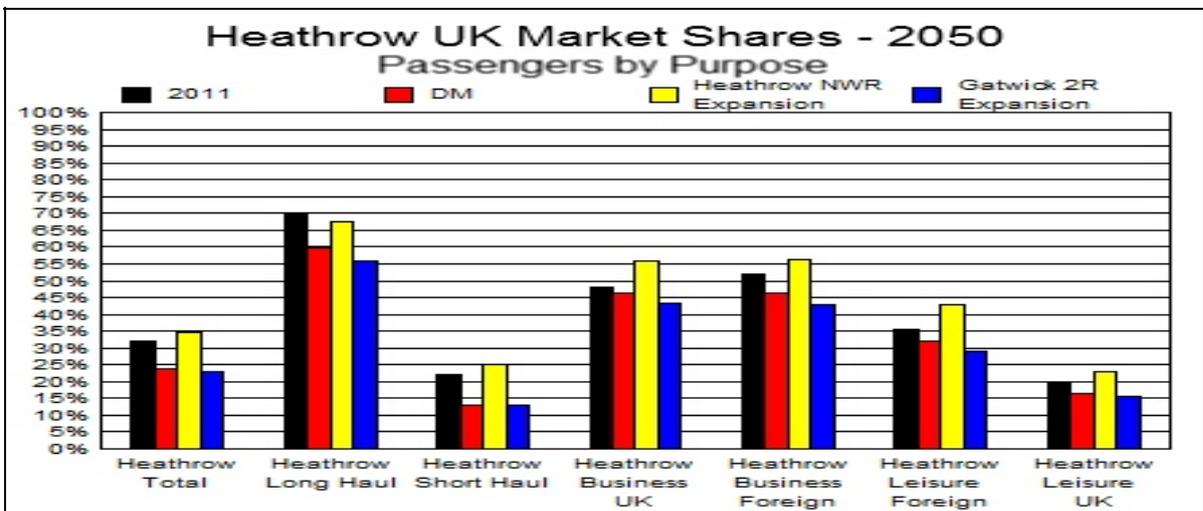


scenario. It can be seen that the regions could gain 60% of the UK passenger market in the GG CT scenario DM case but this and other possible outcomes are substantially held back by expansion at Heathrow and to a lesser extent by expansion at Gatwick as shown respectively by the yellow and blue columns.

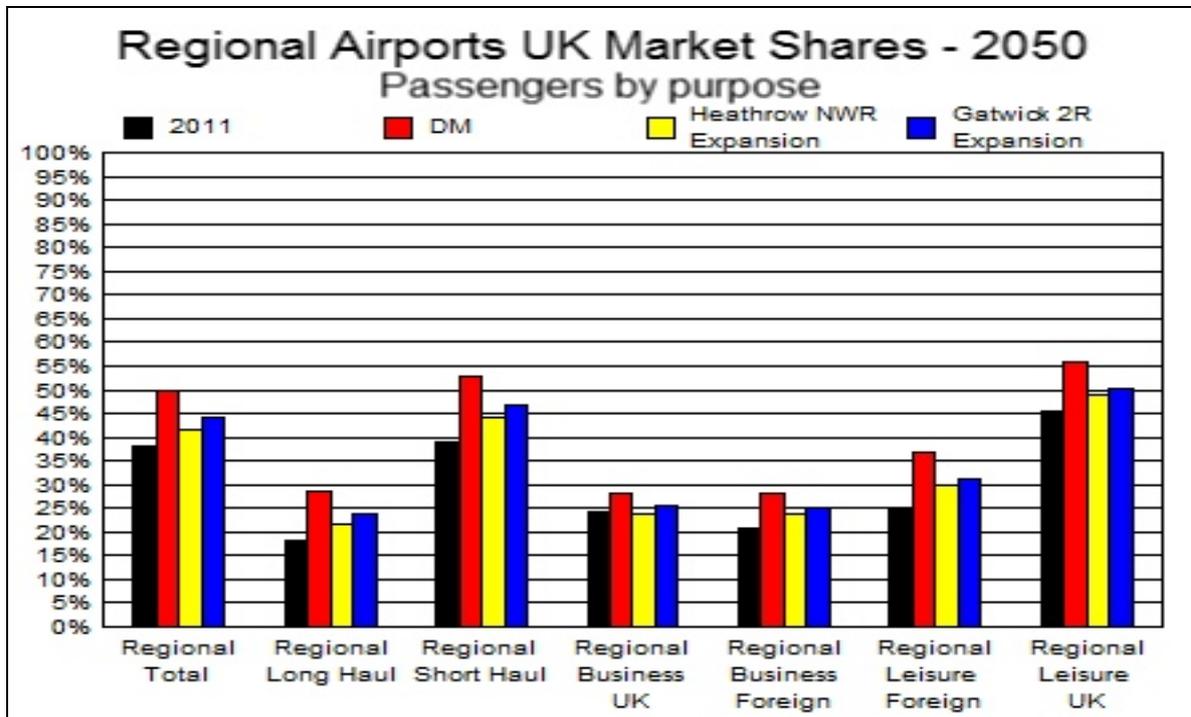
3. Heathrow’s market share of Total UK passengers in contrast could rise by 2050 to over 40% with a third runway as shown in the following chart. This is substantial concentration at a single airport and one which seems unlikely to serve the nation well - potentially stifling competition and regional economic growth, causing higher costs of airport access from a large Heathrow catchment area and increasing operational, commercial and financial risk.



4. Heathrow’s share of the various market segments is also important. The following chart illustrates the point. Heathrow already has a relatively high UK market share of long haul flights - 70% in 2011. But this could reduce to 60% in the DM case with regional airports picking up a greater share. Yet this is reversed were Heathrow to expand.



- The passenger segmentation at the regional airports in 2050 is shown by the following chart. If Heathrow were expanded there is no forecast improvement in the key segment that is beneficial to the regional economies, namely the business UK resident segment compared to the DM case. There is a reduction in the business foreign resident and leisure foreign resident (tourist) segments both of which contribute to the regional economies.



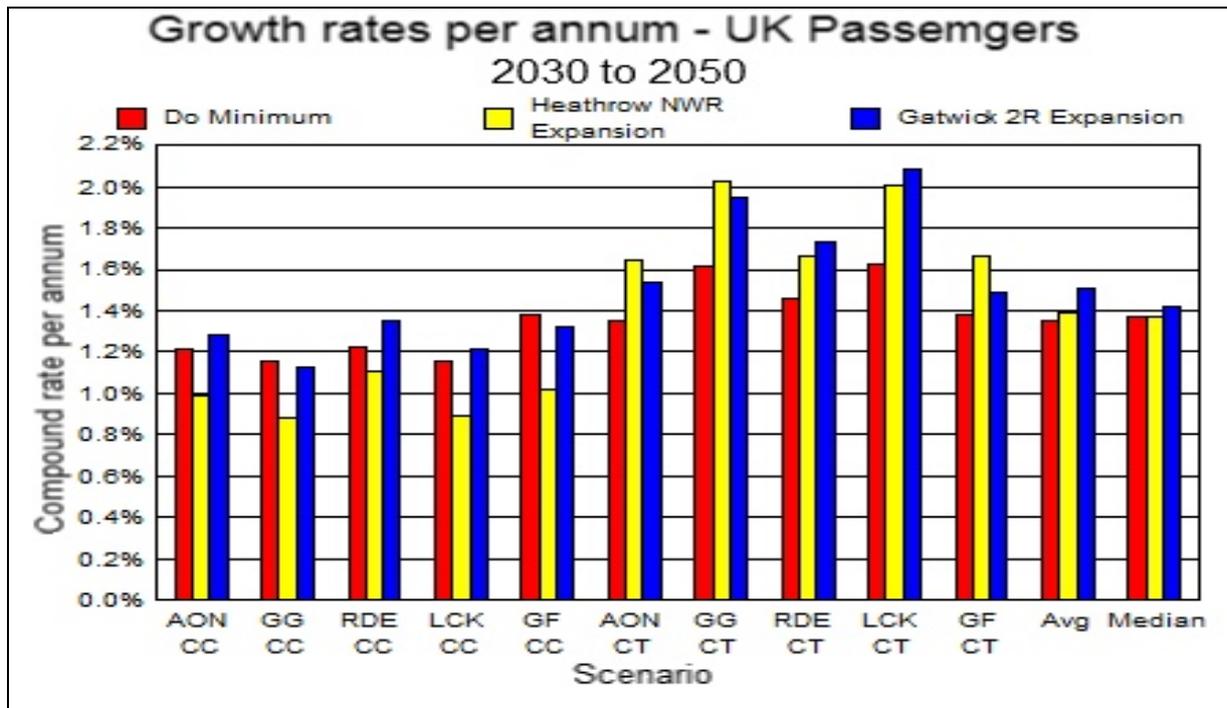
- Heathrow expansion results in Gatwick and other southeast airports all losing market share across all market segments apart from leisure travel by UK residents where the shares remain largely unchanged from the DM case. The Annexes illustrate the results.
- The market share outcome, should Gatwick be expanded, is more muted than is the case for Heathrow as can be seen from the above charts.

UK PASSENGER GROWTH RATES

1. The tables and charts in this section are sourced from Annex 6.
2. The following table details the compound growth rates in passenger numbers between 2030 and 2050 based on the forecasts made by the Commission. Data was not available from the dates of opening the new runways in the mid-2020s but this seems unlikely to materially alter the findings. Rates for the different market segments have been calculated.- long-haul/short haul split and purpose of travel. The figures are the average of the Commission's ten scenarios for each segment.

UK Passenger compound growth rates 2030 - 2305 (% per annum)		
	DM No expansion	NWR Expansion
<i>Year</i>	<i>2050</i>	<i>2050</i>
Total UK Passengers	1.4 %	1.4 %
Long haul	1.7 %	1.6 %
Short haul	1.2 %	1.1 %
<u>Travel purpose:</u>		
Business UK resident	2.1 %	2.1 %
Business foreign resident	1.9 %	1.9 %
Leisure foreign resident	1.3 %	1.2 %
Leisure UK resident	1.6 %	1.5 %
Business Domestic	1.5 %	1.5 %
Leisure Domestic	1.6 %	1.5 %
International transfers	-7.2 %	-1.8 %

3. The growth rate for Total UK passengers of 1.4% per annum between 2030 and 2050 in the DM case does not appear to change materially with Heathrow expansion. What is noticeable is how low this rate is compared with historic GDP growth. The GDP growth rate between 1954 and 2014 (60 years as considered in the consultation) was 2.45% per annum. The consultation report on Wider Impacts applies a long term steady state growth rate of 2.75% per annum which the report says is in line with HM Treasury's trend growth rate assumption for GDP.
4. The relatively low 1.4% rate suggests the aviation sector is not forecast to lead the growth of the UK economy, which adds further doubt as to whether there are economic benefits to the UK economy from expanding Heathrow.
5. The Total UK passenger growth rates range from 1.2% to 1.6% per annum in the DM case, as is shown in the following chart. In the Heathrow expansion case the rates for Total UK passengers range from 0.9% to 2.0%. The growth rate is reduced by Heathrow expansion in all carbon capped scenarios.



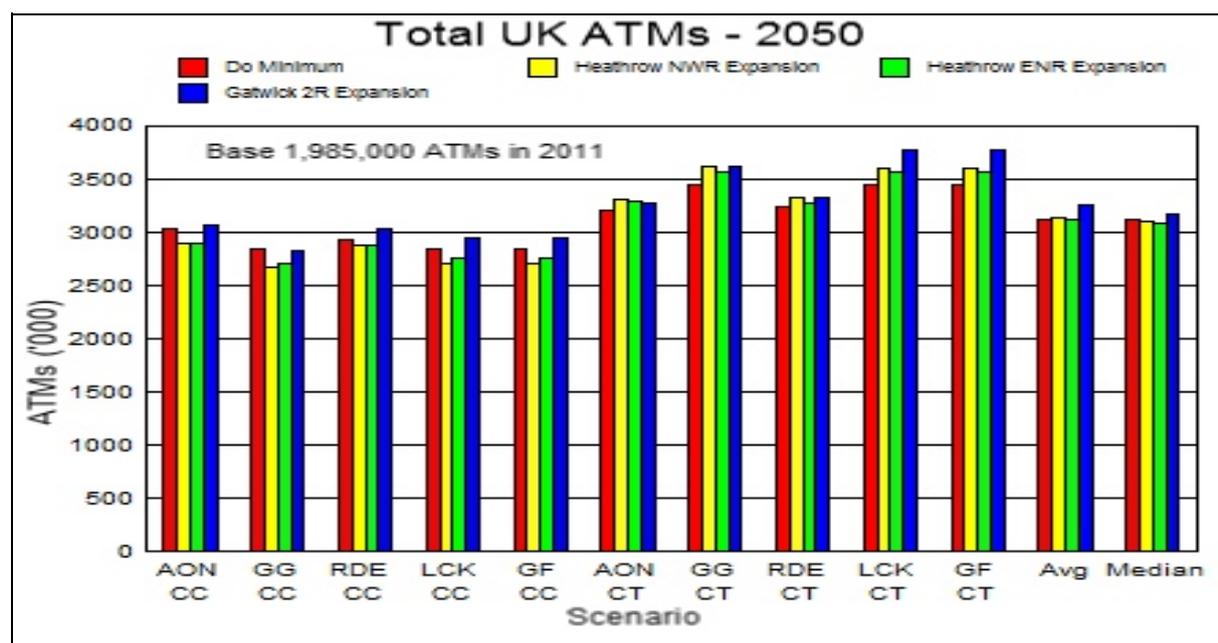
6. In most scenarios Gatwick' expansion results in slightly higher growth rates than in the case of Heathrow's expansion.

UK AIR TRANSPORT MOVEMENTS

1. The table and charts in this section are sourced from Annex 7.
2. The following table details the Total UK air transport movements (ATMs) in 2050 based on the forecasts made by the Commission. The figures are the average of the Commission's ten scenarios.

UK Air transport movements per annum ('000)								
	Actual	DM No expansion	NWR Expansion	NWR Expansion				
	Total	Total	Total	Incremental				
	UK	UK	UK	LHR	LGW	Other SE	Regions	Net change
Year	2011	2050	2050	2050	2050	2050	2050	2050
Total UK aircraft movements (ATMs)	1985	3131	3133	267	-20	-38	-207	2

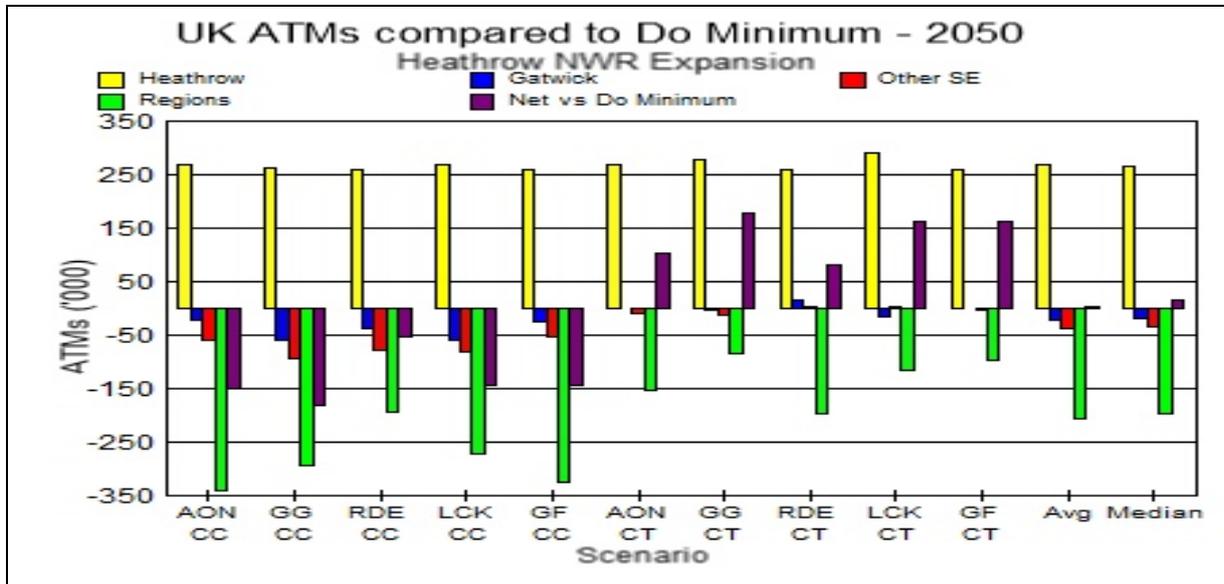
3. The outcome mirrors that for total UK passengers but the growth rate in ATMs is less on account of the trend towards larger planes and higher load factors.
4. The following chart shows the position in 2050 in a similar manner to that illustrated in the earlier section on UK passengers. It illustrates the average number of ATMs with and without expansion at Heathrow or Gatwick and the variation around the average depending on scenario.



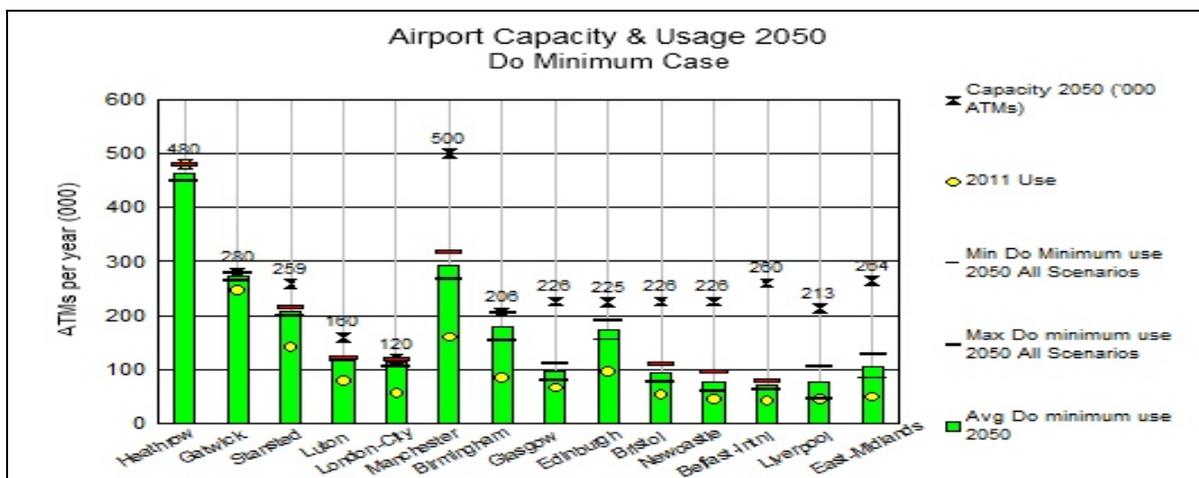
5. Expanding Heathrow increases the total UK ATMs by just 2,000 flights in 2050 from 3,131,000 to 3,133,000 flights. The increase of some 267,000 ATMs per annum at Heathrow is offset by ATM decreases at Gatwick of 20,000, 38,000 at other SE airports and 207,000 at regional airports. These

decreases arise through a decrease in growth and are not decreases measured against 2011.

- The figures in the above table are the average of the Commission's scenarios and it is important to examine the distribution around the average as illustrated by the following chart. The yellow columns show the additional Heathrow ATMs in each of the ten scenarios in 2050. But a major proportion of these ATMs are offset by a reduction in the number of ATMs at regional airports (the green columns). Gatwick (blue columns) and other southeast airports (red columns) also experience reduced numbers of ATMs in the carbon capped scenarios. The net change in ATMs is shown by the crimson columns.



- Expanded annual runway capacity is around 740,000 ATMs per annum in the Heathrow NWR option. It is clear from the above table and charts that providing for up to 260,000 additional ATMs at Heathrow is largely the result of the redistribution of ATMs from other airports, particularly from the regions.
- The substantial spare runway capacity in the regions in 2050 is illustrated in the following chart in the DM case and cannot be said to constrain growth of regional aviation.



DESTINATIONS

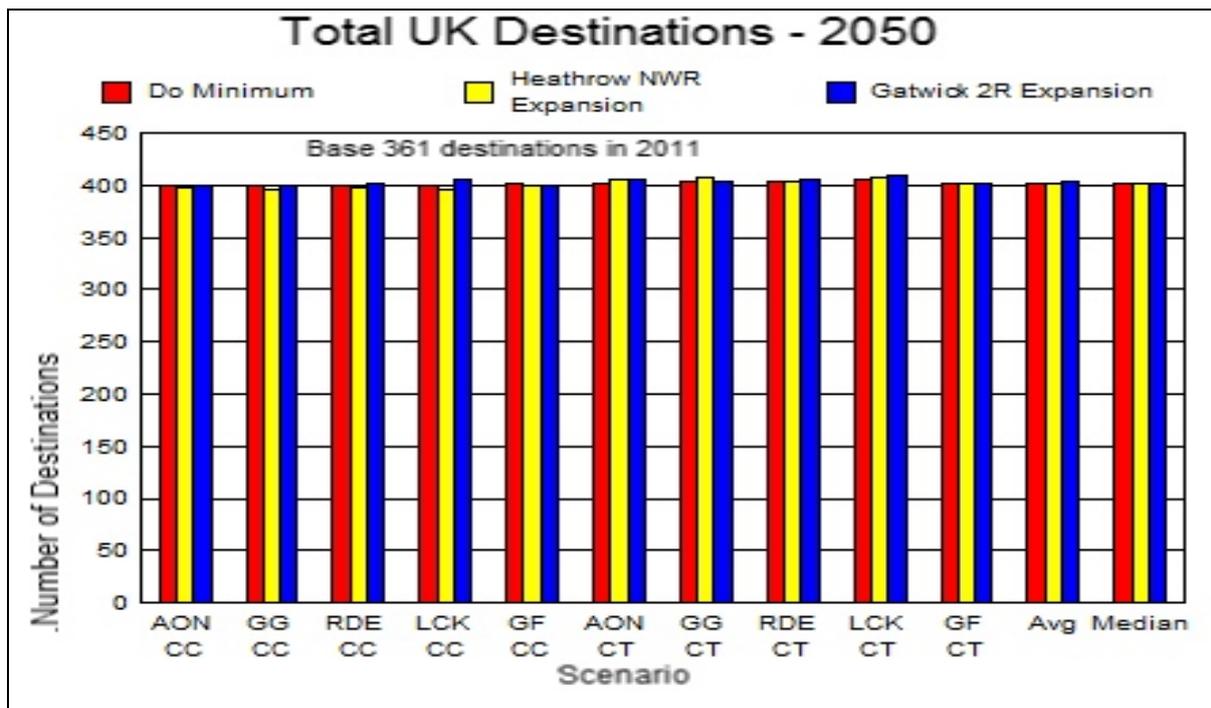
1. The tables and charts in this section are sourced from Annex 8.
2. The following table details the number of destinations in 2050 based on the forecasts made by the Commission. The total is sub-divided into All destinations, the long haul segment, those destinations served by at least one daily flight and long haul flights with at least one daily flight. The figures for All destinations and for each sub-section are the averages of the Commission’s ten scenarios in each case.
3. The outcome without expansion (do minimum case) is shown in the column headed DM. The Heathrow expansion case is shown in the column headed NWR. The Net increment between the two is analysed in respect of Heathrow (LHR), London airports and regional airports.
4. The figures are the number destinations and not routes. The number of routes and destinations at a single airport are the same. But when airports are grouped together for analysis there can be several routes to the same destination from different airports within the group. So the figures presented are not additive. This is the way the Commission provides the data.
5. No data is provided by the Commission separately for Gatwick in the Heathrow expansion case - but it is provided for the five London Airports, including Heathrow, as a group.

UK Destinations								
	Actual	DM No expansion	NWR Expansion	NWR Expansion				
	Total	Total	Total	Incremental				
	UK	UK	UK	LHR	LGW	London	Regions	Net change
<i>Year</i>	<i>2011</i>	<i>2050</i>	<i>2050</i>	<i>2050</i>	<i>2050</i>	<i>2050</i>	<i>2050</i>	<i>2050</i>
All destinations	361	402	401	58	na	6	-14	-1
All destinations - long-haul	107	130	132	7	na	3	-9	2
Daily destinations	192	244	256	46	na	16	-18	12
Daily destinations - long-Haul	61	84	91	10	na	7	-4	6

6. Expanding Heathrow reduces the Total UK destinations by one destination in 2050 from 402 to 401. Heathrow gains 58 destinations, and the regions lose 14 destinations. Since the figures are not additive (see above for the distinction between destination and route) it is not possible to attribute the net incremental change to any one airport or group of airports.
7. The daily destination analysis is slightly more positive but presumably there is an equal and opposite reduction in the number of thin routes, although in the absence of the data this has not been proven. Arguably thin routes are important because destinations to new emerging markets might often start out with less than a daily service. The implication, although not proven here,

is that the expansion of Heathrow will add frequency to the most popular routes which has been the case for many years, rather than adding connectivity to emerging markets.

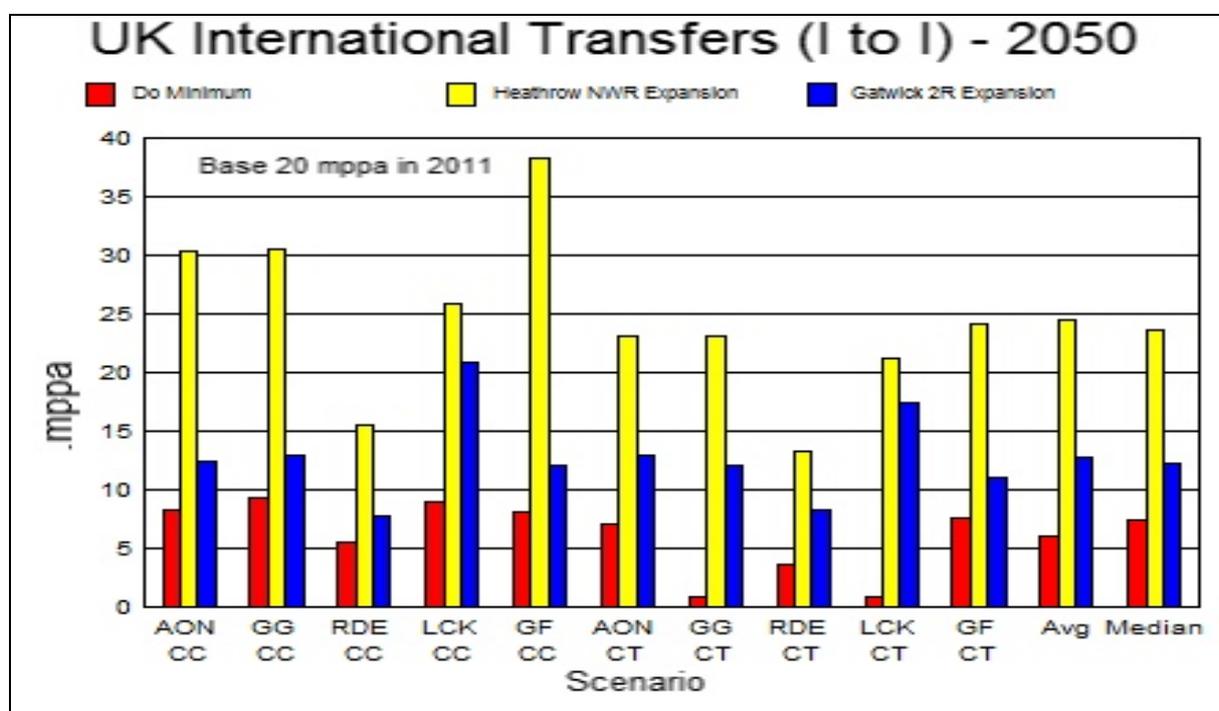
8. The Section on ATMs reports on there being no additional UK ATMs in 2050 as a result of Heathrow expansion. With a similar outcome on destinations the implication is that overall UK frequencies do not increase as a result of Heathrow expansion. So if neither the number of destinations nor the destination frequencies increase then any improvement in UK connectivity is questionable. It is appreciated underlying changes to destinations and frequencies are likely to occur.
9. The Total UK destinations are shown in the following chart where it can be seen that the scenarios make little difference to the outcome; it might be implied there is little dependency on the scenarios and little uncertainty in the outcome.



10. A matter of concern is the number of international transfers which were identified in the section on UK air passengers. The following table is extracted from the table in that section.

International (I to I) transfer passengers - million passengers per annum (mppa)								
	Actual	DM No expansion	NWR Expansion	NWR Expansion				
	Total	Total	Total	Incremental				
	UK	UK	UK	LHR	LGW	Other SE	Regions	Net change
Year	2011	2050	2050	2050	2050	2050	2050	2050
International (I to I) transfers	20	6	25	19	0	0	0	19

11. In the absence of Heathrow expansion the number of international transfers (in the UK but mostly at Heathrow) decreases from 20 mppa in 2011 to 6 mppa in 2050. The figures are the average of the Commission's ten scenarios. But with Heathrow expansion the international transfers rise to 25 mppa.
12. The variation in international transfers across all ten scenarios is illustrated in the following chart for the DM case and for expansion at Heathrow and expansion at Gatwick.



13. Heathrow served 18.1 mppa international transfers in 2011 or 91% of the UK total. The incremental increase of 19 mppa by 2050 in international passengers at Heathrow is a very large increase in demand and hence use of capacity compared to the DM case and in relation to a total increase of Heathrow passengers of between 40 and 60 mppa.
14. Transfer passengers do not leave the airside at Heathrow and while they contribute to the airline and airport profits their value is said to be in providing minimum aircraft loads for otherwise unviable routes or adding to route frequency. However, there are very few thin low frequency international routes from Heathrow that have any international transfers.
15. The following table covers the 70 lowest frequency services out of 181 international services from Heathrow in 2011. It shows that only 9 had transfers and only 7 of these were long haul. 37 of the low frequency services were long haul and had no transfers at all.

Heathrow thin destinations in 2011			
	Long haul	Short haul	Total
Destinations without International transfers	37	24	61
Destinations with International transfers	7	2	9
Total	44	26	70

16. The 7 low frequency long haul destinations with international transfers are shown in the following table. Even these destinations are not necessarily economically vulnerable if there were fewer or no transfers. For example, Islamabad, had relatively high loads of 333 passengers and if the 13 transfers per ATM were not available then it seems unlikely the service of once every 2 days would be at risk. In most of the other cases if there were no transfers there could be a service at least weekly.

Heathrow Low Frequency Long Haul Destinations with Transfers 2011							
	Destination	Distance km	Passengers '000 per yr.	Transfer passengers '000 per yr.	Transfer Passenger %	Frequency ATMs per day (Arr. & Dep.)	Aircraft Passenger Loads
USA	Raleigh	6218	111	48	43%	1.9	157
Argentina	Buenos Aires	11140	155	91	59%	1.9	220
USA	Phoenix	8465	179	104	58%	1.7	288
India	Chennai	8304	115	67	58%	1.4	220
India	Hyderabad	6391	96	76	79%	1.4	184
Uganda	Entebbe	6499	71	47	67%	1.4	137
Pakistan	Islamabad	6068	136	13	10%	1.1	333

Source: CAA

17. Instead, international transfers add frequency to the most popular routes and there is surely a question of diminishing returns as the frequency is increased. The following table illustrates the point.

Heathrow Highest Frequency International Destinations 2011							
Destination	Distance km	Passengers '000 per yr	Transfer passengers '000 per yr	Trnfrs	Frequency ATMs per day (Arr & Dep)	Aircraft Passenger Loads (Avg)	UK Airport Routes
Frankfurt Main	653	1470	244	17%	33.2	152	16
Amsterdam	370	1407	418	30%	34.4	112	27
New York (JFK)	5547	2679	893	33%	34.0	216	4
Dublin	449	1556	572	37%	33.5	127	28
Paris (CDG)	354	1272	457	36%	30.8	113	20

Source: CAA

18. New York JFK and Newark together have over 28 departures from Heathrow every day. Average loads were just 211 on flights to New York JFK in 2011, which is low compared to modern aircraft seating capacity. While accepting that frequency is important to connectivity there is a question of diminishing returns and efficient use of resources. Overall UK demand

is forecast to increase by around 1.8 times between 2011 and 2050 using an average of the scenarios. Details as to how this is distributed between destinations is not available but applying the multiple to New York would mean around 50 departures a day from Heathrow or one every 20 minutes over a 16 hour day.

End

Glossary and Abbreviations

ATM	Air transport Movement
Carbon-capped CC	Modelling scenario where CO2 emissions are limited to 2005 levels through both an ETS and higher carbon prices
Carbon-traded CT	Modelling scenarios where CO2 emissions are part of an Emissions Trading Scheme
Do Minimum (DM)	The option of adding no new runway capacity as assessed in the Airports Commission's Interim Report 2013
ENR	Heathrow's Extended Runway Option
HH	Heathrow Hub Limited, the promoter of the Heathrow Airport Extended Northern Runway Option
HAL	Heathrow Airport Limited, the promoter of the Heathrow Airport North West Runway Option
I to I	International to International interliners, i.e. passengers who are transferring via a UK airport with their origin and destination outside the UK
LGW 2R	Gatwick Airport Second Runway, the option promoted by Gatwick Airport Limited
NWR	Heathrow's North West Runway Option
mppa	Million passengers per annum

Airports Commission Future Scenarios

Assessment of Need AON	Future demand is primarily determined by central projections published by sources such as the Office for Budgetary Responsibility, OECD and IMF.
Global Growth GG	This scenario sees higher global growth in demand for air travel. It adopts higher GDP growth forecasts for all world regions, coupled with lower operating costs.

Relative Decline of Europe
RDE

This scenario sees higher relative growth of passenger demand in emerging economies in the future compared to the growth in the developed world. It adopts higher GDP growth rates for newly industrialised and developing countries, and a strengthened position of Far and Middle Eastern aviation hubs and airlines.

Low-cost is king
LCK

This scenario sees the low-cost carriers strengthening their position in the short-haul market and capturing a substantial share of the long-haul market. As with the *global growth* scenario, it also sees GDP growth rates for all world regions and lower operating costs, resulting in higher passenger demand growth rates.

Global fragmentation GF

This scenario sees economies close themselves off by adopting more conditional and interventionist national policies. As a result, there is a decline in GDP growth rates for all world regions, coupled with higher operating costs. This results in lower passenger demand growth rates.

UK PASSENGERS WITH & WITHOUT EXPANSION - PURPOSE OF TRAVEL

		Incremental Analysis										Incremental Analysis																		
		NWR Expansion					Gatwick Expansion					NWR Expansion					Gatwick Expansion													
		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050				
		LHR	LGW	Other SE	Regions	net	LHR	LGW	Other SE	Regions	net	LHR	LGW	Other SE	Regions	net	LHR	LGW	Other SE	Regions	net	LHR	LGW	Other SE	Regions	net				
Business UK resident	2011	DM	Expansion			NWR Expansion					Gatwick Expansion					DM	Expansion			NWR Expansion					Gatwick Expansion					
Scenario:		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050			
AON CC	18.9	40	39	40	4	-1	-1	-2	-1	-1	3	-0	-1	0	26	24	26	1	0	-1	-2	-2	-0	0	-0	-0	-0			
GG CC		47	46	47	5	-2	-2	-2	-1	-1	2	-1	-1	0	26	24	26	1	0	-1	-2	-2	-0	0	-0	-1	-1			
RDE CC		43	43	44	4	-1	-2	-1	-0	-1	1	0	-0	1	25	24	25	0	0	-1	-1	-1	-1	0	0	-0	-0			
LCK CC		47	46	47	5	-2	-2	-2	-1	-1	4	-1	-1	0	26	24	24	1	0	-1	-2	-2	-0	3	-3	-2	-2			
GF CC		33	32	33	3	-1	-0	-2	-1	-0	2	0	-1	0	24	20	23	1	0	-1	-4	-4	-0	0	-0	-1	-1			
AON CT		40	41	41	4	-1	-1	-2	1	-1	3	-1	-1	1	28	28	28	1	0	-1	-0	0	-0	1	-0	0	0			
GG CT		48	49	50	4	-1	-1	-2	1	-2	5	-0	-1	1	32	32	32	1	-0	-1	-0	0	0	1	-0	0	0			
RDE CT		44	45	45	4	-1	-1	-2	1	-2	3	-0	-1	1	28	28	28	1	0	-1	-0	0	-0	1	-1	0	0			
LCK CT		48	49	50	4	-1	-1	-1	1	-2	4	0	-0	2	32	32	32	1	-0	-0	-0	0	-0	2	-2	-0	-0			
GF CT		33	34	34	3	-1	-0	-1	0	-1	2	-0	-1	0	25	25	25	1	0	-1	-0	0	-0	0	-0	-0	0			
Avg		42	42	43	4	-1	-1	-2	-0	-1	3	-0	-1	1	27	26	27	1	0	0	-1	-1	-0	1	-1	-0	-0			
Median		44	44	44	4	-1	-1	-2	0	-1	3	-0	-1	0	26	25	26	1	0	-1	-1	-1	-0	1	-0	-0	-0			
Business foreign resid	2011	DM	Expansion			NWR Expansion					Gatwick Expansion					DM	Expansion			NWR Expansion					Gatwick Expansion					
Scenario:		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050			
AON CC	14.4	29	28	29	3	-1	-1	-2	-1	-1	2	-0	-1	0	25	22	25	1	0	-2	-2	-3	0	1	-1	-0	-0			
GG CC		34	33	33	4	-1	-2	-1	-1	-1	2	-1	-1	-0	23	20	23	0	0	-1	-2	-3	0	1	-0	-0	-0			
RDE CC		32	32	33	3	-1	-1	-1	-0	-0	1	0	-0	1	24	23	24	0	1	-1	-1	-1	-0	1	-0	-0	-0			
LCK CC		33	33	35	4	-1	-2	-1	-1	-1	3	-1	-1	1	23	21	21	0	0	-1	-2	-2	-0	1	-1	-2	-2			
GF CC		25	24	25	2	-1	-0	-2	-1	-1	1	0	-1	-0	24	19	23	0	0	-1	-4	-5	-0	1	-1	-1	-1			
AON CT		29	30	29	3	-1	-1	-1	0	-1	3	-1	-1	0	27	27	27	1	1	-1	-0	0	0	1	-1	-0	0			
GG CT		36	36	36	3	-1	-1	-1	0	-2	3	-1	-1	0	29	30	30	1	-0	-0	0	1	0	1	-0	0	1			
RDE CT		33	33	34	3	-1	-1	-1	0	-1	3	-0	-1	1	27	27	27	1	1	-1	-0	0	0	2	-1	-0	0			
LCK CT		35	36	37	3	-1	-1	-1	0	-2	3	1	-0	2	29	30	30	0	-0	0	1	1	0	1	-1	0	0			
GF CT		25	25	25	2	-1	-1	-1	0	-1	1	0	-1	0	24	25	25	1	0	-1	0	1	-0	1	-0	0	1			
Avg		31	31	32	3	-1	-1	-1	-0	-1	2	-0	-1	1	25	24	25	1	0	-1	-1	-1	-0	1	-1	-0	-0			
Median		32	32	33	3	-1	-1	-1	-0	-1	2	-0	-1	0	25	24	25	0	0	-1	-1	-1	0	1	-1	-0	0			
Leisure foreign resider	2011	DM	Expansion			NWR Expansion					Gatwick Expansion					Intrntl (1 to 0) Transfers	DM	Expansion			NWR Expansion					Gatwick Expansion				
Scenario:		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2011	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050		
AON CC	35.3	59	52	59	4	-2	-2	-7	-7	-1	5	-0	-3	0	8	30	12	22	0	0	0	22	3	1	0	0	4			
GG CC		54	47	53	4	-3	-3	-5	-7	-1	3	-1	-2	-1	9	31	13	21	0	0	0	21	3	1	0	0	4			
RDE CC		59	56	63	5	-3	-3	-3	-3	-0	3	1	0	4	6	16	8	10	0	0	0	10	2	1	0	-0	2			
LCK CC		54	48	57	5	-3	-4	-5	-6	-3	9	-1	-2	2	9	26	21	17	0	0	0	17	2	9	0	0	12			
GF CC		62	52	60	2	-2	-2	-8	-10	-1	3	1	-4	-1	8	38	12	30	0	0	-0	30	3	0	0	-0	4			
AON CT		64	65	65	6	-1	-0	-4	1	-1	7	-1	-4	2	7	23	13	16	0	0	0	16	5	1	0	0	6			
GG CT		75	78	78	8	-0	0	-5	3	-3	11	-0	-5	3	1	23	12	22	0	0	0	22	8	3	0	0	11			
RDE CT		68	69	74	6	-0	-0	-5	1	-2	9	1	-1	6	4	13	8	9	0	0	0	10	2	2	0	0	5			
LCK CT		75	78	83	9	-1	-0	-6	2	-1	9	2	-2	7	1	21	17	20	0	0	0	20	8	9	0	0	17			
GF CT		63	64	63	6	-0	-1	-4	1	-1	4	1	-3	1	8	24	11	17	0	0	-0	17	3	0	0	-0	4			
Avg		63	61	66	5	-2	-1	-5	-2	-1	6	0	-3	2	6	25	13	18	0	0	0	19	4	3	0	0	7			
Median		62	60	63	6	-2	-1	-5	-1	-1	6	0	-3	2	7	24	12	18	0	0	0	19	3	1	0	0	4			
Leisure UK resident	2011	DM	Expansion			NWR Expansion					Gatwick Expansion					Total UK Passengers	DM	Expansion			NWR Expansion					Gatwick Expansion				
Scenario:		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2011	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050		
AON CC	101.3	198	173	199	7	-2	-2	-28	-26	-2	11	2	-11	1	386	369	391	41	-6	-9	-44	-17	-1	23	0	-17	5			
GG CC		168	142	164	7	-5	-7	-22	-26	-1	7	-1	-9	-4	361	342	359	42	-10	-16	-35	-19	-0	15	-3	-14	-2			
RDE CC		185	173	187	12	-3	-6	-15	-12	-2	6	-0	-2	2	374	365	383	35	-7	-14	-23	-9	-3	14	1	-2	9			
LCK CC		168	146	160	10	-5	-7	-20	-22	-4	13	-4	-13	-8	361	343	365	42	-11	-17	-32	-17	-7	42	-11	-20	4			
GF CC		217	180	212	2	-3	-2	-33	-36	-2	10	-1	-12	-4	393	366	389	40	-6	-8	-53	-27	-1	17	-0	-19	-4			
AON CT		216	222	223	12	1	4	-10	6	-1	18	2	-12	7	411	436	426	43	-1	-0	-17	25	1	34	-1	-19	15			
GG CT		236	248	251	18	2	3	-11	12	-2	28	2	-14	15	457	496	488	57	1	0	-19	39	0	51	1	-21	31			
RDE CT		215	220	224	12	3	4	-14	5	-3	17	2	-8	9	418	435	440	36	3	0	-22	17	-5	37	0	-10	22			
LCK CT		237	248	254	20	3	2	-14	11	3	23	1	-10	17	458	494	502	58	0	0	-22	37	6	51	0	-13	44			
GF CT		220	224	223	10	1	3	-10	4	-1	13	0	-8	4	397	420	406	39	0	0	-16	23	-1	22	1	-13	9			
Avg		206	198	210	11	-1	-1	-18	-8	-1	15	0	-10	4	401	407	415	43	-4	-6	-28	5	-1	31	-1	-15	14			
Median		216	200	217	11	-1	-0	-15	-4	-2	13	0	-11	3	395	394	398	42	-3	-4	-23	4	-1	29	0	-15	9			

UK PASSENGER MARKET SHARES - PURPOSE OF TRAVEL

Scenario:	Business UK resident				Passengers % of Total UK				Leisure Foreign resident				Leisure UK resident					
	DM		Expansion		DM		Expansion		DM		Expansion		DM		Expansion			
	2011	2050	2050	2050	2011	2050	2050	2050	2011	2050	2050	2050	2011	2050	2050	2050		
Heathrow																		
<u>Scenario:</u>			NWR	LGW			NWR	LGW			NWR	LGW			NWR	LGW		
AON CC	48.1%	45.1%	56.5%	43.1%	52.1%	44.8%	56.5%	42.3%	35.7%	32.3%	44.0%	30.5%	20.0%	17.4%	23.9%	16.5%		
GG CC	48.1%	59.7%	46.9%	47.8%	60.1%	46.1%	49.4%	59.4%	46.5%	35.6%	48.9%	34.8%	17.2%	25.6%	17.1%			
RDE CC	48.6%	58.3%	45.8%	49.4%	59.4%	46.5%	47.6%	61.0%	43.8%	34.2%	46.1%	31.5%	17.4%	25.7%	16.5%			
LCK CC	47.9%	60.3%	45.4%	47.6%	61.0%	43.8%	46.4%	55.8%	44.5%	35.4%	50.4%	28.7%	17.1%	26.6%	15.3%			
GF CC	45.9%	55.1%	44.4%	46.4%	55.8%	44.5%	44.0%	53.9%	41.4%	31.6%	41.1%	30.3%	18.0%	22.9%	17.4%			
AON CT	44.3%	53.5%	42.1%	44.0%	53.9%	41.4%	45.1%	53.1%	40.6%	30.9%	39.8%	28.9%	16.9%	21.6%	15.9%			
GG CT	45.0%	52.7%	40.2%	45.1%	53.1%	40.6%	48.0%	56.8%	43.5%	27.6%	36.4%	23.4%	12.9%	19.5%	11.4%			
RDE CT	47.2%	55.0%	43.0%	48.0%	56.8%	43.5%	44.6%	52.9%	38.2%	33.1%	41.5%	27.4%	16.8%	21.9%	15.0%			
LCK CT	45.0%	52.4%	39.4%	44.6%	52.9%	38.2%	46.2%	54.6%	43.4%	27.4%	38.6%	23.8%	13.0%	20.6%	13.3%			
GF CT	45.8%	53.4%	43.3%	46.2%	54.6%	43.4%				31.4%	39.6%	29.4%	17.9%	22.2%	17.0%			
Avg	48.1%	46.3%	55.7%	43.4%	52.1%	46.4%	56.4%	43.0%	35.7%	31.9%	42.6%	28.9%	20.0%	16.4%	23.0%	15.5%		
Median	48.1%	45.9%	55.1%	43.2%	52.1%	46.3%	56.2%	43.5%	35.7%	31.9%	41.3%	29.2%	20.0%	17.2%	22.5%	16.2%		
Gatwick																		
<u>Scenario:</u>			NWR	LGW			NWR	LGW			NWR	LGW			NWR	LGW		
AON CC	12.2%	11.7%	8.9%	17.8%	11.1%	10.7%	7.4%	17.9%	19.3%	13.8%	11.6%	21.8%	19.7%	14.3%	15.1%	19.9%		
GG CC	12.2%	8.8%	16.4%	11.3%	7.1%	16.5%	11.6%	8.2%	15.0%	14.0%	10.2%	19.1%	15.1%	14.5%	19.6%			
RDE CC	12.5%	9.8%	15.6%	11.6%	8.2%	15.0%	11.4%	7.0%	20.5%	15.2%	11.6%	19.5%	14.6%	13.8%	17.4%			
LCK CC	12.2%	8.9%	20.0%	11.4%	7.0%	20.5%	10.9%	7.1%	14.6%	14.0%	9.1%	29.0%	14.9%	13.9%	23.8%			
GF CC	10.9%	8.7%	15.9%	10.1%	7.1%	14.6%	11.1%	9.0%	19.0%	13.3%	11.8%	18.2%	13.5%	14.6%	18.6%			
AON CT	11.1%	9.0%	19.0%	10.2%	7.7%	19.3%	10.3%	8.5%	18.2%	13.2%	11.9%	24.2%	13.7%	13.7%	21.2%			
GG CT	10.3%	8.5%	19.1%	9.6%	7.9%	19.0%	10.3%	8.5%	18.2%	11.7%	10.9%	25.2%	10.6%	11.0%	21.1%			
RDE CT	11.3%	10.1%	18.5%	10.3%	8.5%	18.2%	10.2%	8.1%	17.9%	12.6%	12.3%	23.9%	12.4%	13.6%	19.4%			
LCK CT	10.3%	8.3%	17.6%	10.2%	8.1%	17.9%	10.0%	7.6%	15.7%	12.0%	10.2%	21.4%	10.4%	11.1%	18.9%			
GF CT	10.8%	9.0%	17.0%	10.0%	7.6%	15.7%				13.1%	12.3%	19.0%	13.4%	13.7%	19.0%			
Avg	12.2%	11.3%	9.0%	17.7%	11.1%	10.5%	7.7%	17.5%	19.3%	13.3%	11.2%	22.1%	19.7%	13.3%	13.5%	19.9%		
Median	12.2%	11.2%	8.9%	17.7%	11.1%	10.3%	7.7%	17.9%	19.3%	13.2%	11.6%	21.6%	19.7%	13.6%	13.8%	19.5%		
Other Southeast																		
<u>Scenario:</u>			NWR	LGW			NWR	LGW			NWR	LGW			NWR	LGW		
AON CC	15.3%	15.2%	12.5%	14.6%	16.0%	15.9%	13.1%	14.8%	19.8%	18.9%	17.6%	18.3%	14.7%	15.0%	16.0%	15.9%		
GG CC	15.0%	10.9%	13.9%	15.8%	11.7%	14.4%	14.4%	10.4%	14.7%	19.2%	15.3%	18.1%	17.1%	15.6%	17.0%			
RDE CC	13.9%	10.3%	14.4%	14.4%	10.4%	14.7%	15.6%	10.4%	13.3%	18.9%	14.7%	18.5%	16.7%	14.3%	16.5%			
LCK CC	14.7%	9.8%	12.3%	15.6%	10.4%	13.3%	14.5%	10.4%	13.3%	19.3%	14.5%	16.0%	17.3%	15.1%	15.8%			
GF CC	14.2%	13.3%	14.4%	14.5%	13.8%	15.4%	14.2%	12.2%	13.1%	19.4%	19.3%	21.0%	14.8%	16.5%	14.8%			
AON CT	14.9%	12.2%	13.1%	16.0%	12.8%	13.2%	14.9%	11.4%	12.9%	18.0%	17.4%	16.3%	13.5%	14.8%	14.1%			
GG CT	13.4%	11.4%	12.9%	14.9%	12.1%	13.2%	13.4%	11.2%	12.5%	15.9%	15.6%	15.0%	11.3%	11.9%	11.6%			
RDE CT	13.4%	11.2%	12.5%	14.0%	11.2%	13.2%	13.8%	11.9%	14.0%	16.8%	15.9%	16.4%	13.5%	14.9%	13.9%			
LCK CT	13.8%	11.9%	14.0%	15.0%	12.3%	16.0%	14.2%	12.8%	13.7%	15.7%	15.1%	16.5%	11.3%	11.6%	10.7%			
GF CT	14.2%	12.8%	13.7%	14.9%	12.9%	14.9%				19.5%	18.2%	20.5%	14.3%	15.3%	14.2%			
Avg	15.3%	14.3%	11.6%	13.6%	16.0%	15.1%	12.0%	14.3%	19.8%	18.2%	16.4%	17.7%	14.7%	14.5%	14.6%	14.5%		
Median	15.3%	14.2%	11.7%	13.8%	16.0%	15.0%	12.2%	14.5%	19.8%	18.9%	15.7%	17.3%	14.7%	14.6%	15.0%	14.5%		
Regions																		
<u>Scenario:</u>			NWR	LGW			NWR	LGW			NWR	LGW			NWR	LGW		
AON CC	24.3%	27.9%	22.1%	24.5%	20.8%	28.6%	23.0%	25.1%	25.2%	35.0%	26.7%	29.4%	45.5%	53.4%	45.0%	47.6%		
GG CC	24.8%	20.6%	22.8%	25.1%	21.2%	23.1%	24.7%	22.0%	23.7%	31.2%	25.6%	28.0%	50.6%	44.3%	46.2%			
RDE CC	25.0%	21.7%	24.3%	24.7%	22.0%	23.7%	25.2%	20.9%	22.3%	31.7%	27.6%	30.4%	51.2%	46.1%	49.7%			
LCK CC	25.2%	20.9%	22.3%	25.4%	21.6%	22.5%	29.0%	23.3%	25.5%	31.3%	25.9%	26.2%	50.7%	44.3%	45.1%			
GF CC	29.0%	22.9%	25.2%	29.0%	23.3%	25.5%	29.7%	25.6%	26.1%	35.8%	27.8%	30.5%	53.7%	46.0%	49.2%			
AON CT	29.7%	25.3%	25.8%	29.7%	25.6%	26.1%	31.2%	27.4%	27.9%	38.0%	31.0%	30.6%	56.0%	50.0%	48.8%			
GG CT	31.2%	27.4%	27.9%	30.4%	27.0%	27.2%	28.1%	23.7%	26.1%	44.8%	37.1%	36.5%	65.2%	57.6%	55.9%			
RDE CT	28.1%	23.7%	26.1%	27.7%	23.6%	25.0%	30.8%	27.3%	29.0%	37.5%	30.2%	32.3%	57.4%	49.7%	51.7%			
LCK CT	30.8%	27.3%	29.0%	30.2%	26.6%	27.9%	29.2%	24.8%	26.0%	45.0%	36.2%	38.3%	65.4%	56.7%	57.0%			
GF CT	29.2%	24.8%	26.0%	28.9%	24.9%	26.1%				36.0%	29.9%	31.1%	54.4%	48.8%	49.7%			
Avg	24.3%	28.1%	23.7%	25.4%	20.8%	28.0%	23.9%	25.2%	25.2%	36.6%	29.8%	31.3%	45.5%	55.8%	48.9%	50.1%		
Median	24.3%	28.6%	23.3%	25.5%	20.8%	28.8%	23.4%	25.3%	25.2%	35.9%	28.8%	30.5%	45.5%	54.1%	47.5%	49.4%		

UK PASSENGER MARKET SHARES - LONG HAUL-SHORT HAUL SPLIT

ANNEX 5

Scenario:	TOTAL Passengers				Passengers % of Total UK				Short Haul Passengers			
	2011	2050	Expansion		2011	2050	Expansion		2011	2050	Expansion	
			DM	NWR			DM	NWR			DM	NWR
Heathrow												
Scenario:												
AON CC	32.1%	24.4%	36.6%	23.8%	69.6%	63.5%	71.0%	62.3%	22.2%	13.2%	27.1%	12.5%
GG CC		26.9%	40.6%	26.7%		63.7%	72.9%	63.7%		13.9%	30.1%	13.8%
RDE CC		25.9%	36.2%	24.5%		59.7%	62.2%	57.2%		15.2%	30.2%	14.8%
LCK CC		26.6%	40.2%	24.7%		63.7%	70.4%	44.7%		13.8%	31.7%	18.1%
GF CC		23.9%	36.6%	23.9%		62.8%	73.1%	63.8%		14.4%	26.5%	13.7%
AON CT		23.1%	31.7%	22.5%		62.0%	67.7%	61.1%		12.2%	21.8%	11.4%
GG CT		19.9%	29.8%	18.6%		49.3%	65.9%	43.3%		10.7%	17.9%	11.2%
RDE CT		23.9%	31.3%	21.5%		59.2%	59.4%	53.4%		13.2%	24.2%	12.2%
LCK CT		19.9%	30.2%	19.3%		50.6%	64.1%	44.2%		10.1%	19.9%	11.1%
GF CT		23.7%	31.7%	22.9%		62.3%	68.2%	63.6%		14.1%	22.9%	12.6%
Avg	32.1%	23.8%	34.5%	22.9%	69.6%	59.7%	67.5%	55.7%	22.2%	13.1%	25.2%	13.2%
Median	32.1%	23.9%	33.9%	23.3%	69.6%	62.2%	67.9%	59.1%	22.2%	13.5%	25.4%	12.6%
Gatwick												
Scenario:												
AON CC	15.6%	12.2%	11.1%	17.6%	12.0%	10.9%	8.9%	11.8%	18.6%	14.2%	13.1%	22.5%
GG CC		12.5%	9.9%	16.7%		10.8%	8.8%	11.4%		15.2%	11.8%	21.8%
RDE CC		12.6%	11.0%	15.9%		14.3%	13.9%	15.9%		13.8%	10.7%	17.8%
LCK CC		12.2%	9.9%	23.6%		10.7%	9.6%	35.6%		15.0%	11.0%	19.5%
GF CC		11.7%	10.9%	16.2%		10.9%	7.8%	11.7%		13.4%	12.9%	19.6%
AON CT		11.4%	10.8%	19.2%		10.8%	9.6%	12.2%		13.5%	12.4%	24.5%
GG CT		9.8%	9.1%	19.7%		10.0%	8.7%	23.6%		11.0%	10.4%	20.7%
RDE CT		11.0%	11.3%	18.8%		12.4%	14.3%	20.6%		11.8%	11.1%	20.0%
LCK CT		9.8%	9.1%	19.1%		10.0%	10.5%	32.2%		10.9%	9.6%	14.8%
GF CT		11.6%	11.0%	16.7%		10.9%	9.5%	11.9%		13.2%	12.7%	20.4%
Avg	15.6%	11.5%	10.4%	18.4%	12.0%	11.2%	10.2%	18.7%	18.6%	13.2%	11.6%	20.1%
Median	15.6%	11.6%	10.9%	18.2%	12.0%	10.8%	9.5%	14.0%	18.6%	13.4%	11.5%	20.2%
Other Southeast												
Scenario:												
AON CC	14.2%	15.5%	14.1%	15.6%	0.4%	0.0%	0.9%	2.7%	20.2%	21.6%	20.1%	20.7%
GG CC		16.6%	13.2%	15.9%		2.0%	0.0%	3.2%		23.9%	20.2%	22.2%
RDE CC		16.3%	12.9%	15.9%		0.4%	1.5%	2.9%		23.4%	18.2%	21.8%
LCK CC		16.9%	12.8%	13.7%		1.9%	0.9%	0.9%		24.0%	18.8%	21.4%
GF CC		15.5%	14.5%	15.4%		0.0%	0.9%	0.8%		20.5%	20.2%	20.6%
AON CT		14.8%	13.8%	14.1%		0.0%	0.0%	2.5%		20.1%	19.7%	18.3%
GG CT		10.3%	12.3%	12.7%		0.0%	0.0%	3.4%		18.5%	17.5%	16.2%
RDE CT		14.4%	13.8%	13.8%		0.0%	1.5%	0.6%		20.1%	19.2%	19.4%
LCK CT		13.3%	12.3%	12.2%		0.0%	0.0%	0.0%		18.4%	17.2%	18.0%
GF CT		15.1%	14.5%	15.0%		0.0%	0.3%	0.0%		20.2%	19.7%	20.2%
Avg	14.2%	14.9%	13.4%	14.4%	0.4%	0.4%	0.6%	1.7%	20.2%	21.1%	19.1%	19.9%
Median	14.2%	15.3%	13.5%	14.6%	0.4%	0.0%	0.6%	1.7%	20.2%	20.4%	19.5%	20.4%
Regions												
Scenario:												
AON CC	38.1%	47.9%	38.2%	43.0%	18.0%	25.6%	19.2%	23.1%	39.0%	51.0%	39.6%	44.3%
GG CC		38.1%	44.0%	40.7%		23.5%	18.2%	21.7%		47.0%	37.9%	42.2%
RDE CC		38.1%	45.2%	43.6%		25.6%	22.4%	24.0%		47.6%	40.9%	45.6%
LCK CC		38.1%	44.3%	38.1%		23.6%	19.1%	18.8%		47.2%	38.5%	41.0%
GF CC		38.1%	48.9%	44.5%		26.3%	18.1%	23.8%		51.7%	40.4%	46.1%
AON CT		38.1%	50.6%	44.1%		27.2%	22.8%	24.2%		54.2%	46.0%	45.8%
GG CT		38.1%	60.0%	49.0%		40.6%	25.4%	29.7%		59.9%	54.1%	52.0%
RDE CT		38.1%	50.7%	45.8%		28.4%	24.8%	25.4%		54.9%	45.4%	48.3%
LCK CT		38.1%	57.0%	49.4%		39.4%	25.4%	23.6%		60.6%	53.3%	56.2%
GF CT		38.1%	49.6%	45.3%		26.8%	22.1%	24.5%		52.5%	44.8%	46.8%
Avg	38.1%	49.8%	41.7%	44.3%	18.0%	28.7%	21.8%	23.9%	39.0%	52.6%	44.1%	46.8%
Median	38.1%	49.2%	41.4%	44.3%	18.0%	26.5%	22.2%	23.9%	39.0%	52.1%	42.8%	45.9%

Scenario:	Long Haul			Short Haul			Business UK resident			Business foreign resident			Leisure foreign resident		
	DM	Expansion		DM	Expansion		DM	Expansion		DM	Expansion		DM	Expansion	
		NWR	LGW		NWR	LGW		NWR	LGW		NWR	LGW		NWR	LGW
AON CC	1.4%	1.5%	1.5%	1.1%	0.9%	1.2%	1.9%	1.9%	2.1%	1.7%	1.7%	1.8%	1.1%	0.8%	1.1%
GG CC	1.8%	1.8%	1.8%	0.8%	0.7%	0.8%	2.2%	2.4%	2.4%	2.2%	2.2%	2.2%	1.1%	0.9%	1.1%
RDE CC	1.8%	1.5%	1.9%	1.0%	0.8%	1.0%	2.2%	2.2%	2.2%	2.0%	2.1%	2.1%	1.2%	1.0%	1.2%
LCK CC	1.7%	1.6%	2.1%	0.8%	0.6%	0.8%	2.4%	2.4%	2.5%	2.2%	2.2%	2.3%	1.1%	0.9%	1.1%
GF CC	1.3%	1.3%	1.4%	1.4%	1.0%	1.4%	1.5%	1.5%	1.5%	1.4%	1.3%	1.3%	1.3%	0.9%	1.3%
AON CT	1.5%	1.5%	1.7%	1.2%	1.3%	1.4%	2.0%	2.0%	2.0%	1.8%	1.8%	1.8%	1.3%	1.3%	1.4%
GG CT	2.0%	2.0%	2.2%	1.4%	1.5%	1.7%	2.4%	2.5%	2.5%	2.3%	2.3%	2.3%	1.8%	1.9%	1.9%
RDE CT	1.9%	1.7%	2.1%	1.2%	1.2%	1.4%	2.2%	2.3%	2.3%	2.1%	2.2%	2.1%	1.5%	1.5%	1.6%
LCK CT	2.0%	2.0%	2.1%	1.4%	1.5%	1.5%	2.4%	2.5%	2.5%	2.3%	2.4%	2.3%	1.8%	1.9%	1.7%
GF CT	1.3%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%	1.4%	1.3%	1.4%	1.4%
AVG	1.7%	1.6%	1.8%	1.2%	1.1%	1.3%	2.1%	2.1%	2.2%	1.9%	1.9%	2.0%	1.3%	1.2%	1.4%
Median	1.7%	1.6%	1.8%	1.2%	1.1%	1.4%	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%	1.3%	1.2%	1.3%

Scenario:	Leisure UK resident			Business domestic			Leisure domestic			International transfers			Total passengers		
	DM	Expansion		DM	Expansion		DM	Expansion		DM	Expansion		DM	Expansion	
		NWR	LGW		NWR	LGW		NWR	LGW		NWR	LGW		NWR	LGW
AON CC	1.5%	1.2%	1.5%	1.4%	1.3%	1.4%	1.6%	1.3%	1.6%	-4.7%	-0.4%	-3.0%	1.2%	1.0%	1.3%
GG CC	1.2%	0.9%	1.2%	1.5%	1.4%	1.5%	1.5%	1.3%	1.5%	-4.4%	-0.6%	-3.1%	1.2%	0.9%	1.1%
RDE CC	1.3%	1.1%	1.3%	1.4%	1.3%	1.3%	1.5%	1.4%	1.4%	-5.5%	-2.9%	-3.8%	1.2%	1.1%	1.3%
LCK CC	1.2%	0.9%	1.1%	1.6%	1.4%	1.4%	1.5%	1.3%	1.4%	-4.6%	-1.4%	-1.2%	1.2%	0.9%	1.2%
GF CC	1.8%	1.4%	1.8%	1.3%	0.9%	1.2%	1.5%	1.0%	1.4%	-4.4%	-0.1%	-2.8%	1.4%	1.0%	1.3%
AON CT	1.7%	1.7%	1.8%	1.5%	1.6%	1.6%	1.7%	1.7%	1.7%	-5.4%	-2.2%	-2.8%	1.4%	1.6%	1.5%
GG CT	1.9%	2.0%	2.1%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	-15.1%	-2.8%	-3.6%	1.6%	2.0%	1.9%
RDE CT	1.7%	1.7%	1.8%	1.6%	1.6%	1.6%	1.7%	1.7%	1.8%	-7.9%	-4.0%	-4.0%	1.5%	1.7%	1.7%
LCK CT	1.9%	2.0%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	1.9%	-15.1%	-2.8%	-2.6%	1.6%	2.0%	2.1%
GF CT	1.8%	1.9%	1.9%	1.3%	1.3%	1.3%	1.4%	1.6%	1.6%	-4.8%	-0.9%	-3.3%	1.4%	1.7%	1.5%
Avg	1.6%	1.5%	1.6%	1.5%	1.5%	1.5%	1.6%	1.5%	1.6%	-7.2%	-1.8%	-3.0%	1.4%	1.4%	1.5%
Median	1.7%	1.5%	1.8%	1.5%	1.4%	1.5%	1.5%	1.5%	1.6%	-5.1%	-1.8%	-3.0%	1.4%	1.4%	1.4%

UK AIRCRAFT TRANSPORT MOVEMENTS (ATMs)

'000 per annum

Incremental Analysis

Total UK ATMs	2011	DM Expansion				NWR Expansion					Gatwick Expansion						
		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050		
Scenario:			NWR	ENR	LGW	LHR	LGW	Other	SE	Regions	net	LHR	LGW	Other	SE	Regions	net
AON CC	1985	3040	2890	2904	3075	269	-20	-58		-341	-150	-5	196	-8		-148	35
GG CC		2850	2668	2705	2835	264	-59	-92		-295	-182	-3	133	-24		-121	-15
RDE CC		2939	2887	2883	3032	260	-38	-79		-195	-52	0	132	7		-46	93
LCK CC		2848	2704	2766	2944	268	-58	-82		-272	-144	8	285	-48		-149	96
GF CC		2848	2704	2766	2944	260	-26	-54		-324	-144	0	140	-10		-34	96
AON CT		3213	3318	3302	3273	268	0	-10		-153	105	1	279	-13		-207	60
GG CT		3446	3626	3565	3620	280	-4	-12		-84	180	22	288	-7		-129	174
RDE CT		3240	3323	3275	3338	260	16	5		-198	83	-6	283	14		-193	98
LCK CT		3442	3605	3572	3780	291	-15	3		-116	163	22	283	29		4	338
GF CT		3442	3605	3572	3780	260	0	-2		-95	163	-2	172	-6		174	338
Avg	1985	3131	3133	3131	3262	268	-20	-38		-207	2	4	219	-7		-85	131
Median		3127	3104	3090	3174	266	-18	-33		-197	16	0	238	-8		-125	96

AC Strat Fit tables 5.14 5.13/14 6.39/40 6.41/42 6.37/6.38

Prepared by APPG Secretariat

DM: Do Minimum (no expansion); NWR: Heathrow North west runway expansion; ENR: Heathrow extended runway expansion; LGW Gatwick 2R expansion

DESTINATIONS
Passengers mppa

Incremental Analysis

Scenario:	2011	DM Expansion			NWR Expansion					Gatwick Expansion				
		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	
														NWR
AON CC	361	400	397	400	47	na	5	-18	-3	na	61	8	-5	0
GG CC		400	396	399	51	na	-1	-26	-4	na	35	4	-4	-1
RDE CC		400	397	401	94	na	4	-13	-3	na	14	5	-5	1
LCK CC		400	396	405	80	na	0	-20	-4	na	52	4	-36	5
GF CC		401	400	400	43	na	1	-22	-1	na	8	7	-10	-1
AON CT		402	405	405	36	na	10	15	3	na	63	10	23	3
GG CT		404	407	403	37	na	14	-16	3	na	92	13	-4	-1
RDE CT		404	403	406	67	na	6	-11	-1	na	33	10	-8	2
LCK CT		406	407	410	78	na	18	-13	1	na	61	15	-13	4
GF CT		401	402	401	43	na	6	-15	1	na	14	8	-5	0
Avg	361	402	401	403	58	na	6	-14	-1	na	43	8	-7	1
Median		401	401	402	49		6	-16	-1		44	8	-5	1

Scenario:	2011	DM Expansion			NWR Expansion					Gatwick Expansion				
		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050		
													NWR	LGW
AON CC	107	130	130	130	9	na	1	-8	0	na	3	1	-3	0
GG CC		131	132	131	9	na	2	-15	1	na	3	1	-4	0
RDE CC		129	130	129	1	na	2	2	1	na	1	1	0	0
LCK CC		131	131	133	6	na	1	-12	0	na	61	3	-29	2
GF CC		130	131	130	9	na	1	-18	1	na	2	1	-7	0
AON CT		130	133	131	10	na	4	-7	3	na	4	2	-1	1
GG CT		129	134	130	13	na	7	-12	5	na	27	2	0	1
RDE CT		131	131	131	1	na	1	-2	0	na	11	1	-2	0
LCK CT		130	134	135	5	na	6	-13	4	na	71	7	-14	5
GF CT		130	131	130	8	na	2	-9	1	na	1	1	-1	0
Avg	107	130	132	131	7	na	3	-9	2	na	18	2	-6	1
Median		130	131	131	9		2	-11	1		4	1	-3	0

Scenario:	2011	DM Expansion			NWR Expansion					Gatwick Expansion				
		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050		
													NWR	LGW
AON CC	192	241	251	250	43	na	13	-15	10	na	35	11	-7	9
GG CC		241	253	246	47	na	16	-23	12	na	23	8	-13	5
RDE CC		241	255	243	52	na	15	-12	14	na	17	-5	-8	2
LCK CC		239	254	232	57	na	18	-19	15	na	39	-7	-15	-7
GF CC		244	251	256	35	na	10	-25	7	na	24	14	-14	12
AON CT		245	257	259	39	na	18	-17	12	na	53	20	-19	14
GG CT		251	264	258	41	na	20	-22	13	na	59	16	-14	7
RDE CT		247	259	252	47	na	17	-9	12	na	40	1	-5	5
LCK CT		250	266	257	64	na	24	-34	16	na	51	9	-22	7
GF CT		243	249	258	36	na	8	-8	6	na	33	17	-8	15
Avg	192	244	256	251	46	na	16	-18	12	na	37	8	-13	7
Median		244	255	254	45		17	-18	12		37	10	-14	7

Scenario:	2011	DM Expansion			NWR Expansion					Gatwick Expansion				
		2050	2050	2050	2050	2050	2050	2050	2050	2050	2050	2050		
													NWR	LGW
AON CC	61	82	87	85	10	na	5	-2	5	na	4	3	-1	3
GG CC		86	91	88	11	na	5	-2	5	na	0	2	-2	2
RDE CC		83	85	83	2	na	2	-1	2	na	0	0	-1	0
LCK CC		85	90	80	10	na	5	-2	5	na	30	-5	-2	-5
GF CC		82	86	82	9	na	4	-3	4	na	0	0	-1	0
AON CT		83	92	88	12	na	9	-3	9	na	1	5	-1	5
GG CT		87	100	86	19	na	14	-10	13	na	18	0	-3	-1
RDE CT		87	90	86	2	na	3	0	3	na	9	-1	0	-1
LCK CT		87	101	95	15	na	15	-12	14	na	40	9	-14	8
GF CT		82	86	83	7	na	4	-1	4	na	1	1	0	1
Avg	61	84	91	86	10	na	7	-4	6	na	10	1	-3	1
Median		84	90	86	10		5	-2	5		3	1	-1	1

AC Strat Fit tables (5.11, 5.12, 5.9/10,6.33/34,6.25/6.26)

Figures are number of destinations - not routes. Some destinations have several routes from different airports.

PASSENGER-KILOMETRES

	2011	Expansion			Increment with DM			
		DM	Expansion		2050		2050	
		2050	2050	2050	2050	2050	2050	2050
		NWR	LGW	NWR	LGW	NWR	LGW	
<u>Scenario:</u>								
AON CC	616,595	1,141,253	1,133,122	1154707	-8,131	13,454	-0.7%	1.2%
GG CC		1,139,860	1,124,502	1135138	-15,358	-4,722	-1.3%	-0.4%
RDE CC		1,128,994	1,120,563	1145405	-8,431	16,411	-0.7%	1.5%
LCK CC		1,137,873	1,123,036	1130165	-14,837	-7,708	-1.3%	-0.7%
GF CC		1,133,083	1,133,534	1129532	451	-3,551	0.0%	-0.3%
AON CT		1,210,828	1,306,338	1,252,881	95,510	42,053	7.9%	3.5%
GG CT		1,391,635	1,553,309	1,482,006	161,674	90,371	11.6%	6.5%
RDE CT		1,252,463	1,308,851	1,300,309	56,388	47,846	4.5%	3.8%
LCK CT		1,395,124	1,544,548	1,540,068	149,424	144,944	10.7%	10.4%
GF CT		1,141,804	1,233,487	1,169,397	91,683	27,593	8.0%	2.4%
AVG	616,595	1,207,292	1,258,129	1,243,961	50,837	36,669	4.2%	3.0%
Median		1,141,529	1,183,511	1,162,052	28,420	22,002	2.5%	1.9%

AC Strat Fit tables 5.13/14, 6.43/44, 6.45/46

Prepared by APPG Secretariat

DM: Do Minimum (no expansion); NWR: Heathrow North west runway expansion; ENR: Heathrow extended runway expansion; LGW Gatwick 2R expansion