

**Written submissions received for the London Assembly's  
Heathrow Expansion investigation**

**January 2010**

## **2M**

The Government's environmental conditions for the expansion of Heathrow and their ability to mitigate the impact of aircraft noise, air pollution and climate change.

Response to the GLA Environment Committee by the 2M Group.

This statement has been prepared on behalf of the 2M Group of local authorities. The 2M Group is an alliance of local authorities concerned about the impact of Heathrow expansion on their communities. The group which took its name from the 2 million residents of the original 12 authorities now represents 24 authorities with a combined population of 5 million people.

On 15 January 2009 Geoff Hoon, Secretary of State for Transport announced that the development of a third runway at Heathrow airport had Government policy support. Within the announcement the Secretary of State set out a number of new policies and practices designed to mitigate the impact of such expansion.

These included new powers for the Civil Aviation Authority and the Environment Agency and forecasts on air quality and noise contour impacts.

Some ten months later we still have no information on what these new powers are and how they will work.

The announcement proposed a safety net limiting the third runway to an additional 125,000 movements (i.e. not the full 222,000 set out in the Adding Capacity at Heathrow consultation document). Expansion beyond this would depend on the environmental conditions being met and on advice from the Committee on Climate Change on whether the Government was meeting carbon dioxide reduction targets.

These conditions mean that either the airport would never be used to its full capacity or the environmental conditions would have to be changed. But even if a 'half-open' third runway were a credible proposition, its reduced economic impact would make the social and environmental dis-benefits even harder to justify – not least the human impact which includes the destruction of Harmondsworth village and the forced relocation of local people and their families.

Air Quality - Attainment of the EU Limit value for nitrogen dioxide of  $40\mu\text{g.m}^{-3}$  (expressed as an annual average).

The Secretary of State was optimistic about the likelihood of achieving the European Union limit value for nitrogen dioxide. He said this could be controlled by limiting the number of air transport movements.

The area around Heathrow is above the limit already and past experience shows that limits will not be achieved in the foreseeable future. It is likely that the UK will be in breach of the European Directive<sup>1</sup> in 2010.

National documents all acknowledge that the poor air quality in this area is caused by a mixture of road traffic emissions and those associated with the operation of the airport.

Even without a third runway, air quality in the area is likely to deteriorate further. The airport is currently operating at 470,000 air transport movements below the yearly cap of 480,000 ATMs. This unused capacity is certain to be taken up in the near future.

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<sup>1</sup> Ambient Air Quality Daughter Directive <http://ec.europa.eu/environment/air/legis.htm>

Between 2010 and 2015 the Government predicts an annual increase of 3.04 million persons in terms of the numbers of passengers arriving at the airport by private transport. With the corresponding increase in road traffic volume it is hard to see how the EU limit value will be met within the foreseeable future.

The local authorities argue that, in a situation where the Government is planning future developments that would increase air pollution (and noise) around the airport, it should be taking steps ahead of those changes to improve the current situation.

The decision for expansion contains no specific mitigation package for reducing nitrogen dioxide beyond limiting the numbers of air transport movements for a future expanded airport.

Member States seeking additional time to meet the EU limits will be required to demonstrate the measures already being deployed. It is difficult to see how the UK Government will be able to satisfy this condition.

Once air quality and noise levels are being exceeded it is difficult to see how they can be reined in – especially when existing measures such as differential emissions based landing charges (see below) are not proving successful.

Proportion of air traffic movements with NOx emissions at least 20% better than CAEP/4 standard<sup>2</sup>

<b>Year</b>	<b>Percentage Aircraft at Heathrow at least 20% better than CAEP/4 standard</b>
<b>05</b>	<b>23.01</b>
<b>06</b>	<b>21.29</b>
<b>07</b>	<b>20.60</b>
<b>08</b>	<b>18.69</b>

#### Noise contour limits

The Secretary of State set the noise contour benchmark at 127 square km.

This is the 2002 level – the last year Concorde was flying. At such it is an artificial measure that bears no relation to current noise impacts. A more credible standard against which to measure future levels would be the most recent figure (116 square km).

In arriving at its forecast for future noise levels the DfT has made a series of assumptions about the make-up of the aircraft fleet for many years ahead. This has been shown to include futuristic aircraft types that are currently neither in design nor production. It is difficult to see how the DfT can project these impacts with any certainty when they are so dependent on unproven technology and unknown ordering plans.

<sup>2</sup> BAA Corporate Responsibility Report 2008 , page 20, table 11

It is not as if the noise contour is shrinking with the airport at its current capacity. Between 2006 and 2008 the 57  $L_{Aeq,16}$  contour grew from 117.4 square km to 123.1 square km.

#### New Powers for the CAA and the Environment Agency

The Government proposes a legally binding process where additional flights are only permitted following regular independent assessments of the anticipated air quality and noise impacts.

The CAA (for noise) and the Environment Agency (for air quality) will have the powers to ensure that relevant parties take their share of the remedial action needed to comply with respective legal limits.

The Environment Agency would also have to take into account emissions from roads and rail around Heathrow with appropriate guidance from Ministers

In the event that limits were breached, the independent regulators would have a legal duty and the necessary powers to take action – or require others to take the action.

It is not known what measures the Secretary of State has in mind but these will have to be wide-ranging and legally enforceable to encompass controls over the use of the surrounding road network and the operation of the airport. The consultation on these matters has recently been delayed to next year.

#### Green Slots

The Secretary of State has placed a lot of faith in a new 'green slots' regime which would allow only the cleanest, greenest aircraft to use Heathrow. Yet there is no legal framework which would allow the 'banning' of aircraft that are already flying.

The announcement said that 'any additional capacity available on the third runway will, after consultation, be subject to a new green slot principle, to incentivise the use at Heathrow of the most modern aircraft, with further benefits for air quality and noise carbon dioxide emissions.

There is no definition of 'most modern aircraft'.

#### A new target to limit aviation emissions in the UK to below 2005 levels by 2050.

Before its decision the Government asked the Climate Change Committee to advise on aviation. The Government also announced, as part of its decision, that aviation emissions would be limited to 2005 levels by 2050.

The Climate Change Commission will report on the new target in December and the report will include implications for aviation expansion, if not for Heathrow specifically.

It is likely that all aspects of sustainability will be assessed with regard to the potential for biofuels which may impact on other issues such as deforestation, impact on water resources or competition for food production.

#### Crossrail, Airtrack and Piccadilly Line upgrades.

The Secretary of State's announcement suggested that a combination of three projects - Airtrack and Crossrail and Piccadilly Line upgrades - would provide sufficient public transport capacity for a three runway, six terminal Heathrow.

However the numbers travelling to the airport by public transport are already expected to grow from 21.34mppa in 2010 to 25mppa in 2015<sup>3</sup>.

Currently around 40% of people travelling to Heathrow use public transport. This is a target set in the Heathrow Surface Access Strategy with an 'aspirational' target of 45%.

The Government says that Airtrack and Crossrail will each facilitate a further 1% modal shift towards public transport<sup>4</sup>. These will simply help the airport move towards its aspirational target.

The 2M group does not think that the identified transport projects can address the demand from an expanded airport. These will be needed to tackle the public transport deficit of the existing two-runway airport<sup>5</sup>.

### High Speed Rail

A study produced for the 2M Group calculated that if a national high speed rail network were established it could serve around 25% of existing routes from Heathrow. This figure could grow with effective marketing of new, direct high speed links to European cities. It would transform the air-rail choice for passengers with potentially 43% of Heathrow flights facing realistic competition from high speed rail alternatives.

Before final decisions are made on new runways and new rail lines, the UK Government should first assess how a genuinely national high speed rail network, allied with European developments, might impact on demand for short haul – and quantify the consequences for carbon dioxide emissions from such a substantial modal shift

The Climate Change Committee will report in December 2009 on the potential for reducing carbon emissions through rail substitution.

### Abolition of the Cranford Agreement

The Secretary of State's announcement included abolition of the Cranford Agreement which limits departures from the northern runway to the east of the airport.

While some communities to the west of the airport will benefit from this operational change, others will experience a significant worsening of their noise environment.

So far no mitigation measures have been suggested that will address this impact.

### Retention of runway alternation

The Secretary of State's announcement promised the retention of runway alternation. This provides partial relief to overflowed communities when arriving aircraft switch runways at 3pm.

This means that neither of the existing runways will be used for landings and take offs at the same time. Aircraft will continue to land one runway and take off from another.

Consultation on BAA's draft Noise Action Plan (NAP) for Heathrow closed on 5 October 2009. The local authorities have said in their responses that the final approved NAP must confirm the retention of this important relief.

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[www.2MGroup.org.uk](http://www.2MGroup.org.uk)

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<sup>3</sup> Adding Capacity derived from page 62 Table 5 and Adding Capacity p109 paragraph 3.181

<sup>4</sup> Adding Capacity p105 paragraph 3.170

<sup>5</sup> The Future of Air Transport page 122, paragraph 11.58

## **BAA**

### **1. OVERVIEW**

BAA welcomes the opportunity to submit evidence in support of the sustainable growth of Heathrow Airport.

Heathrow plays a vital and unique role in this country's economic prosperity and in society as a whole. As the UK's only hub airport, Heathrow provides regular direct links to every part of the world – in a way that no other airport in the UK does, or can. The role of a hub airport is increasingly important in a global market and a global society. Links to India and China are becoming more important, as are other connections with emerging markets in Asia and South America.

But Heathrow is full – its two runways are operating at 99% of capacity. Preserving existing links, and pioneering new ones, will only be possible if Heathrow can add sufficient capacity that better responds to the demand for new routes and provides the frequency of services that underpins the UK's competitiveness. The answer is a third runway at Heathrow, to be built and operated within strict environmental limits.

The Government has made it clear, and BAA is committed to the principle, that a third runway will only be built and operated if Heathrow meets strict rules on noise, air quality and climate change. These limits will be independently scrutinised by the CAA, Environment Agency and Committee on Climate Change respectively. If these limits are not respected, then the number of flights at the airport will be limited.

BAA is confident that the environmental limits can and will be met for the following reasons:

- New technology is continuing to reduce the noise and air quality impacts of aircraft. Aircraft and engine manufacturers have committed to making new aircraft 50% quieter by 2020 compared to aircraft in 2000. They have also pledged to cut NOx emissions from engines by 80% in the same timeframe.
- Road vehicle engines, which contribute the majority of air quality emissions around Heathrow, are becoming cleaner as new emissions standards come into force.
- Aviation companies are investing significantly in R&D to cut carbon emissions. A new aircraft in 2020 will emit 50% less carbon than its equivalent in 2000 as a result of improved technology and operations. Biofuels represent another promising technology.

If the limits are not met, BAA will not be allowed to increase the number of flights from Heathrow. More detail on how the limits will be met is provided in the following sections. Further information on how BAA is tackling noise, air quality and carbon emissions from all of its airports can be found at [www.baa.com](http://www.baa.com).

### **2. ECONOMIC CASE FOR A THIRD RUNWAY**

As the UK's only hub airport, Heathrow is vital to the country's economic prosperity. Only hub airports attract the volume of traffic to offer passengers and freight the wide variety of destinations and frequency of flights needed in a global economy. 70% of the UK's long-haul flights depart from Heathrow and the airport provides our only direct air links to emerging world cities such as Sao Paulo, Beijing, Mumbai and Shanghai.

Transfer passengers also help provide a high frequency of service to established business destinations such as New York and Hong Kong; seven out of the top ten business routes in the world currently have Heathrow at one end. Business people know they can fly where they want to, when they want to, direct from Heathrow; this helps to make the UK an attractive place to

do business. More than half of major companies report that transport links are 'absolutely essential' in deciding where to locate their businesses.

But Heathrow is full. Its two runways operate at 99% of its permitted runway capacity, leading to unnecessary delays and cancellations, and a marked lack of operational resilience in times of poor weather or crisis. For this reason delays are significantly worse at Heathrow than European competitors - 44% of flights arriving into Heathrow are delayed compared to around 25% at Frankfurt, Paris and Amsterdam. In contrast to Heathrow, Frankfurt has three runways (with a fourth due to open in 2011), Paris has four, Amsterdam has five - all with spare capacity.

Capacity constraints also leave no room for flights to new destinations. The number of destinations served at Heathrow has dropped from 227 in 1990 to 180 today. Over the same period Frankfurt, Paris and Amsterdam have all increased their destinations significantly and can offer new slots to emerging economies.

A third runway at Heathrow would add to the UK's prosperity, not least by easing delays, improving passenger experience and allowing airlines to fly new routes to strategically important economies like Brazil, China and India. The British Chambers of Commerce published a report in July 2009, *Economic Impacts of Hub Airports*, which placed the annual cost of delaying Heathrow expansion at £1 billion per annum. The report found that increasing capacity at Heathrow could deliver benefits that include:

- The addition of new destinations.
- Higher frequency of service.
- Increased competition.
- Improved reliability of service.

Heathrow is also the largest employment site in the UK. It directly employs over 70,000 people, in a huge array of occupations that range from entry-level employment to highly skilled technical and managerial roles. Around half of those staff live in London and, in some local boroughs, as many as 1 in 10 of the working population works at Heathrow. A further 100,000 jobs are indirectly supported by the airport. An expanded Heathrow will help to safeguard those 170,000 jobs, as well as creating thousands of jobs through construction.

We believe that the benefits that will be brought by extra capacity at Heathrow can be delivered within strict environmental limits, as we outline in the following sections.

### **3. CLIMATE CHANGE**

#### **Background**

The climate change impact of flights is relatively small but it is growing. Flights are currently responsible for around 6% of the UK's total CO<sub>2</sub> emissions, and 1.6% of global greenhouse gas emissions. The Intergovernmental Panel on Climate Change (IPCC) central case estimate is that aviation will account for 5% of the global human contribution to climate change in 2050 (including aviation's non-CO<sub>2</sub> impacts). Their highest scenario is 15%.

#### **Action to address climate change**

BAA aims to provide leadership on solutions to the aviation industry's climate impact. We believe that aviation should meet the external costs of its activities and contribute to the goal of avoiding dangerous climate change.

Where BAA has direct control over carbon emissions, such as emissions from energy consumption, we have established strategies to achieve carbon reductions. This includes a target to reduce emissions from energy use at the airport by 34% by 2020 compared to those in 1990. We recently published a suite of technical studies for consultation with the GLA and Hillingdon setting out the technical basis for delivering this target at Heathrow as a precursor to

publishing a Heathrow site wide energy strategy later this year. The new Heathrow East terminal will play an important role in meeting this strategy: it will be 40% more efficient than a building that conforms to current building standards with at least 20% of its energy being provided by renewable sources.

Where we do not have direct control over emissions, for example in the case of flights, we use our influence to encourage the airline industry and policy makers to tackle climate change (see the following section for further discussion).

### **Meeting UK climate change targets with a third runway**

The UK Government has set one of the toughest climate change policy frameworks in the world, and is unique in including a requirement for aviation to reduce its emissions to 2005 levels by 2050.

The initial capacity of a three-runway Heathrow will be limited to 605,000 flights per annum, around half the increase originally anticipated. This cap will remain in place until at least 2020, when the Committee for Climate Change will be responsible for deciding whether aviation is on track to reduce its emissions to 2005 levels by 2050.

If the Committee believes that the target will be met, then the number of flights at Heathrow could increase to 702,000 flights a year (subject to the other limits on noise and air quality being met). The Government has also said that the additional capacity created by the third runway will be ring-fenced for use by environmentally-friendly aircraft. This gives airlines a real incentive to invest as quickly as possible in the most fuel efficient planes.

Sustainable Aviation, a coalition of aviation stakeholders, has set out a roadmap which shows how UK aviation's CO<sub>2</sub> emissions can be reduced to 2000 levels by 2050 through new technologies, operational improvements and use of sustainable biofuels.

### ***Technology***

Aircraft are becoming more fuel efficient and aviation has a good track record in technological innovation – there has been a 50% improvement in fuel efficiency over the last thirty years. The latest generation of aircraft currently being introduced are already significantly more fuel efficient than those they replace.

### ***Operations***

Improving airspace management is key to reducing carbon emissions from aviation. Around six million tonnes of CO<sub>2</sub> have already been saved by shortening existing air routes. A unified system of air traffic management within the EU could cut Europe's aviation CO<sub>2</sub> emissions by 10%. This is known as the Single European Skies initiative.

### ***Biofuels***

The aviation industry is spending millions of pounds on exploring alternative fuels to kerosene. Rapidly developing research shows that sustainable next-generation biofuels are a technically viable energy source for aviation. Air New Zealand recently flew a Boeing 747-400 on a sustainable second-generation biofuel – a technological development that was considered impossible only a few years ago. The reality is that there are strong financial incentives to finding an alternative to kerosene and aviation companies are doing all they can to find a suitable alternative as quickly as possible.

### ***Emissions Trading***

In addition to the UK Government's target for aviation to reduce its emissions to 2005 levels by 2050, aviation will also be part of the EU Emissions Trading Scheme (ETS) from 2012, long before a third runway would be operational. This means that the aviation's net CO<sub>2</sub> emissions will be capped at approximately 2005 levels - if airlines want to emit more CO<sub>2</sub> than this cap



they will have to cut their own emissions through new technology or pay for other industries to cut emissions.

Aviation's inclusion in the EU ETS will stimulate demand for carbon credits. This will help incentivise investment in the newer, cleaner technologies described above. It will also create a real financial incentive for airlines to invest in carbon reduction technology as quickly as possible, without limiting the strong economic and social benefits that flying brings.

We believe that regional action through the European Emissions Trading Scheme is an interim step towards a global solution. Working with a coalition of airlines, we are leading the industry by pushing for international aviation to be included in a global emissions trading scheme as part of the Copenhagen agreement at the end of this year.

#### **4. NOISE**

##### **Background**

In the UK, daytime aircraft noise is measured by calculating the average noise level in decibels (dB) over 16 hours, to give a single daily figure. The Government calls this average decibel measurement 'LAeq' (which is often shortened to Leq). It means 'equivalent continuous noise level' and is the most common international measure of aircraft noise. The UK Government says that communities become significantly annoyed by aircraft noise above 57dB LAeq. They use this as the starting point when setting policy on aircraft noise.

##### **Air noise and Heathrow**

In the last 30 years at Heathrow, the number of people who live within the 57 decibel contour has fallen considerably as older aircraft are replaced by newer quieter models. In 1980, there were 2,000,000 people living in the 57 decibel noise contour around Heathrow. By 2006, this had fallen to around 252,000 people. This is despite a rapid growth in air travel during the same period, from around 273,000 flights a year in 1980 to 477,000 flights in 2006. Similarly the area contained within the contour has steadily fallen:

- 1998 = 163.7 km<sup>2</sup>
- 2002 = 126.7 km<sup>2</sup>
- 2008 (most recent available) = 123.1 km<sup>2</sup>.

##### **Action to improve and manage noise at Heathrow**

We are currently in the process of drafting our noise action plan in line with the European Noise Directive. Our 16 week public consultation on our first draft has recently closed and we are reviewing the responses. We expect to submit a final draft to the Department for Transport and DEFRA by 30 November 2009 for adoption.

In our approach to noise management we have set four key themes for our work program over the next five years. These themes establish a framework for the airport's noise action plan and help inform our priorities.

1. Reducing noise impacts wherever practicable. This includes:
  - 1.1. Quietest fleet practicable;
  - 1.2. Quietest practicable aircraft operations, balanced against NO<sub>x</sub> and CO<sub>2</sub> emissions;
  - 1.3. Effective and credible noise mitigation schemes.
2. Engaging with communities affected by noise impacts to better understand their concerns and priorities, reflecting them as far as possible in airport noise strategies and communication plans;

3. Influencing planning policy to minimise the number of noise sensitive properties around our airports;
4. Continuing to support research to build on our understanding of aircraft noise to further inform our priorities, strategies and targets.

At Heathrow we believe, based on the evidence of our benchmarking studies and long-standing status as a designated airport, that we have a full and comprehensive range of noise management measures already in place when compared with other similar airports. These measures cover operational procedures, stakeholder communication and engagement as well as mitigation and compensation schemes.

However we continue to seek improvements where we can across all these areas. There are in excess of 50 actions detailed within the current draft action plan. Over 30 of these represent the continuation of current good practice. There are however a number of new actions which highlight our desire to further improve our noise management approach. These include:

- Voluntary phase out of marginally compliant Chapter 3 aircraft by 2015
- Publication of a Departures Code of Practice
- Commitment in 2010 to review of our existing noise mitigation and compensation schemes
- International benchmarking of our approach to noise communications and operational noise management controls
- Proposal to formulate a regime to track and describe our noise impact using a range of alternative metrics to help aid understanding

Full details of all the current measures, proposed actions and limit values in place at Heathrow are detailed in the attached draft action plan consultation document.

We recognise that following the publication of this noise action plan, it will be important to keep communities and other stakeholders informed as to the progress made. We are committed to reporting publicly on our performance against the action plan and the effectiveness of our actions to address community concerns. We therefore plan to annually report on our progress against the action plan.

### **Meeting the noise limit with a third runway**

Aircraft are getting quieter. The figures above show how technology has reduced the noise contour around Heathrow over the last twenty years, despite a 60% increase in flights. This trend is set to continue - aircraft manufacturers have committed to making new aircraft 50% quieter by 2020 compared to aircraft in 2000.

This is why a three-runway Heathrow in 2020 could have the same overall noise contour area as a two-runway Heathrow in 2002, despite an increase in flights.

The Government has made it clear that a third runway at Heathrow cannot go ahead unless the overall noise contour does not exceed 2002 levels. The Civil Aviation Authority (CAA) will be responsible for ensuring this limit is not broken and additional flights will not be allowed if there are any concerns that the noise limit cannot be met.

## **5. AIR QUALITY**

### **Background**

Air quality concentrations for nitrogen dioxide (NO<sub>2</sub>) currently exceed the EU limit values in many parts of the UK and across large areas of London. This has been the principal cause for all London boroughs to declare one or more Air Quality Management Areas (AQMAs) along with

action plans to improve air quality. Transport, gas use in buildings and industry are the main sources of emissions.

**Air quality around Heathrow Airport**

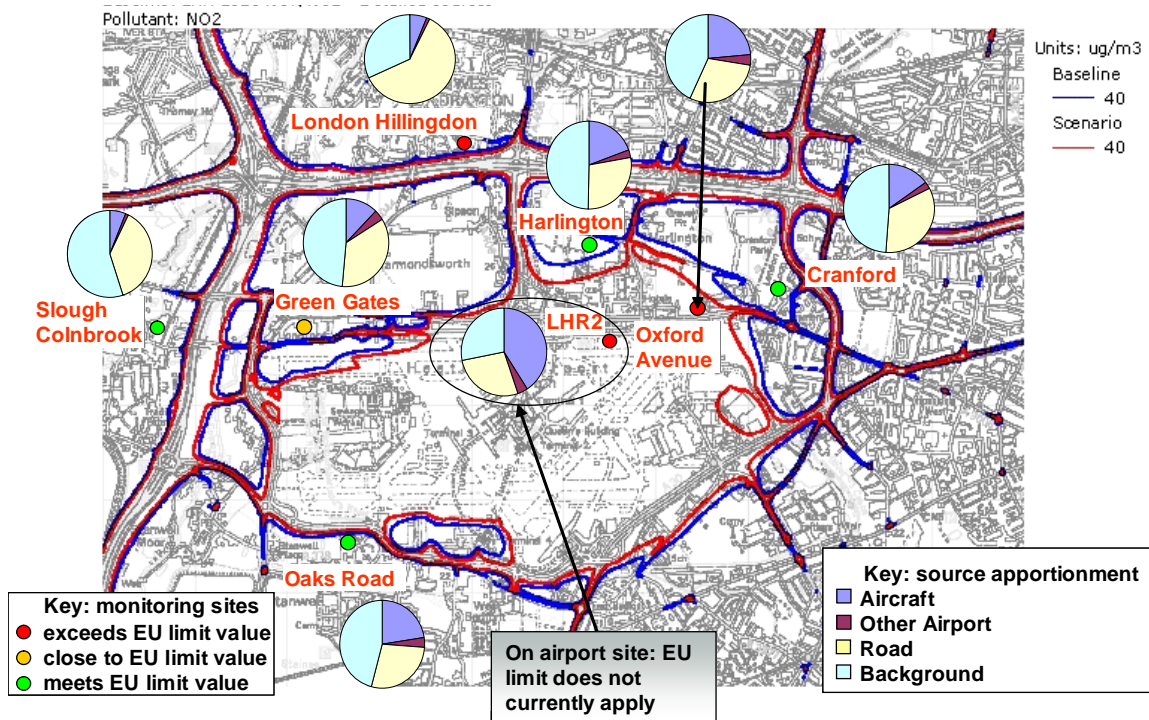
Some residential areas around Heathrow Airport currently exceed the annual average limit values for NO<sub>2</sub>. Figure A below shows the main air quality monitoring sites around Heathrow. Two residential sites in the vicinity of the airport are currently above the EU limit: Oxford Avenue, to the north-west of the airport, and London Hillingdon, to the north of the M4. A further site on the airport is above the limit and has been included for information: LHR2, located next to the northern runway. However, it is important to note the EU limit does not apply within the airport boundary.

The same figure also shows how modelled NO<sub>x</sub> emissions from the four major sources (aircraft; other airport; road and background) have been apportioned at key air quality monitoring sites for 2010. At sites close to the boundary, up to around 25% of emissions come from sources within the airport boundary – predominantly aircraft. However the influence of aircraft sources reduces quickly with distance from the airport boundary.

The remainder of emissions come from road traffic and ‘background’ sources, such as housing and industry. Road traffic in the Heathrow area is a mix of airport-related traffic, and other traffic. The proportion of traffic that is airport-related varies from site to site. Data for 2002 indicated airport-related traffic accounted for approximately half of the traffic emissions near the Cranford site and around one third of traffic emissions near the Hillingdon site. Heathrow plans to investigate emissions from airport-related traffic further in 2010.

Figure A also shows the expected impact of action in the Heathrow Airport Air Quality Action Plan. The expected area that exceeds the air quality limits over the course of a year has been mapped for 2007 (blue line) and 2011 (red line).

Figure A - Estimation of the EU annual average nitrogen dioxide (NO<sub>2</sub>) limit value exceedence area by 2011 and 2010 oxides of nitrogen NO<sub>x</sub> emission estimates



**Current action to improve air quality around Heathrow**

Heathrow Airport takes its air quality impact on the local community seriously and has put a number of measures in place to reduce emissions. We provide a below an overview of actions in the Heathrow Air Quality Action Plan which was published in 2007.<sup>6</sup>

1. Measures to reduce NO<sub>x</sub> emissions from aircraft at Heathrow:
  - Heathrow has introduced a NO<sub>x</sub> charge as part of the overall landing charge at Heathrow, which means that more polluting aircraft pay extra to use Heathrow. This encourages airlines to invest in the cleanest aircraft available.
  - Traditionally aircraft keep a small engine (known as an 'Auxiliary Power Unit' – APU) running when they are on the ground to power the plane and to heat/cool the cabin as needed. BAA works with airlines to provide plug-in electrical power and 'pre-conditioned air' so aircraft can turn off this engine and reduce local pollution
  - We are redesigning taxiways to help reduce airfield congestion, cutting the amount of time that aircraft have to run their engines on the ground.
  - We lobby for improved aircraft engine emission standards through our international trade body, ACI-World, which works with the UN's International Civil Aviation Organisation.
2. Measures to reduce emissions from airside vehicles:
  - Using the cleanest conventional fuels (Heathrow has provided only cleaner road-grade tax-exempt diesel for a number of years - ahead of the EU deadline of 1/1/2009) and discouraging unnecessary vehicle idling.
  - Encouraging further emission cuts through increased uptake of low emission vehicles and technologies when cost-effective to do so. BAA runs a 'Clean Vehicles Programme' at Heathrow to incentivise the use of cleaner vehicles by companies operating at and near the airport. For example, electric vehicles are used extensively on the airport and BAA further encourages their use.
3. Measures to reduce emissions from landside vehicles.
  - Increasing the proportion of people travelling to the airport by public transport. We have already achieved our target to increase the proportion of passengers travelling to the airport by public transport to 40% by 2012. We have now set a new target of 45%. Improved public transport is essential to achieve this goal and BAA is investing to support this objective. We have spent £750m on Heathrow Express, committed £230m to Crossrail and are funding the Heathrow Airtrack Transport and Works Act.
  - We also subsidise free bus travel in and around the airport, important in helping to reduce emissions from road traffic in the local area.
  - BAA encourages staff to use public transport or to cycle to work, and promotes car sharing for staff who use their cars. We have the largest car share scheme in Europe.

### **Meeting air quality limits with a third runway**

Additional flights on a third runway will only go ahead if EU legal limits on air quality in the local area are met. The Environment Agency has been appointed to ensure the limit is met and additional flights will not be permitted if there are any concerns about air quality in the local area. Lord Smith of Finsbury, Chair of the Environment Agency, has made it clear that these limits will be strictly enforced: "The Environment Agency will strongly and rigorously enforce air pollution limits around the airport."

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<sup>6</sup> The information below formed part of a presentation made to the Heathrow Airport Consultative Committee (HACC) on 29 July 2009; Murad Qureshi AM has more details.

Air quality around the airport has slowly improved in recent years; reducing congestion and improving emissions from road vehicles is key to tackling air quality issues around Heathrow. There are several important developments that should help reduce pollution further over the next few years:

- Older aircraft at Heathrow are being replaced steadily by newer, cleaner aircraft. The latest generation of large aircraft, like the A380, emit significantly less NO<sub>x</sub> than existing large aircraft. Aircraft and engine manufacturers are committed to an 80% cut in NO<sub>x</sub> emissions from new aircraft by 2020, compared to aircraft in 2000.
- In 2010, the EU is bringing in much tighter emission standards for car and heavy good vehicles. This means emissions from new road vehicles will be cut.
- Significant improvements are being made to public transport to the airport, including a 25% increase in capacity on the Piccadilly Line, the opening of Crossrail and, subject to planning permission, the construction of Heathrow Airtrack. This will help increase the number of people choosing the travel to the airport via public transport, reducing congestion locally.

## 6. SUMMARY

Heathrow can expand and meet its environmental limits. A third runway will only be built and operated if strict rules on noise, air quality and climate change are met. These limits will be independently scrutinised by the CAA, Environment Agency and Committee on Climate Change respectively. If these limits are not respected, then the number of flights at the airport will be limited.

- New technology is continuing to bring improvements in the noise and air quality impacts of aircraft.
- Road vehicle engines are becoming cleaner and the number of people travelling to the airport by public transport is increasing.
- Aviation companies are continuing to invest strongly in R&D to cut emissions. New aircraft in 2020 will emit 50% less carbon than in 2000 as a result of improved technology and operations. Biofuels represent another promising technology.
- Sustainable Aviation - a collation of aviation stakeholders - have set out a roadmap which shows how the UK aviation's CO<sub>2</sub> emissions can be reduced to 2000 levels by 2050 through new technologies.
- Aviation will become part of the EU Emissions Trading Scheme in 2012. This will cap carbon emissions at approximately 2005 levels and will help to incentive investment in new, cleaner, technologies.

## **Environment Agency**

### **WRITTEN SUBMISSION TO THE LONDON ASSEMBLY ENVIRONMENT COMMITTEE**

#### **Heathrow**

- In our response to the Department for Transport's consultation on Heathrow we stated that the evidence presented was not sufficiently robust to conclude that the proposed Heathrow development will not lead to a breach in the EU air quality limit value for nitrogen dioxide. That does not mean that the evidence cannot be found, just that the case has not been proven. The consultation also did not take full account of potential greenhouse gas costs in the economic assessment. Since then, Government has allowed expansion to go ahead on the basis that the environmental criteria can be met. Additional flights would only be allowed if air quality limits had already been met.
- The Secretary of State granted us a role in assessing and monitoring air quality around the airport to ensure, along with other partners, that the air quality limits will be met. The Civil Aviation Authority will be responsible for ensuring that any restrictions on noise are met.
- In consultation with Government we are currently deciding how to implement our role. We will be working with relevant partners to ensure the airport does not breach these limits and to reduce the impact on human health.

#### *Potential new Environment Agency role*

- We are not certain of the exact form of our role at this stage. However, after discussion with Government it could fall into three main areas:
  1. Co-ordination of air quality monitoring and modelling to assess compliance with air quality limits.
  2. Auditing of studies to assess the extent to which future capacity can be released.
  3. Action in the event that limit values are, or are likely to be, breached.
- We want to work in partnership with local authorities, British Airports Authority and other stakeholders such as the Civil Aviation Authority and Highways Agency to carry out our new role. We need to have agreed in advance with other parties what action will be taken if limit values are breached, or are likely to be breached, and how they will be delivered. We will also need to monitor and review the effectiveness of these measures.