

Heathrow's blueprint for reducing emissions

Our top ten actions to reduce
Heathrow's emissions in **2016**



Improving air quality around Heathrow

Emissions come from many sources including road traffic, factories, aircraft at low levels, trains, heating and power generation. These emissions can result in concentrations of pollution at ground level that effect air quality.

A key measure of local air quality is the concentration of nitrogen dioxide (NO₂). It is the pollutant of most concern in London and the UK because of the impact that long-term exposure can have on human health and because limits set by the EU and UK Government are exceeded at a number of locations across the UK and in other major European cities.

Combustion creates nitrogen oxides (NO_x), a mixture including nitrogen oxide (NO) and NO₂. Some NO then reacts in the atmosphere to form more NO₂. If large quantities of NO_x are emitted in any particular area, this can result in high concentrations of NO₂ at ground level which can be damaging to human health.

To improve air quality, it is critical to manage and reduce emissions which will in turn reduce the concentration of pollutants. At the airport, we and our partners are working to play our part to improve air quality by reducing emissions from vehicles, aircraft and buildings.

Carbon reduction

Although the actions covered by this Blueprint aim to reduce NO_x emissions, they will also help to reduce our carbon emissions. To find out more about our efforts to tackle climate change, visit heathrow.com/responsibleheathrow

This Blueprint is part of Responsible Heathrow 2020 which is our plan to support the UK and local economies, reduce Heathrow's environmental impacts and look after passengers and people. It's a step towards achieving our ambition to be one of the most environmentally responsible hub airports in the world.



Responsible Heathrow

Our ten-point plan to manage and reduce emissions



Aircraft activity



1

Bring in the newest and cleanest aircraft

Similar to Euro standards for cars, aircraft are also subject to international emission standards for NOx (known as CAEP). To encourage airlines to fly their cleanest aircraft at Heathrow, we link our landing fees to an aircraft's NOx emissions and will be nearly doubling this fee from 2017. Previously, we set a target that at least 55% of Heathrow's flights should be made up of newer and cleaner aircraft (CAEP 6 and newer) by 2020. At the end of 2015, 54.8% of our total flights were already made up by CAEP 6 and newer aircraft so we can be even more ambitious.

Key partners: airlines

In 2016, we will:

- Engage with airlines at a senior level to encourage them to continue to bring their newest and cleanest aircraft to Heathrow
- Work with airlines to revise our future projections of the aircraft fleet mix in 2020 in order to set a new target by June.

2

Continue to drive down emissions from aircraft at the gate

We have invested around £20 million on infrastructure to supply pre-conditioned air (PCA) and electrical power at most gates so that aircraft don't need to run their on-board generators whilst at the gate and emissions from generators can be avoided. In 2015, we set a target to increase the total use of PCA by 15% over the previous year. Thanks to collaboration with airlines and ground handling companies, we exceeded that target significantly, with a 67% increase.

Key partners: airlines and ground handling companies

In 2016, we will:

- Invest a further £16.2million beginning this summer to upgrade our PCA infrastructure
- Increase total PCA consumption by another 25% (over 2015) by continuing to work in partnership with our airlines and ground handling companies to encourage regular usage.

3

Improve taxiing efficiency

Taxiing produces just over 40% of our ground-based aircraft emissions. To help reduce emissions, noise and fuel use during taxiing, we developed a code of practice with the air transport industry to encourage aircraft to turn off one or more engines during taxiing – known as reduced-engine taxiing (RET). During 2015 we introduced a new system to record the use of RET on departures and it was used on just over 21% of eligible departures.

Key partners: airlines and NATS

In 2016, we will:

- Revise our AIP (operating handbook) to incorporate guidelines on RET and to make it mandatory for aircraft to report RET on departures
- Work with NATS to introduce systems to record RET on arrivals by end of year
- Increase RET to at least 25% for eligible departures by working with airline partners.



Airport traffic



4

Charge forward with electric cars and buses

One of the ways we aim to reduce emissions from traffic associated with the airport is by providing electric-vehicle charging infrastructure in short-stay passenger, taxi feeder, long-stay, and colleague car parks. In 2015, we upgraded 13 of the 21 charging points in our short-stay car parks and investigated how to introduce points for our taxi feeder, long-stay passenger and colleague car parks.

Key partners: passengers and airport colleagues

In 2016, we will:

- Invest an additional £2m on electric vehicle charging infrastructure throughout Heathrow
- Trial electric buses on colleague car park routes by August in partnership with our colleague bus operators
- Investigate using the Heathrow Taxi Feeder Park as a trial site to charge plug-in hybrid black cabs.

5

Heathrow Cycles

In the last five years, we have reduced single occupancy car journeys by airport colleagues to 50.9%, a drop of over 10%. Together with discounted public transport and operating the world's largest single-site car share scheme, cycling has been an important focus. With over 1,000 members, the Heathrow Cycle Hub is the first and only dedicated on-site bike shop at a UK airport, and over 800 colleagues commute to the airport by bike every day.

Key partners: airport colleagues

In 2016, we will:

- Launch a cycling strategy aimed at creating the right environment and infrastructure for cyclists on the journey to and from the airport through collaboration with local authorities and stakeholders
- Put in place our own dedicated Cycling Officer and Heathrow cycle app by April to encourage even more colleagues to cycle to work regularly.

6

Drive sustainable freight operations

Heathrow is a major freight hub and is the largest freight port by value in the UK. As a result, there is an established network of logistics companies around the airport. Each year, Heathrow handles more than 1.5m tonnes of cargo. This cargo also adds to the volume of traffic on the road network and to local emissions.

Key partners: freight companies

In 2016, we will:

- Keep pushing for greater consolidation of vehicle loads at Heathrow and aim to provide an online venue for freight operators to buy and sell empty space on their trucks by July
- Establish a sustainable freight partnership with operators by September with the objective of reducing emissions
- Develop and publish our plans for building a call-forward cargo facility to reduce congestion, idling, and emissions of vehicles coming to Heathrow by the end of the year.



Airside vehicles



Leadership

7

Plug in more electric airside vehicles

More than 400 companies operate around 8,000 vehicles airside at Heathrow. They already utilise our hundreds of charging points for their fleets of electric baggage trolleys. In 2015, we invested another £200k to support charging of electric vehicles. We also conducted trials with the Heathrow Clean Vehicle Partnership to understand the costs and operational needs of a range of vehicles and charging points.

Key partners: airport companies

In 2016, we will:

- Make use of the data gathered from last year's trials to help inform our overall investment of £2m by the end of the year to install more airside charging points for electric vehicles
- Trial electric buses on the airside inter-terminal service by September
- Replace another 30 of our vehicles with electric or plug-in hybrid vehicles by the end of 2016 helping us get to just under 30% of our 2020 target.

8

Provide a pool of low emission vehicles

In 2015, we worked in partnership with ground handling companies to trial pooled ground support equipment, which helped us to put out a contract for suppliers of pooled equipment. The trials indicate that we could reduce our ground support fleet by up to 30% as well as helping our partners prepare for the 2025 introduction of airside vehicle emission standards in line with London's ULEZ.

Key partners: ground handling companies

In 2016, we will:

- Work with our partners to contract a supplier to provide a pooled fleet of baggage belt loaders and aircraft stairs to be used collectively by ground handling companies
- Ensure that all vehicles provided will be low emission and electric where possible.

9

Efficient driver training and education

In order to reduce emissions and fuel costs, we have worked with airport partners to include training on 'eco-driving' techniques that educate drivers to drive more efficiently and less aggressively. These sorts of techniques have been shown to improve fuel efficiency up to 15% and deliver emission reductions of a similar magnitude.

Key partners: airside colleagues

In 2016, we will:

- Complement our existing training programme by adding eco-driving questions to our airside driving test to positively influence driving behaviours further and reduce emissions.

10

Host an air quality conference

As outlined in our Air Quality Strategy, we compare our performance and standards against other leading airports and organisations to ensure that we learn from innovative and effective approaches to reduce emissions. In 2015, we undertook research to understand how our practices to reduce emissions rank against other leaders and to help us learn from actions that have been implemented elsewhere.

Key partners: aviation industry and academics

In 2016, we will:

- Host a major new air quality and aviation industry conference to share best practice in emissions management, foster collaborative research opportunities, and lead wider change across the industry.

Our 2016 Emissions Blueprint in context

Through collaboration and partnership with stakeholders around the airport and across London, emissions of ground-based NOx from the airport have reduced by 16% (between 2008/9 and 2013). This Blueprint contains the top ten actions we're focusing on this year to further reduce emissions. But we won't stop there. We are also committed to working with local partners to reduce emissions for which they are responsible.

Heathrow's Air Quality Strategy

Heathrow's Air Quality Strategy is part of this plan. It has been helping to reduce emissions since 2000. It focuses on concrete actions to reduce emissions from Heathrow's four main sources of NOx: aircraft, airport traffic, airside vehicles, and energy.

It includes three main objectives:

1. Accurately measuring the contribution to local air quality from airport-related activities
2. Effectively reducing the emissions we control, guide or influence
3. Working with stakeholders to increase understanding and awareness of local air quality

This Blueprint is our annual plan to help deliver our objectives.

Responsible Heathrow

Working together to improve air quality

Through collaboration and partnership with stakeholders around the airport and across London, emissions of ground-based NOx from the airport have reduced by 16% (between 2008/9 and 2013). This Blueprint contains the top ten actions we're focusing on this year to further reduce emissions. But we won't stop there. We are also committed to working with local partners to reduce emissions for which they are responsible.

The **Heathrow Air Quality Working Group** is a partnership between us, our neighbouring local authorities (Hillingdon, Hounslow, Slough and Spelthorne), the GLA, TfL and the Environment Agency. We are currently working in partnership to develop a regional strategy to reduce emissions from road traffic in the West London area. The group also works collaboratively to monitor, share and publish data from more than 20 air quality recording stations in the surrounding area. For up-to-date air quality data for the surrounding area and information on emissions around Heathrow, visit: www.heathrowairwatch.org.uk

For over 12 years, the **Heathrow Clean Vehicle Partnership** has encouraged collaboration between over 20 Heathrow companies to reduce emissions through trials of low and zero emission vehicles, driver training and emissions monitoring tools, workshops and networking events to share best practice.

We raise over £2m per year through our transport levy on car parks to fund initiatives to promote more sustainable transport to and from the airport. Working collaboratively through the **Heathrow Area Transport Forum** and the airport business community we have delivered innovative solutions including the world's largest single site car share scheme, the UK's only airport 'free travel zone' and our own cycle hub.

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Heathrow
Making every journey better

By delivering concrete actions, we've helped reduce total airport emissions of ground-based NOx by 16% between 2008/9-2013

This blueprint builds on our strong performance, reducing emissions from the four main ground-based sources of NOx.



Aircraft activity

7% ▼

Emissions from all ground-based aircraft activity, including take-offs, landings and taxiing, in which aircraft wheels are in contact with the ground.

70% of ground-based NOx



Incentivise more modern and cleaner aircraft through NOx based landing charges

£20m
Investment



In pre-conditioned air since 2005, reducing aircraft emissions by an estimated 74 tonnes per year



Airport traffic

10% ▼

Emissions from vehicles carrying passengers, staff and goods to, from and around Heathrow, occurring within an 11x11km grid centred on the airport in line with agreed upon air quality modelling methods.

17.6% of ground-based NOx



World's largest car share scheme with c8,000 participants across 250 companies



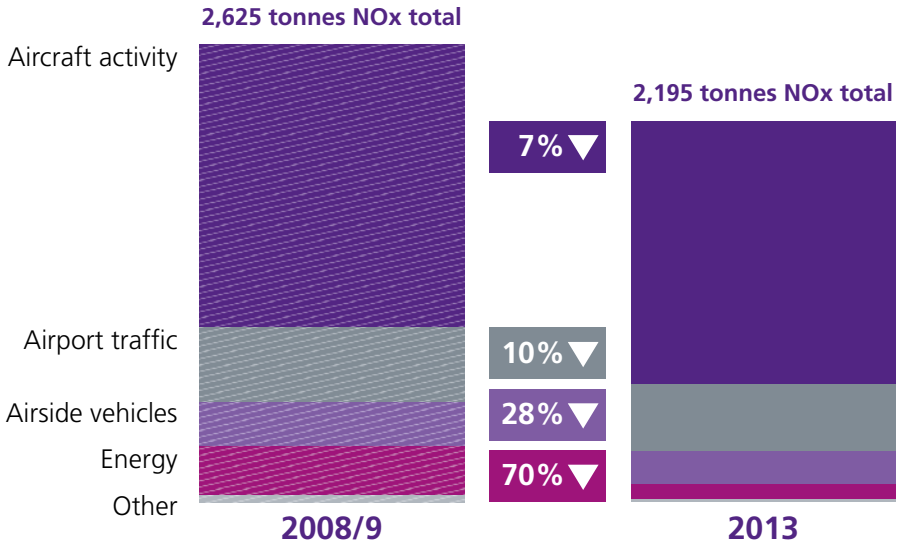
UK's only free travel zone



Electric vehicle charging points in our short-stay passenger car parks

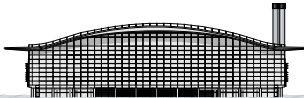


Zero emission, driverless pods from the car park to the terminal, removing over 70,000 annual bus journeys



Airside vehicles **28% ▼**

Emissions from vehicles and specialist equipment, such as catering vehicles, aircraft tugs and baggage loaders, operating on the airfield.



Energy **70% ▼**

Emissions from on-site generation of heat and electricity to power the airport.

8.5% of ground-based NOx

3.9% of ground-based NOx



Clean Vehicle Partnership

More than 20 airport companies introducing cleaner, low and zero emissions vehicles

1,000
Electric vehicles

Promoted the uptake of 1,000 electric vehicles airside, one of Europe's largest fleets



Nearly 200-tonne NOx reduction through modernisation of the heating network

