December 2010

Clearing the air
Executive Summary

The Mayor's Air Quality Strategy

MAYOR OF LONDON

Greater London Authority

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Clearing the air - summary

What is the problem?

London's air quality has improved dramatically since the 1950s when legislation was introduced to prevent the infamous 'pea souper' smogs that blighted the capital. But despite this, air pollution is still an issue for Londoners, affecting health and everyday quality of life. Along with many other European cities, parts of London are not meeting EU targets for the most harmful pollutants nitrogen dioxide (NO_2) and fine particulate matter (PM_{10}).

The Mayor is already delivering policies that are making the air in London cleaner. Programmes that offer people alternatives to the car, which improve energy efficiency in homes and offices, which smooth traffic flow, all help reduce emissions. This Strategy proposes a further comprehensive package of measures that, together with strong action at the national level, can help bring London's air quality up to EU targets and reduce Londoners' exposure to pollution. This is an essential step towards improving air quality in London - most importantly to improve the health and quality of life of Londoners.

Air pollution has an impact on everyone living and working in London, but mainly on the most vulnerable people in our city such as children, older people and those with heart and respiratory conditions. A study carried out for the Greater London Authority (GLA) has estimated that poor air quality could contribute to over 4,000 deaths per year in London. Research has also shown that people living in deprived areas are disproportionately affected by poor air quality, in part because these areas are often near busy roads, which tend to have higher levels of pollution caused by road traffic.

What causes poor air quality in London?

Tackling air pollution is challenging. Weather conditions can cause huge variations in levels of pollutants. Pollution levels vary dramatically and pollution 'episodes' can mean unexpected, sudden elevations in the risk of exposure in certain locations. Pollution blown in from outside London contributes significantly to problems in the capital. In central London, around 40 per cent of PM_{10} concentrations are caused by emissions from outside the capital. A similar proportion of NO_2 concentrations across London are caused by emissions not generated in the capital.

There are just a small number of areas in central London where levels of PM_{10} are particularly high (shaded yellow through to red in Figure 1), though for health reasons it is important to reduce levels across London. The majority of PM_{10} emissions from within central London come from road transport (see Figure 2). Of this, over a third comes from

tyre and brake wear, which is difficult to tackle. In central London where the highest concentrations of PM_{10} occur, taxis are a particular problem, accounting for over 30 per cent of emissions from exhausts.

Figure 1 Number of days when mean PM_{10} concentrations are above 50 µg/m^3 in 2008

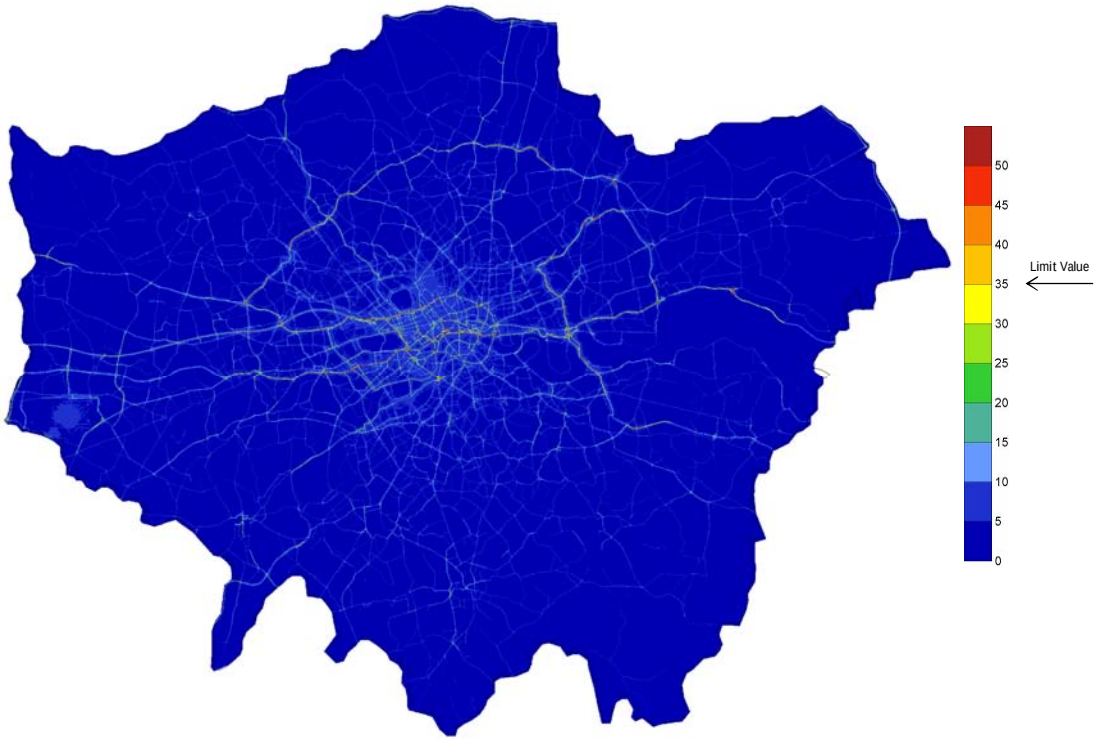
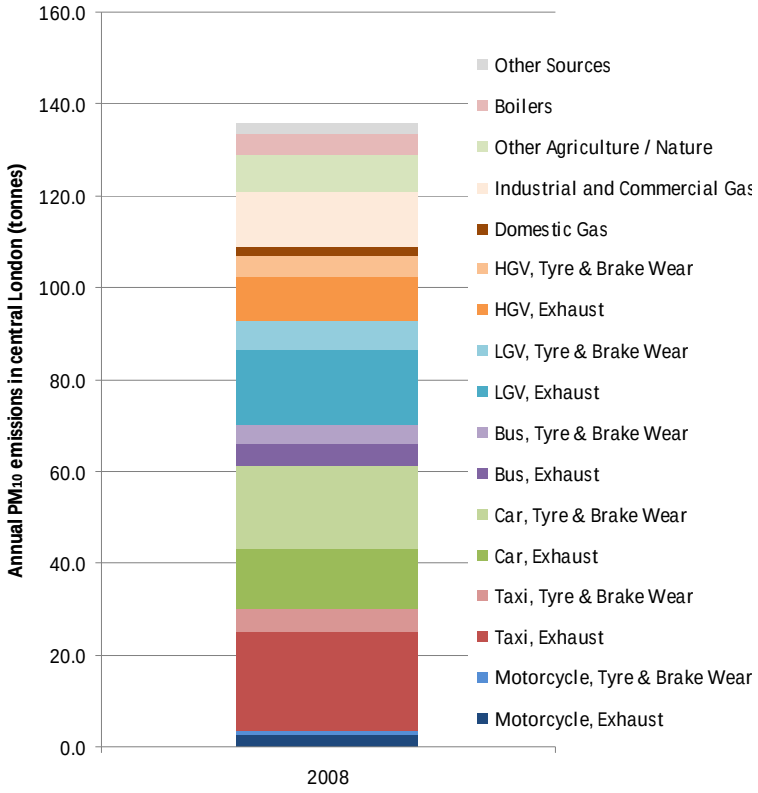


Figure 2 PM_{10} emissions sources in central London in 2008



Modelling shows that almost all of London is compliant with EU limit values for $PM_{2.5}$, the most harmful form of particulate matter. However, since the sources of $PM_{2.5}$ are largely the same as those for PM_{10}, it is expected that the measures in this Strategy will result in further reductions in levels of $PM_{2.5}$ and a reduced impact of air quality on human health.

High concentrations of NO_2 are a problem across most of inner London and in the Heathrow area (shaded yellow, orange, through to red in Figure 3.). Very large reductions in emissions are needed to meet legal targets for NO_2 – far higher than are needed for PM_{10}. Road transport is the primary source of emissions of oxides of nitrogen (NO_x), of which NO_2 is a part, but a significant proportion is from domestic and commercial gas emissions relating to heating (see Figure 4).

Figure 3 NO_2 annual mean concentrations ($\mu g/m^3$) for the year 2008

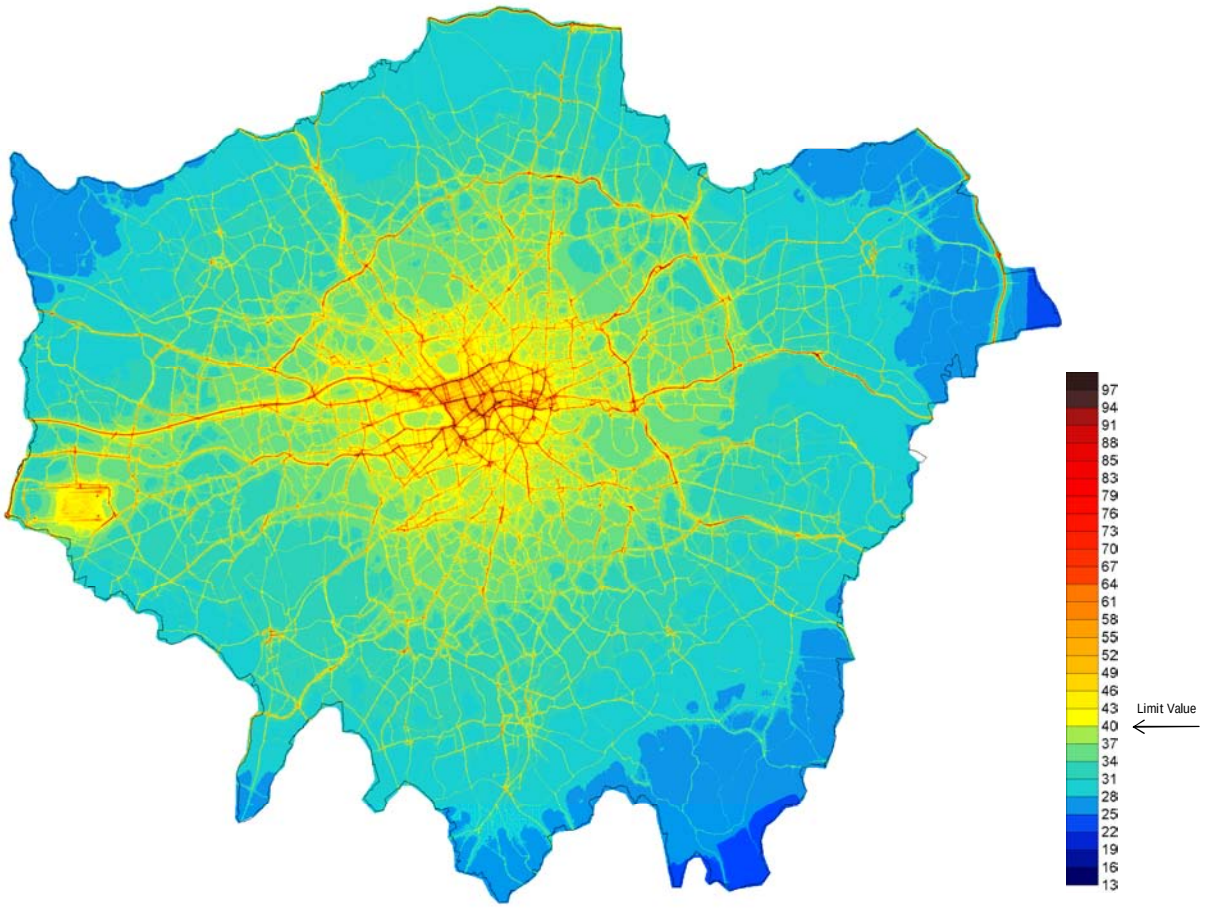
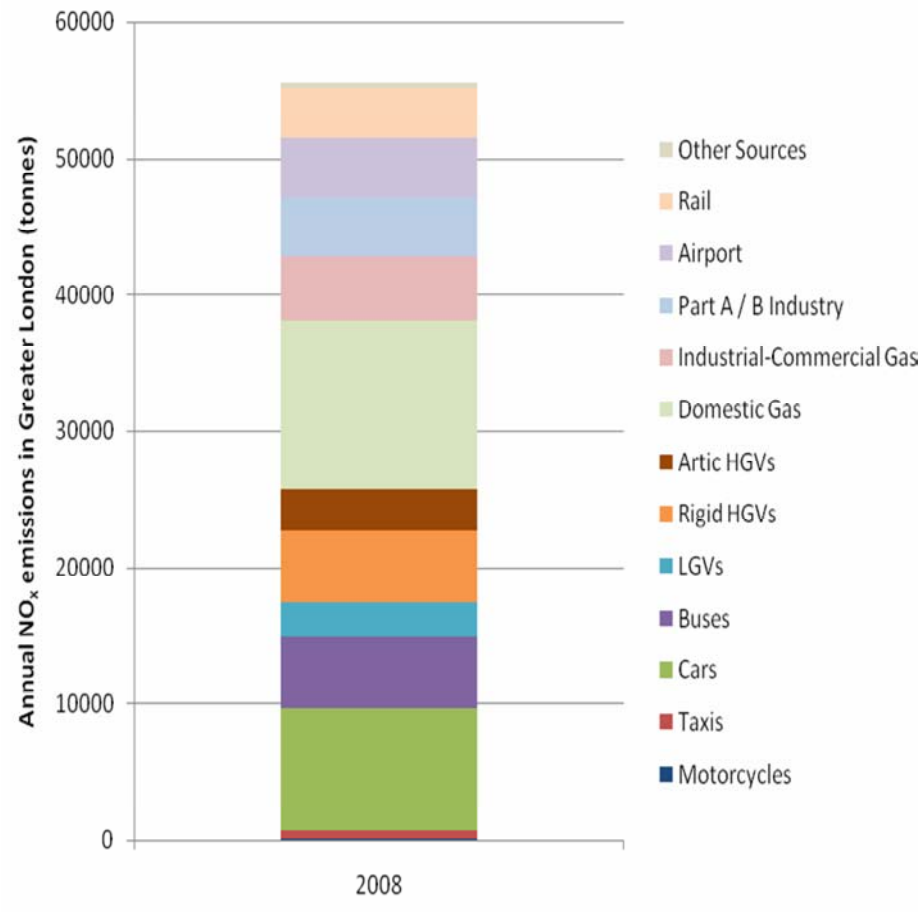


Figure 4 NO_x emissions in Greater London in 2008



What the Mayor will do

The Mayor wants London to be one of the cleanest, greenest cities in the world to ensure that people living here enjoy a great quality of life. This Air Quality Strategy sets out actions to improving London's air quality and includes measures aimed at reducing emissions from transport, homes, workplaces and new developments. It also sets out how Londoners can reduce their own emissions, and, especially for vulnerable people, reduce their risk of exposure.

The Mayor is already investing hundreds of millions of pounds delivering a range of measures that are tackling air pollution. This includes unprecedented investment to boost cycling, expansion of 'smarter travel' measures, a brand new programme of investment encouraging the uptake of electric vehicles and converting London's bus fleet to hybrid or low emission.

The Mayor is proposing further transport policies that will make London's transport network even cleaner and greener. These proposals include:

- Cleaning up London's bus fleet so that all buses meet Euro IV emissions standards for both NO_x and PM_{10} by 2015. A Euro IV bus emits roughly a third less NO_x than a bus made in 2000 (Euro III)

- Cleaning up London's taxi and Private Hire Vehicle (PHV) fleet PHVs by introducing age limits to remove the older, more polluting vehicles from London's roads. The Mayor will also work with the industry to develop a taxi capable of zero tailpipe emissions by 2020.

- Including larger vans and minibuses in the Low Emission Zone (LEZ) from January 2012 – these vehicles will have to meet the Euro 3 standard for PM to drive without charge in London.

- Introducing a new NO_x standard for the LEZ from 2015.

- Reducing emissions from freight vehicles by promoting Delivery and Servicing Plans and freight consolidation facilities.

- Working with boroughs to implement targeted action plans at air quality priority locations. Trials of dust suppressants are already underway in central London. Other

measures will include: tackling vehicle idling, better traffic management to smooth traffic and deploying low emission buses in these areas.

A package of non-transport policy measures is also proposed to reduce localised pollution sources. The highlights include:

- Working with boroughs to make better use of the planning process so that new developments are 'air quality neutral or better'.

- Updating best practice guidance on reducing dust emissions from construction sites and creating Supplementary Planning Guidance to encourage its implementation across London.

- Scaling up London's schemes to retrofit homes and workplaces to improve energy efficiency.

- Introducing emission standards for new biomass boilers and combined heat and power systems.

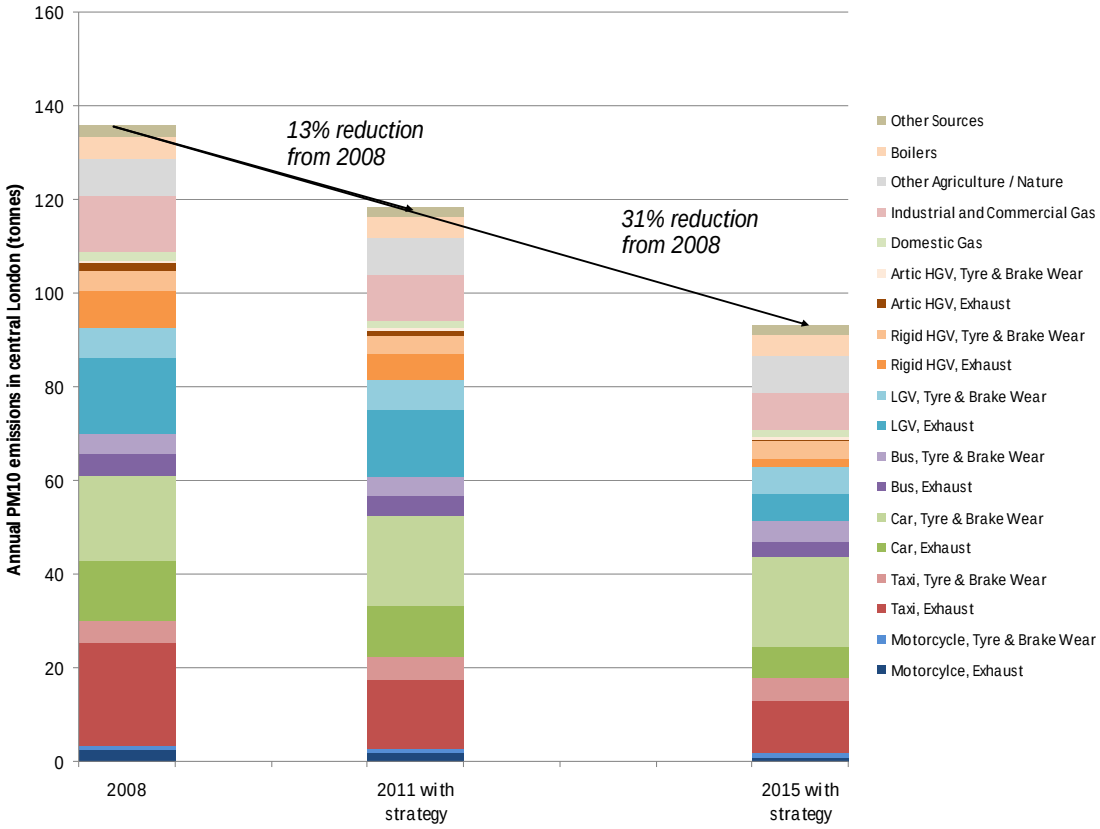
- Raising public awareness to encourage all Londoners to take action to reduce their emissions, from travel choices to energy efficiency.

- Improving information for the most vulnerable Londoners to enable them to reduce the risk to their health from poor air quality.

What will this Strategy achieve?

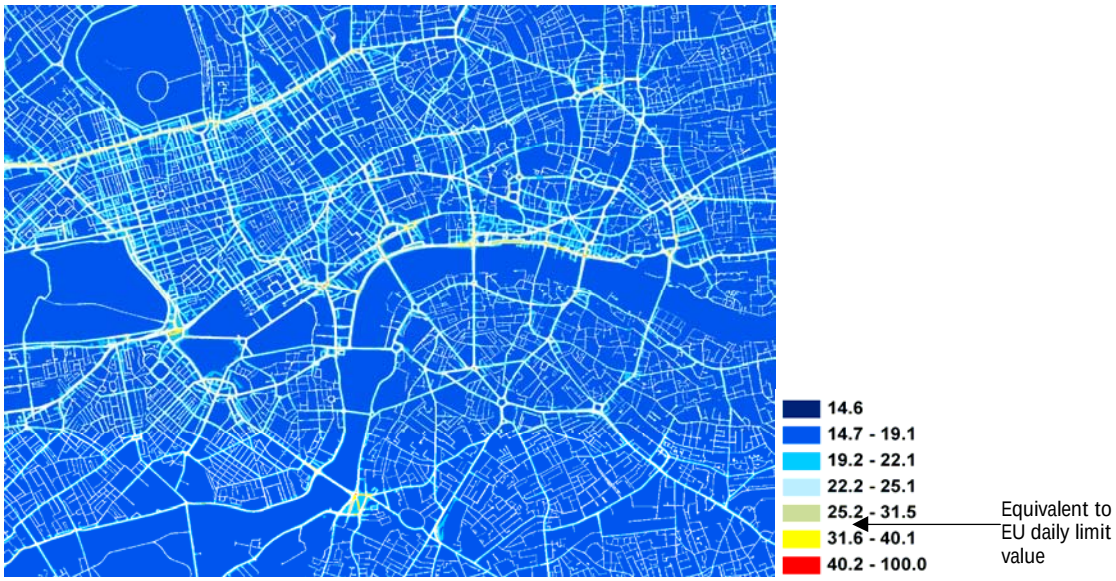
The measures in this Strategy, along with natural fleet turnover, will reduce PM_{10} emissions from about 135 tonnes in 2008, to 119 tonnes in 2011, and to 93 tonnes in 2015. There are just a small number of locations in central London that are at risk of exceeding PM_{10} limit values in 2011, which is why some of the policies in the Strategy focus on central London. These include packages of local measures, such as applying dust suppressants that commenced in autumn 2010. For health reasons, however, it is still important to reduce levels of PM_{10} and $PM_{2.5}$ even below levels required by limit values, and many of the measures included in the Strategy, such as tighter requirements for the London Low Emission Zone and promoting low-emission vehicles will have benefits across the whole of Greater London.

Figure 5 Estimated reductions in PM_{10} emissions from all sources in Central London with the implementation of the Strategy



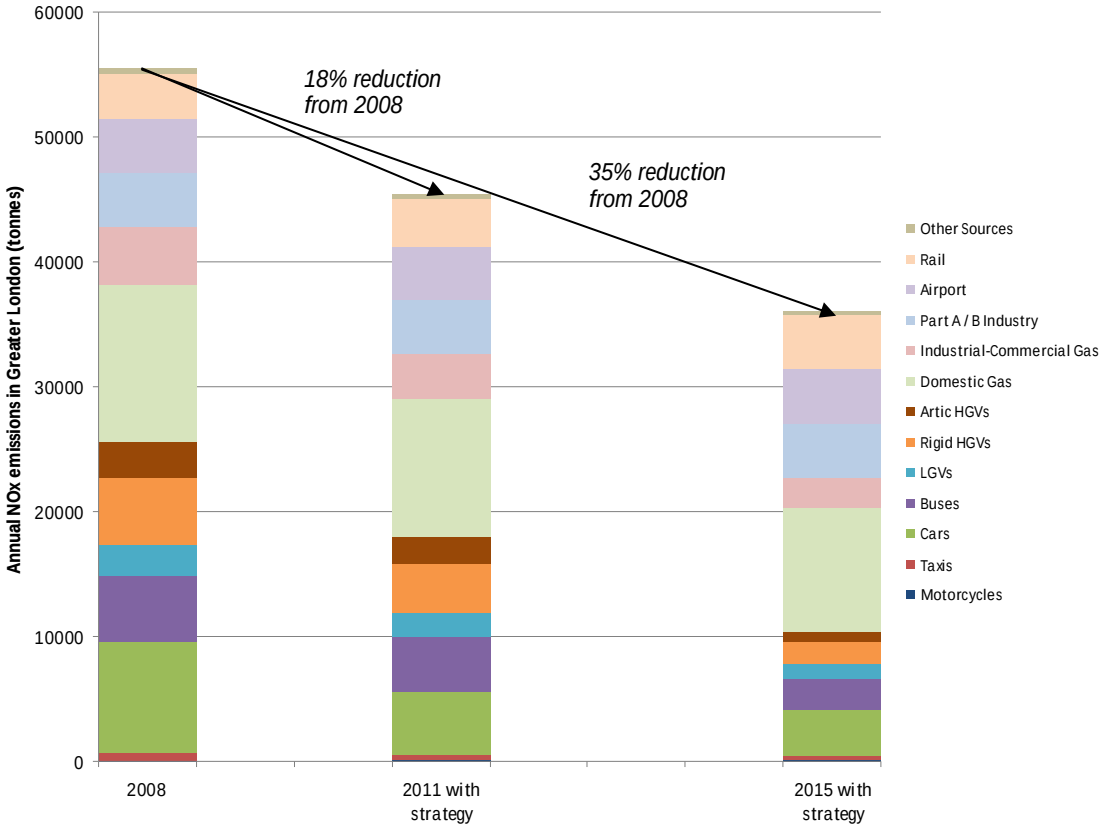
Modelling shows that this level of emissions reduction will allow London to meet EU targets for PM_{10} by 2011 (see Figure 6).

Figure 6 Annual average PM10 concentration with full implementation of the Strategy in 2011



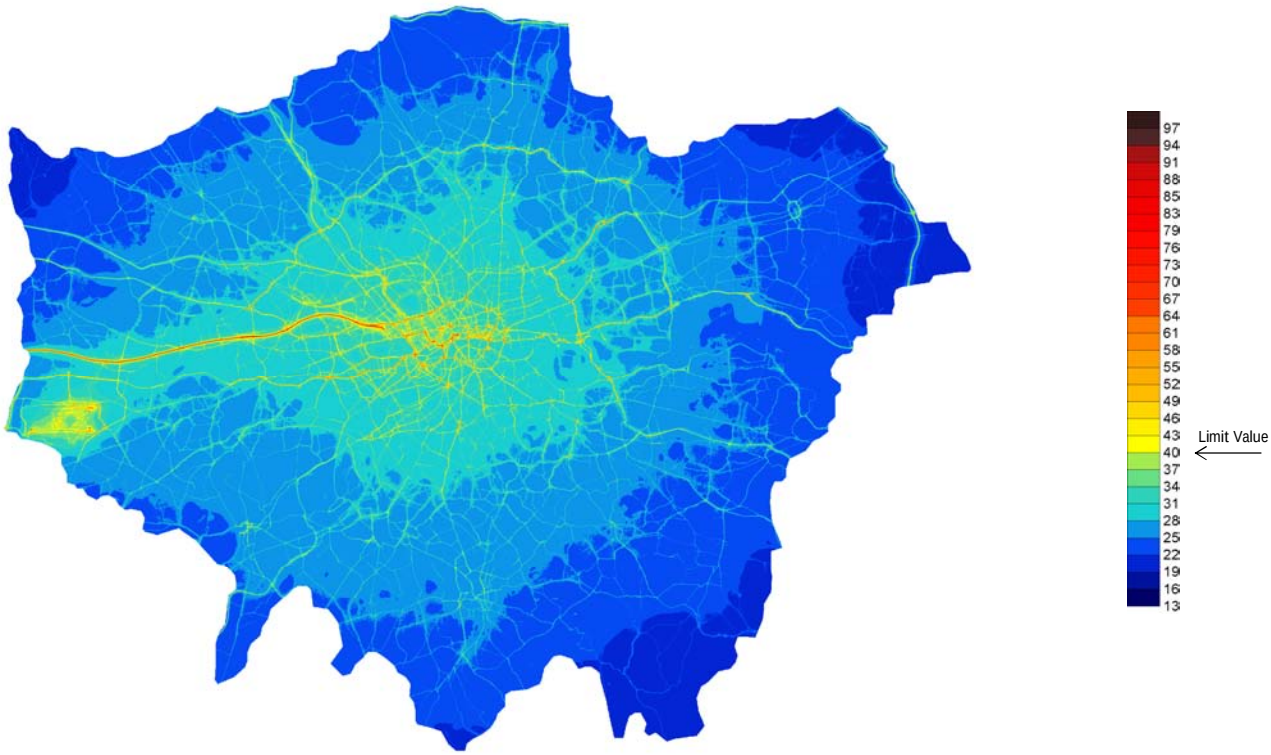
As a result of the measures in this Strategy and natural fleet turnover, NO_x emissions in Greater London will be about 20,000 tonnes lower in 2015 compared to 2008 (shown in Figure 7). All combustion processes produce NO_x. As NO_x easily converts to NO_2 in air, in order to reduce NO_2 concentrations it is essential to control emissions of NO_x; this is why the policies in this Strategy focus on reducing emissions of NO_x.

Figure 7 Estimated reduction in NO_x emissions in Greater London from all sources (including planned measures and natural turn over of vehicle fleet)



This will significantly lower concentrations of NO_2 across London (see Figure 8). Yet even this scale of action in London alone will not allow NO_2 limit values to be met in the capital by 2015. That is why my Strategy will also include measures that need to be taken at national level by the Government to achieve NO_2 limit values in London by 2015.

Figure 8 Annual average NO_2 concentrations with full implementation of the Strategy in 2015



Delivering the Strategy

The Mayor will work closely with the EU, central Government, the boroughs and the business sector to deliver the measures in this Strategy. Individual Londoners can also play their part, for example by cycling or walking to the local shops instead of using the car, wherever possible or by taking measures to save energy.

London's air quality is a shared challenge, which requires action from the Mayor and Government. NO_2 levels in Greater London and other UK urban locations require remedial action by the Government. Sources outside the Mayor's control, along with pollution from outside London, contribute significantly to poor air quality in the capital. If NO_x emissions from railways, airports and industrial sources – sources over which the Mayor has little control – were halved by 2015, this would result in a further reduction of 6,000 tonnes of NOx emissions.

That is why this Strategy includes policies for other organisations, including the Government, to implement as part of a package of measures that will meet NO_2 limit values in London by 2015. The Mayor considers that the Government should implement national measures such as tax incentives for the cleanest vehicles, vehicle retrofit programmes, vehicle scrappage schemes, a national LEZ framework and energy efficiency programmes that will improve air quality in all urban areas, including London.

The Mayor will discuss with the Government how it can help to fund and deliver measures in this Strategy. The current GLA and functional body settlement from the Government did not include provision for this level of action to improve air quality as it had been expected that planned interventions and natural fleet turnover would have resulted in greater improvements in air quality than have been achieved. Over the coming months, the Mayor will continue to work with Government to develop a joint action plan for air quality in the capital that is adequately resourced.

The Strategy will be kept under continuous review and if it becomes clear that changes are necessary in order to meet relevant air quality limit values, consideration will be given to making and implementing any required revisions.

Other formats and languages

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Chinese
如果需要您母語版本的此文件，
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Hindi
यदि आप इस दस्तावेज की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

Vietnamese
Nếu bạn muốn có văn bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

Bengali
আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন্ নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Greek
Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

Urdu
اگر آپ اِس دستاویز کی نقل اپنی زبان میں چاھتے ھیں، تو براہ کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Turkish
Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

Arabic
إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

Punjabi
ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Gujarati
જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

GREATER**LONDON**AUTHORITY