

Friends of the Earth

AIR POLLUTION BRIEFING

March 2015

INTRODUCTION AND SUMMARY

1. The health impacts:

- Air pollution is one of the UK's biggest environmental cause of premature death, killing 29,000 people prematurely a year from fine particles, but this could double if the effects of toxic NO₂ gas are added, and there are health effects below current EU legal limits
- Air pollution is carcinogenic and hits the most vulnerable and disadvantaged hardest – a parliamentary committee said “new schools, hospitals and care homes must not be built next to air pollution hotspots”
- Air pollution affects all road users, but pedestrians and cyclists suffer least
- During the worst air pollution episodes even the healthy are advised to “reduce physical exertion, particularly outdoors...”.

2. Links with climate change, costs of air pollution, and benefits of tackling it:

- Our climate is directly affected by air pollution, and sources such as traffic emissions contribute to climate change as well as air pollution, meaning there are strong co-benefits from tackling the issues together – especially with air pollution costing up to £20 billion annually
- Strong action can drive green innovation, and reduced traffic helps business through reduced congestion – while bad air and congestion makes cities unattractive

3. Pollutants and meeting our obligations:

- Air pollution is a combustion issue with traffic the biggest problem, and diesel vehicles the worst – and EU legal limits are not being met
- The 3 key pollutants of concern are: particulates (largely invisible fine particles) on which the UK is just about meeting EU legal limits (but not those recommended by the World Health Organisation); the toxic gas Nitrogen Dioxide/NO₂ on which the UK has failed to meet EU legal limits by the latest possible extended deadline of 2015 in 38 of the UK's 43 zones (and is now not set to comply everywhere until sometime after 2030); and ground level ozone/O₃ which is formed with NO₂ and sunlight, creating smog and leading episodes of high air pollution
- On NO₂, legal action has resulted in an EU ruling that the UK courts can and should order the government to take stronger action ASAP (with the implication that worsening traffic and pollution would delay compliance, which would be unacceptable) - and the European Commission is also pursuing its own legal action

4. Action needed:

- The government, the London Mayor and Local Authorities must take whatever combination of measures needed to meet EU legal limits ASAP through: cleaner vehicles; cutting traffic levels through better cycling facilities and public transport, low-emission zones and charging schemes; a moratorium on road-building and airport expansion
- Public warnings when air pollution is high

1. WHY IS AIR POLLUTION A PROBLEM - THE HEALTH IMPACTS

Air pollution is one of the UK's biggest environmental cause of premature death, killing 29,000 people prematurely a year from fine particles¹ (3-4,000 in London alone²). The percentage of attributable deaths for each local authority varies across the country – but is worst in London³.

However if the effects of the toxic gas NO₂ are added, the number of premature deaths is expected to double⁴, and the World Health Organisation/WHO has found health effects below current EU legal limit concentrations⁵. The WHO has also declared outdoor air pollution and diesel exhaust, carcinogenic⁶.

The most vulnerable tend to be the hardest hit: the young, elderly, those with some existing health conditions, as well as the most disadvantaged (who tend to live near main roads where pollution is worst)⁷. The House of Commons Environmental Audit Committee/EAC has said “new schools, hospitals and care homes must not be built next to air pollution hotspots, and existing schools next to busy roads should also be fitted with air filtration systems”⁸.

Air pollution affects all road users, but pedestrians and cyclists are exposed least – particularly if using quieter side streets⁹. During episodes of high air pollution the health advice even for the healthy general population is to “reduce physical exertion, particularly outdoors...”¹⁰.

2. LINKS WITH CLIMATE CHANGE, COSTS OF AIR POLLUTION, AND BENEFITS OF ACTION

As well as fine particles directly affecting the climate¹¹, many of the causes of air pollution – such as traffic emissions - are also contributors to climate change. There are strong co-benefits from tackling these issues together¹² – especially with government research putting the cost of the health and environment impacts of air pollution at up to £20 billion annually¹³.

Strong action on air pollution can drive green innovation, and reduced traffic can also help business through reduced congestion. On the other hand bad air and congestion makes cities unattractive to live or work in, or visit – in a survey of world cities “London came 38th, having lost marks for pollution and traffic jams”¹⁴.

3. POLLUTANTS AND MEETING OUR OBLIGATIONS

The UK is not meeting¹⁵ EU legal limits¹⁶. Air pollution in the UK is largely a combustion issue, caused by the burning of fossil fuels. This includes power generation & boilers, but traffic is the biggest problem – and diesel vehicles are the worst (though petrol engines are also a source). There are three main air pollutants of concern:

- A. **PARTICULATES:** these dangerous fine particles penetrate into the lungs and are largely invisible (they are a fraction of the width of a human hair)¹⁷. They come from traffic (both exhaust and brake and tyre wear), as well as building dust and some natural sources. The EU had an annual and a daily limit for PM₁₀s to be met by 2005, but needed an extension to 2011 and now just about complies. However the WHO Guideline level is twice as stringent as the EU limit, and it is considered there is no safe limit. There are new limits for smaller PM_{2.5} particulates.

- B. NITROGEN DIOXIDE/NO₂ is a toxic gas¹⁸ and comes from traffic but also gas boilers. The EU has an annual and an hourly limit (which are aligned with the WHO Guideline levels). The EU limits should have been met by 2010 with extensions possible till 2015 (only 5 of the UK's 43 zones for air quality purposes complied with the annual limit by that date). The other 38 zones are still exceeding the EU legal limits – with government plans showing that the worst of those (the London, Birmingham & Leeds urban areas) are now not set to comply until sometime after 2030 (ie at least 20 years after the original deadline)¹⁹. Pollution levels on some London streets are 2- 3 times the annual EU legal limit, with London perhaps having the worst monitored NO₂ in the world²⁰.

The failure to tackle NO₂ led to Client Earth²¹ taking a case to the UK Supreme Court, which then sought clarification from the EU court – which recently ruled *“it is for the competent national court... to take...any necessary measure, such as an order ... so that the authority establishes the plan required by the directive to ensure... that the period during which the limit values are exceeded is as short as possible”*²². This means that the UK Supreme Court can and should order the government to produce stronger plans for more urgent action to cut NO₂ as soon as possible – and means that worsening traffic and air pollution would be delaying compliance, which would be unacceptable. Separately the European Commission started its own legal proceedings (infraction action) against the UK Government over its failure to meet NO₂ standards – this could mean substantial fines for the UK²³.

- C. GROUND-LEVEL OZONE/O₃ is formed from NO₂ and hydrocarbons which react in sunlight to create smog²⁴. This is often worst in rural rather than urban areas and can lead to high pollution episodes²⁵ which happen several times a year.

4. ACTION NEEDED

The government, the London Mayor and Local Authorities must take whatever combination of measures needed to meet EU legal limits in the shortest possible time, through measures such as:

- A. Cleaner vehicles – including retrofitting older vehicles such as buses, and stronger standards for new vehicles, together with the necessary infrastructure such as electric charging points.
- B. Cut traffic levels such as through:
- Designing places with key amenities within easy walking and cycling distance, thus reducing the need to travel, and supporting car clubs
 - Making walking & cycling easier (which will in turn cut traffic and pollution, which will make conditions safer and healthier for more walking and cycling)
 - Investing in better and more affordable public transport
 - Strengthening or introducing traffic restrictions and charging schemes, such as Low-Emission Zones (LEZs) and Road User Charging/pay-as-you-go driving
 - A moratorium on new road-building and airport expansion to avoid adding to the problem, such as by generating extra traffic
- C. Better public warnings when air pollution is high – and to raise awareness of the action people need to take.

FURTHER INFORMATION

- Friends of the Earth is a partner in the Healthy Air Campaign/HAC (HAC policy call²⁶).
- Friends of the Earths May 2013 Briefing on air pollution²⁷.
- Contact: Jenny Bates, jenny.bates@foe.co.uk; 07884 003107

¹ Committee on the Medical Effects of Air Pollutants/COMEAP – 29,000 premature deaths attributed to long-term exposure to man-made particulate air pollution per annum:
<https://www.gov.uk/government/publications/comeap-mortality-effects-of-long-term-exposure-to-particulate-air-pollution-in-the-uk>

² GLA report – approx. 4,000 premature deaths in London from all particulates:
<https://www.london.gov.uk/priorities/environment/clearing-londons-air/air-pollution-and-public-health>

³ Public Health England figures for every UK Local Authority for attributable deaths due to man-made particulates (as total numbers and as a %):
<https://www.gov.uk/government/publications/estimating-local-mortality-burdens-associated-with-particulate-air-pollution>

⁴ Independent effects of NO₂ are expected to double premature deaths figures:
<http://erj.ersjournals.com/content/early/2014/02/20/09031936.00114713.abstract> and
<http://www.airqualitynews.com/2014/12/05/uk-nitrogen-dioxide-mortality-figures-due-next-year/>

⁵ The World Health Organisation/WHO on health effects below current EU legal limits:
<http://www.euro.who.int/en/media-centre/sections/press-releases/2013/01/newly-found-health-effects-of-air-pollution-call-for-stronger-european-union-air-policies> and
<http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2013/review-of-evidence-on-health-aspects-of-air-pollution-revihaap-project-final-technical-report>

⁶ WHO - outdoor air pollution & diesel exhaust carcinogenic (Group 1)
<http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/news/news/2013/10/outdoor-air-pollution-a-leading-environmental-cause-of-cancer-deaths>
and www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf

⁷ Healthy Air Campaign – those most at risk: <http://healthyair.org.uk/am-i-at-risk/>

⁸ Environmental Audit Committee/EAC report:
<http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/news/report-air-quality/>

⁹ Healthy Air Campaign – healthiest transport option:
<http://healthyair.org.uk/healthiest-transport-option-video/>

¹⁰ Government daily Air Quality Index (from 1 low to 10 very high) and health advice:
<http://uk-air.defra.gov.uk/air-pollution/daqj>

¹¹ UNEP - Climate change and air pollution:
http://www.unep.org/ccac/Portals/50162/docs/publications/Time_To_Act/SLCP_TimeToAct_lores.pdf

¹² Co-benefits – climate change and air pollution:

<http://healthyair.org.uk/healthy-air-campaign-support-fourth-carbon-budget/>,
http://www.theccc.org.uk/wp-content/uploads/2013/12/1785a-CCC_AdviceRep_Singles_1.pdf
(Chapter 4 from page 62, section 6 'wider health and environmental impacts' from page 85),
<http://www.theccc.org.uk/wp-content/uploads/2013/12/AEA-Review-of-the-impacts-of-carbon-budget-measures-on-human-health-and-the-environment.pdf> and
<https://www.foe.co.uk/blog/how-do-rather-better-job-climate-economics-treasury>

¹³ Healthy Air Campaign – cost of air pollution: <http://healthyair.org.uk/the-problem/>

¹⁴ World liveable cities - London 38th:
<http://www.telegraph.co.uk/expat/expatnews/10648488/Viennas-the-most-liveable-city-but-polluted-London-misses-out.html>

¹⁵ Defra 2013 Air Quality report: <http://uk-air.defra.gov.uk/library/annualreport/>

¹⁶ EU air pollution legal limits: <http://ec.europa.eu/environment/air/quality/standards.htm>

¹⁷ Particulate air pollution (PM10s smaller than 10 microns diameter and PM2.5s even smaller):
<http://www.londonair.org.uk/LondonAir/Guide/WhatIsPM.aspx>

¹⁸ Nitrogen Dioxide/NO₂ air pollution:
<http://www.londonair.org.uk/LondonAir/Guide/WhatIsNO2.aspx>

¹⁹ Government estimated dates for compliance on NO₂: http://uk-air.defra.gov.uk/assets/documents/no2ten/140708_NO2_projection_tables_FINAL.pdf

²⁰ Oxford Street levels of air pollution:
<http://www.londonair.org.uk/london/asp/news.asp?NewsId=OxfordStHighNO2&StartIndex=21>

²¹ Client Earth legal challenge: <http://www.clientearth.org/news/press-releases/eu-court-rules-uk-government-must-act-to-clean-up-deadly-air-pollution-2699>

²² Court of Justice of the EU ruling on the Client Earth case:
http://www.foe.co.uk/resource/press_releases/uk-courts-can-make-govt-comply-with-eu-air-pollution-rules-says-european and curia.europa.eu/jcms/upload/docs/application/pdf/2014-11/cp140153en.pdf

²³ European Commission infraction action against the UK: http://europa.eu/rapid/press-release_IP-14-154_en.htm

²⁴ Ozone/O₃ air pollution: <http://www.londonair.org.uk/LondonAir/Guide/WhatIsO3.aspx>

²⁵ Air pollution episodes: <http://www.londonair.org.uk/LondonAir/Guide/Episodes.aspx>

²⁶ Healthy Air Campaign policy call: <http://healthyair.org.uk/healthy-air-campaign-launches-policy-call/>

²⁷ Friends of the Earth May 2013 Air Pollution briefing:
<https://www.foe.co.uk/sites/default/files/downloads/air-pollution-briefing-21993.doc>