

# **Future of air quality legislation**

**Institute of Air Quality Management  
London: 17 November 2011**

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# Summary

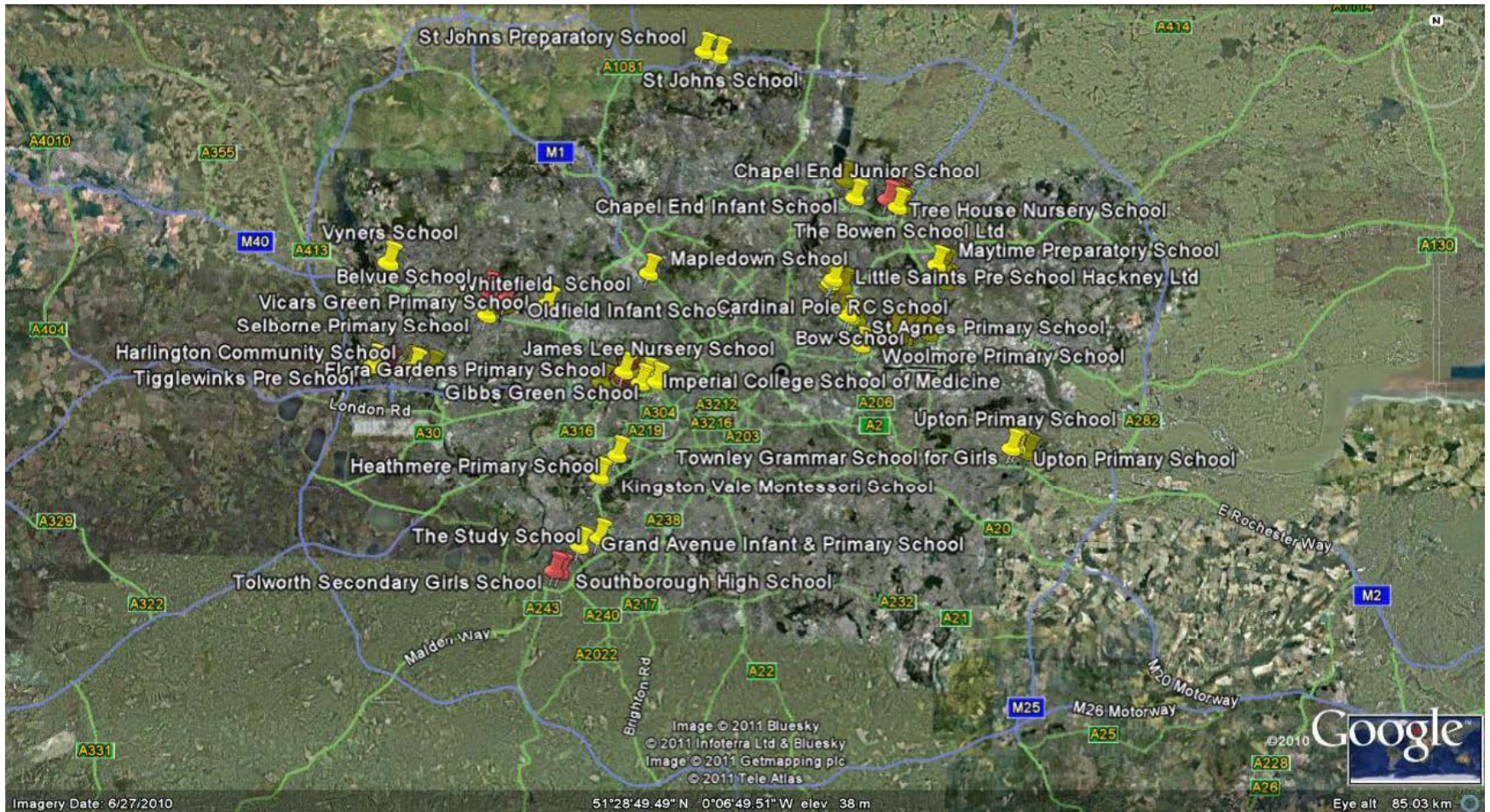
- Air pollution is much worse than most of us have realised
- Environmental Audit Committee's further report
- Health
- Legal: Parts I and II
- Measures
- Priorities for the 'Year of Air' in 2013: Parts I and II
- NO<sub>2</sub> is not just a molecule
- What next?
- The unknowns – please discuss

# Health

- Two perspectives: current and historic
- Two air pollutants: particles and gases
  - Particles:  $PM_{2.5}$  and  $PM_{10}$
  - Gas(es):  $NO_2$
- Premature death: short and/or long-term exposure
- Other impacts e.g. asthma and lung size
- Inequality issues: even worse for  $NO_2$  than  $PM_{10}$
- Indoor air quality: comply with guideline EN 13779

# London schools within 150m and 400m of busy roads

## *Roads carrying over 100,000 vehicles per day*



# Legal: Part I

- PM<sub>10</sub>: London plan unlawfully submitted. Consultation
- NO<sub>2</sub> zones:
  - 3 by 2010?; 23 by 2015?; 16 by 2020?; London 2025?
  - Time extension sought for 23 zones. Articles 22 & 23
- PM<sub>10</sub> complaint? Infraction action on PM<sub>10</sub> and NO<sub>2</sub>?
- London Plan, Olympic Route Network, Racial Equality Impact Assessment etc. etc.
- Clean Air in London's Court of Appeal case on EIR rules
- ClientEarth's judicial review due by Christmas
- What's special about 2013?

## Legal: Part II

# EU legal standards compared to WHO guidelines

Pollutant	Legal standard		WHO guideline	
	Short term	Annual mean	Short term	Annual mean
Fine particulate matter (PM <sub>2.5</sub> )	<ol style="list-style-type: none"> <li>25 µg/m<sup>3</sup> annual mean to become limit value in 2015</li> <li>20 µg/m<sup>3</sup> exposure concentration obligation based on 3-year average</li> <li>Exposure reduction target in percentage by 2020</li> </ol>		25 µg/m <sup>3</sup> 24-hour mean	10 µg/m <sup>3</sup>
Particulate matter (PM <sub>10</sub> )	35 days over 50 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>	50 µg/m <sup>3</sup> 24-hour mean	20 µg/m <sup>3</sup>
Nitrogen dioxide (NO <sub>2</sub> )	18 hours over 200 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>	200 µg/m <sup>3</sup>	40 µg/m <sup>3</sup>

# Lessons and priorities for the ‘Year of Air’: Part I

- Infraction action on NO<sub>2</sub> and PM<sub>10</sub> must continue in parallel. Countries like the UK have taken no action and are free-riding
- Baselines, monitoring and plans for PM<sub>2.5</sub> need to be robust
- Highest common denominator between European Commission, European Parliament and Council of Ministers e.g. limit values, deadlines, best practices and penalties
- ‘Red lines’: Enforcing current legislation fully is the base case. Any changes must provide continuity and ensure the further tightening of legal and health protections
- Sort air quality: sort air pollution and sustainability. It’s about political will, behavioural change and technology

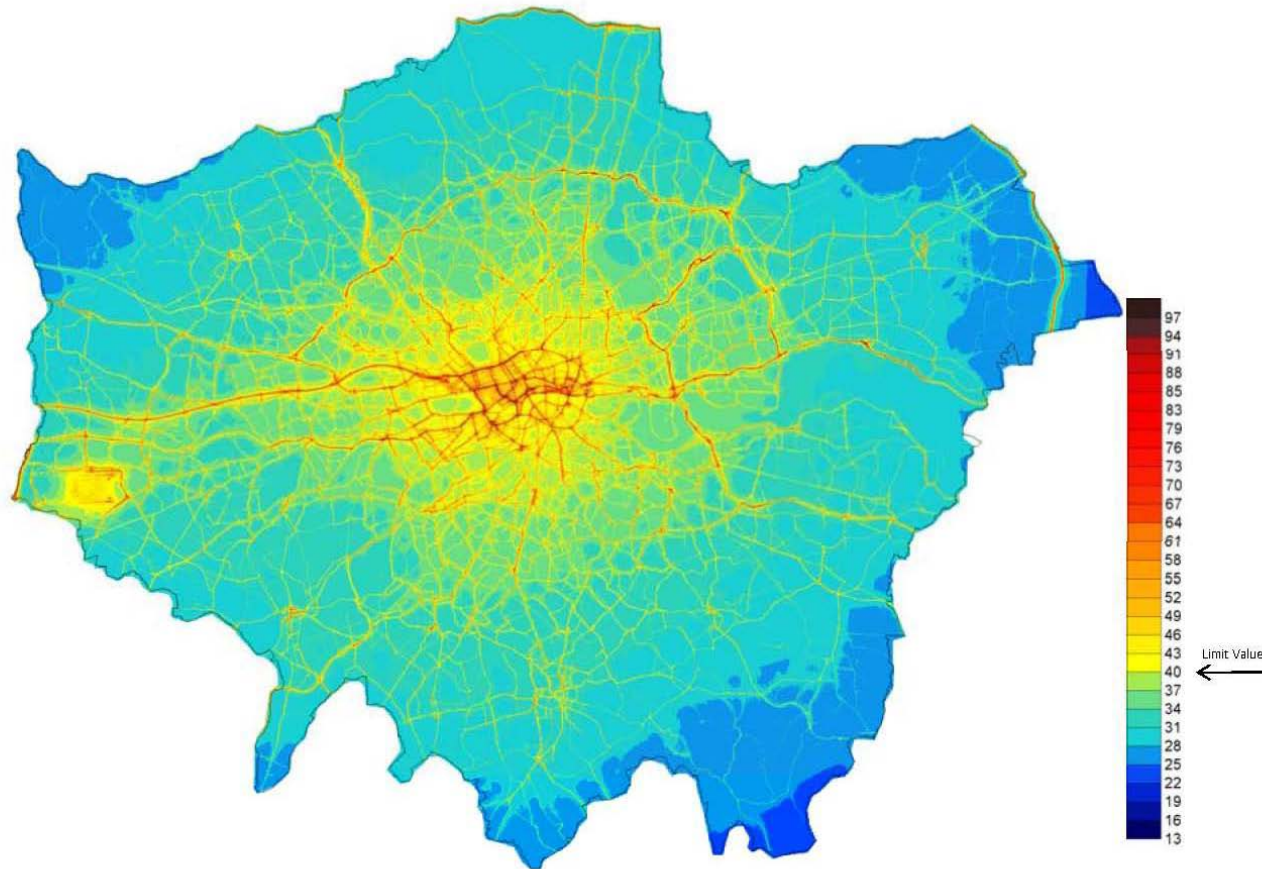
# Lessons and priorities for the 'Year of Air': Part II

- Deadlines since 1999: 2005 and 2010. Then 2015 and 2020
- Limit values, ECO, exposure reduction and target values
- PM<sub>2.5</sub> and PM<sub>10</sub>. The coarse fraction is important
- Particle size, numbers, surface area and toxicity
- Remember it took three years to set the PM<sub>2.5</sub> baseline!
- Remember benefits and co-benefits of complying with NO<sub>2</sub> limit values now
- Governance e.g. monitoring and 'dust suppressants'
- Halve PM<sub>2.5</sub> and PM<sub>10</sub> legal limits and maintain NO<sub>2</sub> limit values. In any event remember the 'Red lines'
- No changes any time soon. Soonest 2016? Likely 2018?



# Concentration and trends: Mayor's Air Quality Strategy

## NO<sub>2</sub> annual average concentrations for 2008



# NO<sub>2</sub> is not just a molecule

‘Update of WHO air quality guidelines’ published in 2008:

*“Nitrogen dioxide (NO<sub>2</sub>), for example, is a product of combustion processes and is generally found in the atmosphere in close association with other primary pollutants, including ultrafine particles. It is itself toxic and is also a precursor of ozone, with which it coexists along with a number of other photochemically generated oxidants. Concentrations of NO<sub>2</sub> are often strongly correlated with those of other toxic pollutants. Its concentration is readily measured but needs interpretation as a potential surrogate for a set of sources and the resulting mixture. Achieving guideline concentrations for individual pollutants, such as NO<sub>2</sub>, may therefore bring public health benefits that exceed those anticipated on the basis of estimates of a single pollutant’s toxicity.”*

# Measures

1. Leadership
2. Clean up London's transport
3. Build a low emission city
4. Protect the most vulnerable
5. Ensure a legacy from the Olympic Games

# What next?

- Particle counter: 'Pollution Check'
- Mayoral election: 3 May 2012
- Olympics Games: 27 July to 12 August
- Paralympic Games: 29 August to 9 September 2012
- World Health Organisation 'review' of evidence in 2012
- European Commission's 'Year of Air' stakeholder process
- 'Year of Air' proposals not expected until later in 2013
- Next European Parliament elections in 2014. Last in 2009

# The unknowns – please discuss

- How does the UK and European picture fit within the global picture e.g. climate change?
- What are the biggest policy gaps or opportunities e.g. diesel?
- What are the most misdirected policies e.g. myopically CO<sub>2</sub>?
- What new measures could make a big difference e.g. a campaign to build public understanding?
- What new laws could make a big difference e.g. accountability?
- What targeted scientific research is needed to inform key policy decisions e.g. NO<sub>2</sub> and other combustion gases?
- How do we get the balance right between timely research and policies which can take years to implement e.g. early and late input?
- Could the EU's systems be improved i.e. in the widest sense of EU?
- What have we missed? Big and small

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