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Failing health: why air quality  
legislation is not working

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# Failing health: why air quality legislation is not working



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A WHOLE BODY OF WELL-ESTABLISHED legislation controlling air pollution is failing to deliver results, in terms of preventing or reducing an estimated 29,000 premature deaths per year in the UK alone. The European Commission estimates that currently around 400,000 people die prematurely from outdoor air pollution across Europe. This article considers where and why the regulation of air quality is missing this health target. It attempts to give pointers to areas of future regulation.

Current failings in air quality regulation have a latent political energy, in this sense. The public has not reacted particularly strongly, yet, despite the striking loss of life. Figures such as these resulting from water pollution, industrial accidents or radioactive contamination would generate a furious response. Maybe because air pollution is less visible, and results from multiple sources including the diesel cars that many drive, the reaction has been more muted. However, this is beginning to change, with more coverage of regulatory failings, the position in London attracting particular attention, and cases against the government being brought by the environmental NGO ClientEarth and now the European Commission's infringement proceedings. These in particular, especially if they result in daily fines of the UK by the European Court of Justice, will raise the profile of the issue dramatically.

The results may be expected to include a tightening of controls on cars and vehicles in cities, with many investigating equivalents to London's Low Emission Zone; further controls on emissions from vehicle engines; close attention to emissions from Medium Combustion Plants (with a new directive on this proposed in the European Commission's Clean Air Package in December 2013); demands for much better co-ordination between central and local government; and much closer public interest in where and how the UK is complying with air quality legislation in general. In particular there is likely to be closer examination of the underlying reasons for the preferential tax treatment of diesel cars in the UK, which has resulted in their now making up over half the UK market. Measures which may originally have been introduced because of marginally better CO<sub>2</sub> emissions from

diesels probably do not fully reflect the fact that some produce 20 times the volume of particulates.

## HEALTH EFFECTS OF AIR POLLUTION

The World Health Organisation (WHO) estimates that 7 million people a year are dying prematurely as a result of air pollution. Of this number, it estimates that 3.7 million premature deaths in 2012 resulted from outdoor air pollution; and 4.3 million from household air pollution, particularly in countries where indoor smoke from combustion for heating and cooking is a major factor.

The main causes of acute air pollution vary greatly depending on factors particular to each region. In the Far East, forest fires, unregulated 'point source' pollution from factories and traffic all contribute to this huge premature mortality.

However, even in Europe, where mass forest burning is less of a factor and industrial point sources are far better regulated, air pollution is still a big killer.

The impact analysis for the European Commission's Clean Air Package from December 2013 estimated that premature mortality across Europe from air pollution (especially the combined effects of PM<sub>2.5</sub> particulates and ozone) was:

- 520,000 in 2005
- 406,000 in 2010
- 340,000 by 2020 (projected)
- 250,000 by 2030 (projected if the Commission Clean Air Package is applied).

On particulates, the WHO notes that PM (particulate matter) affects more people than any other pollutant. The major components of PM are sulphate, nitrates, ammonia, sodium chloride, black carbon, mineral dust and water. The WHO adds that small particulate pollution has health effects even at very low concentrations. No threshold had been identified below which no damage to health is observed. Therefore, WHO 2005 guidance limits aim to achieve the lowest possible concentrations of PM.

## 'If older diesels are a problem in London, it is hard to see why they would not be an issue for the other cities in the UK where air pollution emission limits are being breached.'

### HOW AIR POLLUTION IS REGULATED

#### EU legislation

EU legislation, on which most controls in the UK are based, addresses air pollution and air quality at several different levels. The following are some (not all) of the key controls.

For ambient air quality, EU legislation sets limits for the concentrations of specific pollutants in outdoor ambient air. Between them, the revised Air Quality Framework Directive 2008 and the remaining Fourth Daughter Directive introduce such controls for:

- sulphur dioxide;
- nitrogen dioxide and oxides of nitrogen;
- particulate matter;
- lead;
- benzene;
- carbon monoxide;
- ozone;
- arsenic;
- cadmium;
- mercury;
- nickel; and
- polycyclic aromatic hydrocarbons.

These levels are reflected in national implementing regulations. The 2008 Directive introduced new limit values for PM<sub>2.5</sub> particulates, and gave scope for member states to apply for time extensions to comply with limit values for PM<sub>10</sub> particulates, NO<sub>2</sub> and benzene.

For point source pollution, EU legislation now imposes emission limits on specific

pollutants from industrial installations. The Industrial Emissions Directive 2010 progressively repeals and replaces:

- the Integrated Pollution Prevention and Control (IPPC) Directive 2008;
- the Waste Incineration Directive (WID) 2000;
- the Solvent Emissions (VOCs) Directive 1999;
- three Titanium Dioxide (TiO<sub>2</sub>) Directives 1978, 1982, 1992;
- the Large Combustion Plants (LCP) Directive 2001.

International controls on air pollution are applied under the 1991 Geneva protocol on the control of emissions from volatile organic compounds, and the 1999 Gothenburg Protocol to the UNECE convention on long-range transboundary air pollution, which, as amended, sets national emission reduction targets for sulphur, nitrogen oxides, VOCs, ammonia and, now fine particulates (PM<sub>2.5</sub>).

High level controls on different aspects of air pollution are also applied by the EU Emissions Trading Scheme for greenhouse gases; the Montreal Protocol for ozone-depleting substances; and the Kyoto Protocol for fluorinated e-gases.

Technology-specific regulation includes the Petrol Vapour Recovery Directives, PVR 1 1994 and PVR II 2009, the Fuel Quality Directives of 1998 and 2009 and other EU controls on vehicle emissions.

#### UK legislation

Part IV of the Environment Act 1995 requires the government to publish its national air quality strategy. This sets standards for:

- butadiene;

- carbon monoxide;
- lead;
- fine particulates (PM<sub>10</sub>);
- sulphur dioxide;
- benzene;
- ozone;
- nitrogen dioxide;
- fine particulates (PM<sub>2.5</sub>) 'in the UK (except Scotland)' and by a date between 2010 and 2020 for UK urban areas.

The Environment Act 1995 required local authorities, wherever standards or objectives were not being delivered in their areas, to set up Air Quality Management Areas, make assessments, produce reports and prepare action plans. The problem has always been that not all aspects of air pollution are within a local authority's control, and for this set of legal duties to work to best effect, different levels of government would have to co-ordinate their actions, which is not yet happening.

Other controls include those in the Clean Air Act 1993, on sulphur dioxide and fine particles (where the government has been consulting on deregulation measures) and the statutory nuisance regime in Part III of the Environmental Protection Act 1990.

There are implementing regulations for all the main European air quality directives, and to a very large extent, the UK government's response to air quality issues has been to rely upon a lead being taken at the European level, rather than trying to impose national legislation as it would once have done, for example in response to the original London smogs.

#### London

London is a special case. The powers of the secretary of state under the Environment Act 1995 are devolved to the London mayor, who is required to produce his own air quality strategy, and can give directions to local authorities in Greater London about Air Quality Management Areas.

The London mayor introduced a London Low Emission Zone in 2008, whereby

higher charges are levied on larger vehicles with higher emissions entering the zone. The current Mayor Boris Johnson is now proposing (but not before 2020) an Ultra Low Emission Zone, with higher charges for diesel cars in London which do not have advanced particulate controls, and he plans to 'lobby' central government for further controls on diesel emissions.

**TIGHTER EU CONTROLS: EU CLEAN AIR POLICY PACKAGE, DECEMBER 2013**

In its Clean Air Policy Package published in December 2013, the European Commission prepared:

- A clean air programme for Europe.
- A draft Revised National Emissions Ceiling Directive to repeal and replace a 2001 Directive, tackling:
  - sulphur dioxide;
  - nitrogen oxides;
  - VOCs;
  - ammonia; but also
  - fine particulate matter (PM2.5) in particular black carbon; and
  - methane.
- A draft Medium Combustion Plants Directive, which will apply to combustion plants with a rated thermal input between 1 and 50 megawatts, and emission limit values for sulphur dioxide, nitrogen oxides and particulates.
- A draft decision to implement in EU law the May 2012 amendment to the Gothenburg Protocol on long-range transboundary pollution.

**WHERE THE EU LEGISLATION IS FAILING TO DELIVER: DISPARITY BETWEEN WHO AND EU LEVELS**

Despite the internationally authoritative WHO guidelines, it is clear that EU limits for the same pollutants have not caught up with WHO limits, as shown in table one.

Therefore, for some of the key pollutants, EU limits at present are set at levels which are well in excess of the WHO's guidelines.

In addition, they are expressed as target values or interim limit values, and subject to generous levels of exceptions in terms of numbers of days when it is not expected that they will be met.

**OTHER MAIN CAUSES OF THE PRESENT PROBLEMS**

The European Commission impact assessment for the December 2013 Clean Air Package cites three key issues as main drivers for the outstanding problems.

**Diesel emissions drive the NO2 and NOx compliance problems**

The assessment cites member states' continued promotion of the sale and use of diesel vehicles over gasoline and cleaner fuel vehicles, much higher than reported real emissions from normal driving conditions, and emissions from light-duty vehicles in particular.

Major changes to tax provisions on diesel cars and stricter controls on worse performing older engines are likely to be required to deliver improvements here. The London mayor's proposals on increased charges for older diesels in a future London Ultra Low Emission Zone may be a sign of things to come, but the proposals also underline the fragmented approach to air pollution controls in the UK. If older diesels are a problem in London, it is hard to see why they would not be an issue for the other cities in the UK where air pollution emission limits are being breached.

**Small-scale combustion and concentrated local pollution drive the worst PM compliance problems**

On an EU scale, the compound effect of older diesel engines, industrial sources, power production and background concentrations as well as secondary aerosols have a major effect. In a smaller number of zones domestic fuel consumption, concentrated local pollution sources and particular topography play a part.

This aspect of the problem is addressed by the Commission's proposed Medium Combustion Plants Directive.

**Poor co-ordination between national and local action, and lack of capacity at regional and local level**

This is certainly a feature of the UK's overall response to air pollution, as already noted. Responsibilities for air pollution in the UK are fragmented and inconsistently applied.

**WHOLESALE NON-COMPLIANCE**

Added to that, there are widespread issues of non-compliance across the EU with its much higher and looser limits for key pollutants. The EU reports that while broad compliance has been reached for a number of key pollutants, standards for PM10, NO2 and ozone are 'widely exceeded throughout Europe'. Hence, according to the impact assessment for the EU Clean Air Package 2013:

'17 member states are currently facing infringement proceedings for failing to

TABLE ONE: POLLUTANT GUIDELINES		
	WHO guidelines	Relevant EU guidelines
PM2.5	10 µg/m³ annual mean	Target value to 2015: 25 µg/m³
PM10	20 µg/m³ annual mean	40 µg/m³  Daily limit value 50µg/m³, not to be exceeded more than 35 times per year
Ozone O3	100 µg/m³ eight-hour mean	Target value: 120 µg/m³ – not to be exceeded on more than 25 days per year
Nitrogen dioxide (NO2)	40 µg/m³ annual mean	40 µg/m³

**‘For some of the key pollutants, EU limits at present are set at levels which are well in excess of the WHO’s guidelines. In addition, they are expressed as target values or interim limit values, and subject generous levels of exceptions.’**

meet PM limit values, and further action on NO<sub>2</sub> and NO<sub>x</sub> is likely to follow’.

In terms of the UK, for example, the WHO guidelines for PMs would be breached by Birmingham, Chesterfield, Leeds, London, Nottingham, Sheffield, Southampton, Stoke-on-Trent and Thurrock, while Manchester, Bournemouth and Northampton did not provide relevant PM<sub>10</sub> data.

The overall picture of non-compliance in key areas is certainly reflected in the UK, as can be seen from the following account of the legal challenges brought by the environmental NGO ClientEarth and then by the European Commission against the UK.

**R (ON THE APPLICATION OF CLIENTEARTH) v SECRETARY OF STATE FOR THE ENVIRONMENT, FOOD AND RURAL AFFAIRS [2013]**

In this case, the environmental charity ClientEarth sought a declaration that the UK government’s draft nitrogen dioxide air quality plans did not comply with the requirements of EU law.

ClientEarth also sought a mandatory order requiring the secretary of state to revise the plans to show how they would deliver compliance with nitrogen dioxide limit values by 2015 at the latest, publishing revised plans for public consultation.

In correspondence before action, the secretary of state had accepted that 40 out of 43 ‘zones and agglomerations’ within the UK were in breach of one or more limit values for nitrogen dioxide in 2010. The secretary of state had indicated that published plans would demonstrate a route to compliance by 2015: however, when published in 2011, the proposals

showed that compliance in 17 zones and agglomerations would be achieved after 2015, including for Greater London. Sixteen zones would deliver compliance between 2015 and 2020, and compliance in the London zone was ‘currently expected’ before 2025.

Much of the ClientEarth case was really about the precise interpretation of the various margins of discretion, and the articles of the revised Air Quality Framework Directive qualifying the absolute requirement to achieve certain levels of key pollutants by fixed dates. Some of these issues have been referred by the Supreme Court to the European Court of Justice for interpretation.

However, on one key issue, ClientEarth won its point. Mitting J, hearing the case at first instance, had originally dismissed its application for a mandatory order and for a declaration on grounds which reflect a limited view of the grounds on which a court should intervene:

‘[15]... such a mandatory order, like the imposition of an obligation on the government to submit a plan under Article 22 to bring the United Kingdom within limit values by 1 January 2015, would raise serious political and economic questions which are not for this court. It is clear from all I have seen that any practical requirement on the United Kingdom to achieve limit values in its major agglomerations, in particular in London would impose upon taxpayers and individuals a heavy burden of expenditure which would require difficult political choices to be made. It would be likely to have a significant economic impact. The courts have traditionally been wary of entering this area of political debate for good reason’.

He also declined to make a declaration:

‘[16]... A declaration will serve no purpose other than to make clear that which is already conceded. The means of enforcing Article 13 lie elsewhere in the hands of the Commission under Article 258 of the Treaty on the Functioning of the European Union, and if referred to it, the Court of Justice of the European Union under Article 260. Those remedies are sufficient to deal with the mischief at which the 2008 Directive is aimed’.

Carnwath LJ in the Supreme Court was more robust on these points:

‘The Court is satisfied that it should grant the declaration sought, the relevant breach of Article 13 having been already established. The fact that the breach has been conceded is not, in the Court’s view, a sufficient reason for declining to grant a declaration, when there are no other discretionary bars to the grant of relief. Such an order is appropriate both as a formal statement of the legal position, and also to make clear that, regardless of arguments about the effects of Articles 22 and 23, the way is open to immediate enforcement action at national or European level.’

**INFRINGEMENT PROCEEDINGS AGAINST THE UK**

With this challenge from the UK’s Supreme Court, the European Commission in February 2014 immediately issued infringement proceedings against the UK for breaches of nitrogen dioxide levels. Air pollution limits were regularly exceeded, declared the Commission, in 16 zones across the UK – Greater London, the West Midlands, Greater Manchester, West Yorkshire, Teesside, the Potteries, Hull, Southampton, Glasgow, the East, the South East, the East Midlands, Merseyside, Yorkshire and Humberside and the North East.

The UK, said the Commission, had not presented any ‘credible or workable plan’ for achieving compliance with air quality standards by 2015.

In presenting their case for the European Commission in July 2014, lawyers for

the Commission were reported (*The Guardian*, 10 July 2014) to have described the UK's continued failure to comply as 'perhaps the longest running infringement in EU history', which must make ominous reading given the ability of the European Court to levy national fines for infringements.

Meanwhile, and also in July, the UK government produced revised figures for nitrogen oxide and dioxide levels anticipating compliance with NO<sub>2</sub> levels 'after 2030' for Greater London, the West Midlands and West Yorkshire, 2025 for many other areas such as Greater Manchester, Tyneside, Liverpool, Sheffield, Nottingham, Bristol, Leicester, Teesside, the Potteries, Kingston Upon Hull, and 2030 for Southampton.

#### SUMMARY

It really seems as though successive governments took their eye off the problem of the acute health effects of air pollution, and gave up the initiative in tackling it robustly while trying to address other issues, including carbon emissions, through differential taxation favouring diesel engine

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vehicles. 'Climate or health' is a false choice, and both need to be addressed in policy making. In addition, at both the EU and UK national levels, legislation has been slow to catch up with and focus in on the key pollutants, the key components of particulate pollution, and above all the direct health effects or air pollution.

There has certainly been a division of responsibilities for tackling the issue effectively, with all sorts of political incentives to blame someone else. Central government in the UK has taken powers under the Localism Act to be able to pass on the costs of infringement proceedings to errant local authorities. Local authorities complain that they do not have all the powers they need to take drastic actions such as limiting traffic access or limiting developments on

air pollution grounds, and are not supported when they do take a stand.

There is new legislation in prospect from the EU under the Clean Air Package, but there are also landmark infringement proceedings under way against the UK which seem certain to bring this issue to the top of the environmental agenda, and to require that it be addressed as an immediate priority by the government taking power after the 2015 general election.

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Secretary of State for the Environment,  
Food and Rural Affairs  
[2013] UKSC 25*