



Environmental Audit Committee

Action on Air Pollution

May 2014

Background to CIWEM

1. The Chartered Institution of Water and Environmental Management (CIWEM) is the leading professional and qualifying body for those who are responsible for the management of environmental assets. The Institution provides independent comment on a wide range of issues related to water and environmental management, environmental resilience and sustainable development.
2. CIWEM welcomes the opportunity to submit this written evidence to the Environmental Audit Committee on action on air pollution. In formulating this response we have consulted with our members that work across the sector in air quality management, and drawn from evidence from our 2013 report *Clearing the Air – Priorities for reducing Air pollution in the UK*¹.

Summary of key points

A new air quality strategy is needed

3. During the 2013 European “year of air” a number of reports were published highlighting the impacts of air pollution on human health and also on the environment. Our knowledge of air pollution impacts and the wider social and environmental costs has never been better understood.
4. The last air quality strategy was published in 2007. Since then legally binding standards have been adopted at the European level for many air pollutants which need to be incorporated into a new national strategy.
5. A new strategy needs to take account of the recent scientific and medical evidence on PM_{2.5}, ultrafines and black carbon and the health effects of long term exposure to nitrogen dioxide (NO₂)ⁱ. Introducing effective policies to limit emissions and also public exposure to these pollutants must be a priority.
6. Some measures to tackle climate change have exacerbated air pollution, such as the use of biomass boilers in urban areas and the widespread switch to diesel fuel by the vehicle fleet. An integrated approach between government departments is necessary to develop effective policies and avoid unwanted consequences.
7. Air pollution must be tackled cross-departmentally. Defra, the Department of Transport, Department of Health, Department for Communities and Local Government and the Department for Energy and Climate Change all need to be involved in developing and delivering action on air pollution.
8. Some important sources of air pollution remain inadequately regulated, particularly small and medium combustion processes, and need to be urgently addressed. These sources should be included within the Environmental Permitting (England & Wales) Regulations as a matter of urgency.

¹ Available from <http://www.ciwem.org/clearingtheair>

9. As well as significant impacts on human health, air pollution also has a profound impact on the natural environment. An integrated approach to address air pollution will not only have profound benefits for human health but could also deliver considerable protection for vulnerable habitats.
10. CIWEM asserts that we need a policy framework for air quality management to be put in place for at least the next 15 years. There is no single solution to tackling air pollution and a suite of measures will be needed.

The main cause of poor air quality in the UK is road transport.

11. Road transport is the main source of pollution in 92% of Air Quality Management Areas. Very significant reductions in emissions, particularly from traffic, are required to meet existing air quality standards.
12. The Highways Agency should be given stronger direction and responsibility by the UK Government to ensure that air quality objectives are achieved.
13. EU emission standards have not delivered their anticipated benefits and more needs to be done to ensure that real world emissions are reduced in-line with the results of Type Approval tests. The Department for Transport has a key role in promoting better vehicle emission regulations in Europe.

The adverse effects of poor air quality need to have a much higher public profile

14. Public pressure is important to challenge the current inadequacies in solving air quality, but the public is generally unaware of the issue.
15. Where there is significant public exposure to poor air quality at the local level, measures to reduce air pollution might include low emission zones and a reduction in traffic. These measures may not be popular so a greater awareness of the health implications will improve acceptance by the public. This will require a concerted effort and funding by central government.

Secure, long-term dedicated capital funding streams are needed for active transport

16. Active transport is recognised as a means to deliver essential health, sustainable growth and environment objectives.
17. The Local Sustainable Transport Fund (LSTF) has been a great example and a successful approach to funding sustainable and active transport modes. It ends in 2016 and as yet a successor investment plan has not been identified.
18. CIWEM is currently working on an initiative *Active Transport for Healthy Living* with ten other professional bodies and organisations. The first material is due to be published in June and we would be pleased to share this with the Committee.

Evidence to the inquiry

The priority and targets on air quality in Defra's planning

19. Air pollution is Britain's forgotten public health crisis. Each year, around 29,000 deaths are attributable to anthropogenic particulate matter (PM) in the UK^{ii,iii}, at a cost to the economy of up to £16 billion a year^{iv}. PM and other air pollutants can affect both morbidity (illness) and mortality (deaths)^v.
20. The current National Air Quality Strategy is out of date. A new Strategy is required to take account of the recent scientific and medical evidence on the sources and effects of air pollution.

21. Given the evidence of the health impacts of PM, new policies are required to effectively reduce public exposure^{vi}. These may need to focus on the different components and sizes of PM such as black carbon and ultrafine particles (PM_{0.1}).
22. Evidence of background measurements indicate that regional (rural) background concentrations make a considerable contribution to the overall mass of PM_{2.5} in urban areas. These regional background concentrations are dominated by secondary PM_{2.5}, primarily as ammonium nitrate. Therefore measures to control rural emissions of ammonia will have a direct effect on reducing urban PM_{2.5} which will have a significant benefit to human health^{vii}.
23. New evidence is also emerging of the health effects of long term exposure to NO₂, and given the widespread non-compliance with the EU limit value, introducing effective policies to limit NO_x (oxides of nitrogen) emissions and public exposure to NO₂ must be a priority.

Strategy and inter-departmental co-ordination, including on transport and planning matters

24. The impacts of air pollution extend beyond that of public health demonstrating the need for a joined up approach. Air pollution must be tackled cross-departmentally; Defra cannot remain solely responsible for delivering action on air pollution. The Department of Transport, Department of Health, Department for Communities and Local Government and the Department for Energy and Climate Change all need to be involved in developing and delivering action.
25. Emissions of the main greenhouse gas, CO₂, and NO_x and PM are linked, as they are all emitted from the same source, during combustion of fuels. Therefore many measures to reduce CO₂ emissions will also reduce urban air pollutants. For example in central London the heating of commercial buildings is an important source of NO_x; reducing energy demand will also reduce air pollution emissions. This applies to transport as well as stationary sources.
26. The impact of air pollution on the natural environment is also important and the national air quality strategy should include critical levels and critical loads to be used in decision making such as in planning applications. Currently 68% of sensitive UK habitats exceed their capacity (critical load) for eutrophication from atmospheric nitrogen compounds. With existing emission cuts that figure only falls to around 50% by 2020^{viii}.
27. Some policy measures exacerbate air pollution such as the use of biomass boilers in urban areas and the widespread switch to diesel fuel by the vehicle fleet. This underlines the need for an integrated approach between the Government departments to develop effective policies and avoid unwanted consequences.
28. There is recent evidence to suggest that improvements in air quality in London from the low emission zone have been countered by emissions of PM₁₀ from burning wood as a secondary heating source^{ix}. Wood burning, unless in a specifically designed and authorised boiler or stove, was prohibited in much of Greater London by the 1956 Clean Air Act. This study suggests this legislation is not effective as public awareness is possibly low.
29. The planning system can play a role in determining where polluting development can be located and protecting sensitive development, such as housing, from poor air quality. It can also be used to promote and fund low emission strategies such as the installation of electric charging points. In particular, the planning system can be used to stop the development of significant combustion sources of NO_x and PM in urban areas.
30. The Mayor of London requires all new development to be 'air quality neutral', which will require the calculation of the NO_x and PM emissions of new developments, and actions to offset them where they are above defined benchmarks.

31. Local authorities outside London need to ensure that their Local Plans include robust air quality policies that enable them to legitimately reject applications on air quality grounds, or to reduce the negative impact of a proposed development, by requiring better design, best practice measures and techniques, and, if necessary, appropriate mitigation.
32. CIWEM believes the Highways Agency should be given stronger direction and responsibility by the UK Government to ensure that air quality objectives are achieved alongside all roads where there is relevant public exposure, and that new infrastructure does not cause a large deterioration in air quality where it is currently good.

Support for local authorities in tackling air pollution, and how any European Commission fines might fall on them

33. The Air Quality Action Plans have largely been ineffective at reducing emissions because many local authorities do not have any powers to control traffic. Unitary authorities (as the highways authority), do have control over most roads within their boundaries, but the busiest roads tend to be those controlled by the Highways Agency.
34. The highways authorities tend not to give high priority to controlling emissions as often large reductions are required to meet the objectives, which would require significant changes to the local road network.
35. Currently local authorities have to work in partnership with the Highways Agency, but CIWEM believes if the Highways Agency was made responsible for local air quality from traffic emissions more progress is likely to be achieved. The Highways Agency, as a larger organisation, can afford greater in-house expertise and is also likely to have the ability to exercise more influence.
36. At the local level, measures to reduce air pollution might include low emission zones and reduction in traffic where there is significant public exposure to poor air quality. There is a need for a much greater commitment to raise awareness of the health implications of NO₂ and PM exposure, to achieve greater acceptance of the measures needed to control them. Public pressure is important to challenge the current inadequacies of local authorities in solving air quality, but the public is generally unaware of the issue.
37. Some important sources of pollution remain inadequately regulated, particularly small and medium combustion processes, and these need to be urgently addressed. The explicit control of PM (and NO_x) emissions from small and medium sized combustion sources should be included within the Environmental Permitting (England & Wales) Regulations as a matter of urgency, to provide local authorities with the ability to control black smoke emissions within their boundary, and hence have powers to control PM_{2.5} emissions for this source.
38. The proposals for new 2030 national emission limits in the revised National Emissions Ceiling Directive (NECD), as well as the provisions for the Directive on medium sized combustion plant provide further impetus to revise and update the UK's air quality strategy to address their impacts.
39. CIWEM believes that Local Air Quality Management should be reviewed when a new air quality strategy is put in place. It has been operating for more than 15 years and should be reviewed to determine whether it remains fit for purpose.
40. Under the Localism Act, infraction fines may be passed on to Local Authorities. This may not be entirely fair when they do not have the powers required to control all sources of air pollution.

The implications of local authorities' enhanced responsibilities for public health

41. Recent reform of planning and health and social care frameworks include the introduction of the National Planning Policy Framework (NPPF) and associated guidance, the Localism Act 2011 and the Health and Social Care Act 2012. Local authorities are also measured against 68 Public Health Outcome Measures to assess how they are improving the health of their population^x. These closer linkages are necessary and welcome. They will allow professionals in health, environment and planning to work collaboratively, but it will take time before any outcomes can be measured.

Low Emissions Zones, vehicle emissions limits and public awareness campaigns

42. The main cause of poor air quality in the UK is road transport; it is the main source of pollution in 92% of Air Quality Management Areas^{xi}. Emissions can be reduced in a number of ways including using cleaner vehicles, controlling in-service emissions (e.g. by MOT and on-road tests), reducing congestion (emissions are greatest during stop-start driving), reducing the number and length of journeys by private car and the movement of freight by road.
43. Emissions can be controlled by restricting the type of vehicles within a defined area, i.e. a low emission zone (LEZ). London has the world's largest LEZ, which along with the normal fleet turnover, is expected to reduce PM₁₀ and NO_x emissions by a third by 2015. However these projections may be optimistic in light of the recent evidence on the real world emissions performance of vehicles (see also paragraph 46 and 47).
44. LEZs may be an important policy option for complying with the EU limit values; they have been found to be the most cost effective of the measures evaluated for delivering improvements to NO₂^{xii}. However a single set of criteria needs to be established to ensure a degree of consistency between LEZs in different towns, to make it easier for drivers to comply. It is also important that the criteria for LEZs are regularly updated to reflect the changing vehicle fleet.
45. Defra's annual air quality grants have focused on measures to reduce emissions, including voluntary means of working in partnership with local employers, freight and logistics firms, bus operators and others to reduce emissions. For voluntary measures to be effective the adverse effects of poor air quality need to have a much higher public profile than they currently have, which will require investment by central government.

The role that might be played by new environmental technologies, and the scope for wider transport policies - for example on public transport and cycling and walking - to cut air pollution

46. NO_x emissions from road traffic have not reduced in line with the EU emission limits as anticipated. In-service tests have shown no change in NO_x emission from diesel cars over the last two decades even under Euro VI standards, and bus emissions may have increased over a similar period. It is vital that future EU emission regulations result in real world improvements to vehicle emissions in line with the results in Type Approval tests. The Department for Transport has a key role in promoting better vehicle emission regulations in the EU.
47. Further steps are needed to ensure that future legislation effectively controls emissions. A range of approaches is needed including remote sensing and on-board portable emission monitoring. For vehicles meeting the Euro VI standard the UK Government should test a range of vehicles as they become available on the market to ensure that they meet the legislated in-service requirements, and to act quickly if they do not.

48. Consideration should be given to the use of transient testing with appropriately stringent limits at the annual MOT Test. This would identify more gross emitters, particularly diesel vehicles.
49. Some motorists use electronic 'chips' to override the electronic management system of their vehicle; an essential part of the emission control. More should be done to clamp down on the selling, fitting and use of these devices.
50. Due to the pollution emitted from tyres and break wear (around 80% of PM^{xiii}), electric and hybrid vehicles cannot provide the ultimate solution. Encouraging active transport is one way to significantly reduce traffic and air pollution.
51. The evidence base and policy case for active transport already exist. It is recognised as a means to deliver essential health, sustainable growth and environment objectives.
52. Measures to enable more walking and cycling deliver very high benefit to cost ratios. As they are individually small, they may be less attractive politically. Yet in combination with a package of measures on a regional scale they can be politically significant, popular with the electorate and better value for money than single large infrastructure schemes.
53. The Local Sustainable Transport Fund (LSTF) has been a great example and a successful approach to funding sustainable and active transport modes. It ends in 2016 and as yet a successor investment plan has not been identified. CIWEM considers three things are required to build on the current strong evidence and policy for active transport and translate it into reality:
 - a. Top level political leadership, with a cross-governmental Action Plan for the expansion of active transport, growth targets and objectives in all the relevant departments, and investment programmes;
 - b. Secure, long-term dedicated capital funding streams, top-sliced from allocations to local areas such as the Local Growth Fund, to re-shape our urban realm and allow active transport to become the default choice for shorter journeys; and
 - c. A secure, long-term revenue funding programme, similar to the successful LSTF, enabling major travel behaviour programmes, widespread training and professional development across all the relevant disciplines. This, together with the capital programme, allows for a comprehensive, integrated multi-year work programme to change social norms and individual behaviour.

References

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 - ii Committee on the Medical Effects of Air Pollution (COMEAP). 2010. The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom.
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