



## **Environmental Protection UK submission to joint Select Committee inquiry on air quality, November 2017.**

### **Introduction**

We are writing in response to the request for submissions to the joint inquiry into air quality by the Environmental Audit Committee, the Environment, Food and Rural Affairs Committee, the Health Committee and the Transport Committee. The Air Quality Committee of Environmental Protection UK has considered the terms of reference for the inquiry and welcomes the opportunity to make a submission. These comments represent an overview of the Committee's opinions, but do not necessarily reflect the views and opinions of individual Environmental Protection UK members.

### **About Environmental Protection UK**

Environmental Protection UK is a national charity that provides expert policy analysis and advice on air quality, land quality, waste and noise and their effects on people and communities in terms of a wide range of issues including public health, planning, transport, energy and climate.

We offer clear and critical analysis of UK government and European Union policy proposals through a range of high-quality publications and expert-led events, as well as up-to-date regulatory information through our comprehensive guide to UK and EU environment legislation.

Environmental Protection UK works with UK national and devolved governments, local authorities, business, academics and the general public, and with relevant EU institutions and NGOs.

### **Submission.**

#### **Background.**

Although the Committees have posed five specific questions for submissions which are addressed below EPUK believes that these answers require some additional context, especially for new members of the Committees.

The Environmental Audit Committee and the Environment, Food and Rural Affairs Committee have previously carried out inquiries into air pollution

and EPUK has made submissions to these. Amongst the key points of these submissions were:

- National level monitoring and modelling, whilst of high quality, fail to identify many local problems;
- The scale of the health impacts of air pollution are not fully appreciated or reflected in policy making;
- The delivery chain for air quality is fragmented with poor alignment between air quality and climate change targets;
- Insufficient attention seems to be given to PM<sub>2.5</sub> despite the fact that PM<sub>2.5</sub> (and even smaller particles) are arguably the main health risk from air pollution. In spite of this it seems likely that the PM<sub>2.5</sub> reduction target, due to be achieved by 2020, will be met, mainly because it was singularly unambitious and was likely to be met with little action in any case;

and we feel that, to a large extent, these points are still relevant.

This is all against a background where the number of deaths per annum in the UK in which air pollution is believed to be an important factor is steadily increasing from the Committee on the Medical Effects of Air Pollution's (COMEAP) 2010 estimate of 29,000<sup>1</sup> (specifically referring to particles), through the Royal College of Physicians' figure of 40,000<sup>2</sup> to the most recent estimate for 2015 in the Lancet<sup>3</sup> of ~50,000 deaths from various causes related to air pollution. The Lancet paper also identifies the UK as being amongst the worst of the so-called developed nations for air pollution and the related health effects, largely due to the high percentage of diesel engined vehicles on the roads.

Research has moved on from associating increased mortality with higher levels of air pollution as in the Six Cities Study<sup>4</sup> from the 1990s to very recent work demonstrating that ultrafine particles can enter the bloodstream shortly after being inhaled<sup>5</sup>. Taken as a whole this work provides real evidence for not only apparent associations between air pollution and ill health and mortality but demonstrates, at least with some of the pollutants studied, how they can enter the human body and cause damage.

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<sup>1</sup> The Mortality Effects of Long Term Exposure to Particulate Air Pollution in the United Kingdom, COMEAP, December 2010.

<sup>2</sup> Every breath we take: the lifelong impact of air pollution, Royal College of Physicians, February 2016.

<sup>3</sup> The Lancet Commission on Pollution and Health, 19 October 2017 (<http://www.thelancet.com/commissions/pollution-and-health>).

<sup>4</sup> Dockery DW., Pope CA., Xu X., Spengler JD., Ware JH., Fay ME., Ferris BG., Speizer FE., 1993. An association between air pollution and mortality in six US cities. *New England Journal of Medicine*, 329 (24), pp 1753-1759.

<sup>5</sup> Mark R. Miller *et al*, (2017). Inhaled Nanoparticles Accumulate at Sites of Vascular Disease. *ACS Nano*. 11. . 10.1021/acs.nano.6b08551.

In addition to this work in the USA<sup>6</sup> looking at reductions in the concentrations of PM<sub>2.5</sub> in a large number of locations (211 county locations) across the USA led to the conclusion that: "A reduction in exposure to ambient fine-particulate air pollution contributed to significant and measurable improvements in life expectancy in the United States."

### **1. How effectively do Government policies take into account the health and environmental impacts of poor air quality?**

There appears to be a wide gap between on one hand Government pronouncements, which usually acknowledge that air pollution has impacts upon health, on another hand policies which, superficially, hint at improvements and, finally, actions which tend to be almost non-existent or ineffective.

One big weakness in the Government's approach to air pollution, in our view, is that there is an almost total emphasis on simply achieving the limit values for the various pollutants and being satisfied with mere compliance with them. Although, of itself, this is not wholly undesirable we feel that there is scope for far greater ambition here. We also feel that this approach does not necessarily reduce public exposure to air pollution. The main limitation with this approach is that there are pollutants, most notably particles, for which there are no known safe concentrations and for which standards have been set on the basis of minimising harm. In these cases the standard is usually qualified with a statement that efforts should be made to reduce concentrations as far as is possible. However some policies have been set that do not require total compliance because that would entail excessive costs

In addition there are indications in the Government's plans for dealing with nitrogen dioxide (NO<sub>2</sub>) that when a Clean Air Zone (CAZ) has resulted in the relevant limit value(s) being met the CAZ will then be rescinded which runs the risk of pollution levels increasing again and returning to non-compliance.

There is also a question as to whether the pollutants for which there are standards and, supposedly, control measures are in place are necessarily all the key ones. EPUK believes that there is certainly one metric which is key in the health debate which receives very little attention in the Government's thinking; namely ultra-fine or nano particles. The paper by Miller (cited above) and other work<sup>7</sup> demonstrate how these particles can enter the human body and

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<sup>6</sup> Fine-Particulate Air Pollution and Life Expectancy in the United States. C. Arden Pope III, Majid Ezzati, and Douglas W. Dockery, *N Engl J Med* 2009;360:376-86.

<sup>7</sup> Magnetite pollution nanoparticles in the human brain, Barbara A. Maher, *Proceedings of the National Academy of Sciences*. 113, 39, p. 10797-10801.

lead in one case to cardio-vascular conditions and in the other to dementia.

There is, also, at least one pollutant that does not as yet appear to figure in Government's thinking; ammonia. This arises almost exclusively from agricultural sources and, although not identified as having any direct health impacts, is an important element in the formation of secondary PM<sub>2.5</sub> on the atmosphere. In addition to this ammonia is also important on a wider scale as it contributes significantly to nitrogen deposition on sensitive natural habitats.

It is also important to remember that a range of Government policies can impact on air pollution. Two obvious examples are VED and planning policies.

## **2. Do these plans set out effective and proportionate measures to achieve necessary emissions reductions as quickly as possible?**

No. In a number of ways the plans appear to do little more than rely on a "business as normal" scenario which will achieve some improvements but improvements that could be achieved more rapidly with additional efforts.

The plans also appear to place all, or nearly all, the burden of achieving improvements in air quality on local authorities. It is obvious that local authorities have an important part to play in this process but they need a clear lead and narrative from central government and to be properly resourced. In this context resources are not restricted to purely financial provision, important though this is, but includes having experienced professional personnel and having effective powers to take the necessary actions.

Further, the plans take little account of the fact that the problems in one unitary area might, at least in part, be a consequence of the actions, or inactions, of a neighbouring unitary local authority. In an ideal world such problems should not arise but EPUK is aware of some (albeit few) regions of England in which they do make for difficulties. Similarly, tensions can exist in areas where there are still two tiers of local authority with the District Council having responsibility for air quality and the County Council being responsible for transport.

EPUK has also been made aware that there are some local authority areas where there is reluctance to introduce measures such as a CAZ, or at least to be one of the first to do so, because of possible public animosity with the measures being perceived as "motorist

bashing” in spite of the recent increase in publicity about the health effects of air pollution.

A large problem is that there is little relationship between the Government’s identification of 27 areas of concern by modelling and the 300+ Air Quality Management Areas (AQMA) identified in the Local Air Quality Management (LAQM) process by 278 (out of a total of 391) local authorities (several authorities have declared multiple AQMAs) by a combination of modelling **and** measurement. Part of this problem is due to the fact that the model employed by the Government, although excellent in its own way, does not have the resolution to identify all the, often quite small, areas where the limit values are exceeded.

The question as posed is also, in some ways, incomplete in that it refers simply to reductions in emissions. Although this is an important element in reducing concentrations of air pollution it is only one part of the solution. The relationship between emissions and concentrations is not as simple as it might seem, in part because emissions are frequently calculated on a national scale whereas the air quality problems that are being addressed here are often determined by local factors including meteorology and topography in addition to emissions.

There is also little evidence that emissions reductions, and hence improvements in air quality, are being pursued “as quickly as possible”. This implies taking action, and encouraging actions, over and above what is already in the pipeline.

There are, however, many cost effective opportunities for air quality improvements from existing and planned Government initiatives, as there are a large number of these which affect air quality. The new Air Quality Strategy, proposed for 2018 which will presumably incorporate the NO<sub>2</sub> Plan, must embed the need to optimise government action to improve air quality.

For example, many of the OLEV programmes have a significant impact on air pollution, but are driven entirely by climate change. The location of climate change located emissions is of no particular concern as they relate to a global issue but the location of toxic air pollution emissions is a highly localised issue and these initiatives should, wherever possible, be focused in areas of high pollution.

All government programmes with air pollution impacts should be optimised to harness the potential for air quality benefits, and focus these where most needed. This includes programmes such as BEIS’s National Productivity Investment Fund and energy efficiency programme, DfT’s low emission vehicle programmes, DCLG’s

planning policies, including 'permitted development' rights, and HMT's vehicle taxes, as well as the normal mechanisms that are available such as building regulations, development control and local transport plans.

Although it is maybe not directly relevant to this question EPUK believes that there are two issues related to Brexit that can best be raised here. The first of these is that we strongly believe that both the "Polluter Pays Principle" and the "Precautionary Principle" should be enshrined in UK law regardless of the outcome of Brexit.

The second point is that Brexit provides a golden opportunity to ensure that the UK's Air Quality Standards improve on the European ones. Although the EU Directive standards are supposedly based on the WHO Guidelines they actually fall short of these on occasion, most notably with respect to particles.

### **3. Are other nations or cities taking more effective action that the UK can learn from?**

In many ways, yes. Although far from perfect the London Plan in many ways illustrates some potential ways forward. There are, however, some questions which need to be addressed. One instance relates to the T-charge whereby motorists can accept paying the charge and continue to pollute London's air whereas the real purpose of such a charge should be to discourage all bar a very few motorists from entering the charging zone in a vehicle that will incur the charge. Such behaviour can also lead to adverse publicity in that it could be cited as another example of "motorist bashing".

Equally there are potentially lessons to be learned from cities such as Paris and from Germany. Paris is reported to be planning a ban on diesel vehicles by 2025 in contrast to the UK plan for a ban on diesel and petrol engined vehicles by 2040 at the earliest. Berlin, and other German cities, have been operating the LEZ/CAZ concept for several years (as has London with its LEZ).

There have also been reports that other countries such as Denmark have set far more ambitious targets for the replacement of petrol/diesel engined vehicles than the UK. Although it is arguable that such move might be more easily achieved in a small country such as Denmark and there are questions, at least so far as current technology is concerned, as to whether electric vehicles (which are most widely considered to be the main replacement for petrol and diesel) do actually deliver all the benefits claimed for them It should be noted that although some technologies have no or lower tailpipe emissions, other pollution from these vehicles, such as tyre and

brake wear, continues. Such moves raise questions as to whether the UK Government is really being as bold as it claims to be.

There are also many examples already in development and discussion here, around integrated transport and building models, which could be of interest.

#### **4. Is there enough cross-government collaboration to set in place the right fiscal and policy incentives?**

No. A number of organisations, including EPUK, have consistently made the point that dealing with the problems caused by air pollution is not a matter for any one department of Government. It is sensible that one Department, in this case Defra (with some input from DfT), is tasked with identifying and quantifying the problem but addressing that problem needs a multi-disciplinary approach.

It is clear that there are some Departments that must have a bigger part to play in improving air quality but, in some way or other, each and every Department can contribute. There are, however, obviously some Departments, apart from Defra, whose commitment is essential to improving air quality. Treasury is obviously one for financial reasons, Transport because of the contribution of road traffic to air pollution, Health because of the burden air pollution imposes on the NHS, Business, Energy and Industrial Strategy for industrial and commercial aspects and energy generation and Communities and Local Government because of the important part planning policy can play in improving air quality. The Department of Health and Public Health England also have an important role in ensuring that the medical profession as a whole, most notably at GP level, are aware of the extent of the health problems caused by air pollution.

#### **5. How can those charged with delivering national plans at local level be best supported and challenged?**

Many of the apparent short-fallings of the Government's proposals have already been mentioned above. It seems very clear to EPUK that there is a need for action by Government to address the problems caused by air pollution. It is also clear that speedy action is necessary to address the current problems but that this needs to be complemented by longer term actions.

EPUK believes the following measures (listed in no particular order of priority) are needed by local authorities for them to have any possibility of delivering the national plans. The list is in two parts, firstly those measures directly relating to local authority actions and

the second to actions that Government could take in more general support of local actions.

**Direct measures.**

- Adequate financial provision.
- Proper powers to introduce necessary traffic management measures.
- Requirements for LA planning and transport departments to include air quality in their decision making processes.

**General actions.**

- Publicity campaigns to drive home the message that restrictions on vehicles are being totally driven by the need to protect public health.
- An effective scheme of in-service emissions testing and enforcement, possibly including road-side/on road emissions testing.
- Effective planning controls consistent with the need for housing provision.
- Recognition of appropriate professional qualifications in Air Quality Management.
- Recognition of non-Governmental guidance on air quality.
- The introduction of a new Clean Air Act to consolidate current air quality legislation and provide the necessary powers to local authorities.
- The establishment of a Clean Air Commission to provide an oversight of air quality, and identify barriers and opportunities for air quality action, including engaging at a high level to ensure clean air is a political priority.

In this submission we have largely concentrated on the questions posed by the four Committees. Inevitably there are many issues we have been unable to address here but some of these are covered in EPUK's responses to Defra consultations and a copy of the most recent of these, to the latest NO<sub>2</sub> Plan, can be found at [http://www.environmental-protection.org.uk/wp-content/uploads/2017/06/EPUK-response-to-National-Plan-consultation\\_15Jun17.pdf](http://www.environmental-protection.org.uk/wp-content/uploads/2017/06/EPUK-response-to-National-Plan-consultation_15Jun17.pdf).