

Clean Air and the Environment Bill

Clause 2 - environmental targets: particulate matter | 20 October 2021

Committing to meet the 2005 World Health Organization guidelines for fine particulate matter air pollution by 2030 at the latest

The Environment Bill is a vital opportunity to ensure that the UK remains a world leader in the fight against air pollution, improve the lives of people across the country and promote clean growth.

Throughout the passage of the Bill, the Healthy Air Campaign (HAC), a national coalition of health, transport and environmental NGOs, has strongly supported the inclusion of ambitious targets to reduce fine particulate matter (PM_{2.5}).

The HAC is calling on MPs to support Lords amendment 3 that would ensure a basic level of protection for people across the country by setting the parameters for a legal target to reduce PM_{2.5} to 10 µg/m³ by 2030 at the latest.

This amendment agreed to by Peers provides robust protections against one of the most harmful pollutants in our air – and supports the recommendation made by the Coroner in his Prevention of Future Deaths report following the death of 9-year-old Ella Adoo-Kissi-Debrah, who last year became the first person to have air pollution on her death certificate.

The Royal College of Physicians estimates that **around 40,000 premature deaths every year in the UK are attributable to exposure to outdoor air pollution**. Ahead of COP26, retaining Lords amendment 3 (under ‘Environmental targets: particulate matter’) would be a strong signal to the British public and the world that the government is ambitious in improving air quality and taking action on one of the biggest threats to public health.

Why we need to keep this amendment

Lords amendment 3 - Environmental targets: particulate matter

- (1) The Secretary of State must by regulations set a target (“the PM_{2.5} air quality target”) in respect of the annual mean level of PM_{2.5} in ambient air.*
- (2) The PM_{2.5} air quality target must –*
 - a. be less than or equal to 10µg/m³,*
 - b. so far as practicable, follow World Health Organization guidelines, and*
 - c. have an attainment deadline on or before 1 January 2030.*
- (3) In this section PM_{2.5} means particular matter with an aerodynamic diameter not exceeding 2.5 micrometres.*
- (4) Regulations setting the air quality target may make provision defining “ambient air”.*

PM_{2.5} is one of the most harmful pollutants in our air and is recognised by the UK Government as the single largest environmental risk to public health in the UK. There is no safe limit for air pollution, but in 2005 the World Health Organization (WHO) recommend that the annual mean level for PM_{2.5} should be limited to 10 micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

The UK currently complies with the existing legal limit for PM_{2.5}, **but this is double the 2005 WHO guideline**. Reductions in this pollutant have stagnated over recent years. Lords amendment 3 will revitalise action to reduce levels of PM_{2.5} to safer levels recommended by the WHO.

An attainment date of 2030 will drive the ambitious action we need to urgently reduce this pollutant. Significant policies and measures will be needed to meet it, but this is achievable and will improve people's lives, reduce the burden on the NHS and create economic opportunities.

- [Technical analysis commissioned by DEFRA](#) in 2019 concluded that the measures already committed to in the government's Clean Air Strategy could take us 95% of the way to the WHO 2005 guidelines, with only a small number of hotspots in London likely to remain.
- [Further independent analysis by King's College London](#) commissioned by the Greater London Authority subsequently showed that, with additional action, achieving the WHO guideline for PM_{2.5} by 2030 is feasible in what is the most polluted city in the country.

For the Bill to meet the vision, set out in the Conservative manifesto to be the "lodestar" that the Prime Minister has said "will guide our country to a cleaner and greener future", it needs to deliver ambitious targets. With COP26 on the near horizon, the Environment Bill is an opportunity to demonstrate the UK as a globe leader in tackling one of the biggest environmental health risks across the world.

The UK Government has put forward an ambitious amendment to enshrine a commitment to halt the decline of biodiversity by 2030 at the latest, which has been welcomed by nature groups. **We would urge MPs to similarly support a bold target to protect people's health as it has done to protecting nature.**

The health benefit

Air pollution affects us all, from the time we're in the womb and through to old age. The biggest impact is cardiovascular disease. Air pollution can promote blood clotting and put the heart under additional stress, both of which could trigger heart attacks and strokes. Toxic air also exacerbates respiratory illnesses like asthma, increasing the risk of asthma attacks ending in hospitalisation or worse. The Royal College of Physicians estimates that **around 40,000 premature deaths every year in the UK are attributable to exposure to outdoor air pollution.**

Air pollution is harmful to everyone, **but some people suffer more than others**. The poorest communities are often exposed to the highest levels of toxic air, either through living or working in areas which have higher levels of air pollution – for example from busy roads or in unhealthy housing. These communities are also more likely to have a health condition that makes them highly susceptible to harm. According to the British Heart Foundation, approximately 14 million people in the UK are living with heart and circulatory diseases and/or a lung condition. For these individuals, a spike in air pollution poses an immediate health threat, worsening their symptoms and increasing the risk of hospitalisation and death. Furthermore, particulate matter pollution, like PM_{2.5}, can enter the bloodstream from the lungs and remain there for several months, showing that the health risk continues long after the initial exposure.

The role that air pollution played in the death of nine-year-old Ella Adoo-Kissi-Debrah underlines how severe the consequences of damaging toxic air can be. Around a third of children in the UK are growing up in areas with unsafe levels of air pollution and children living in highly polluted areas are four times more likely to have reduced lung function in adulthood. Over 1 million children already have asthma in the UK, and one in five of us will be diagnosed with a respiratory condition at some point in our lives.

In April 2021, the Coroner's [Prevention of Future Deaths Report](#) said that to save lives, legal limits for particulate matter pollution should be in line with the WHO guidelines. Lords amendment 3 provides an opportunity to implement the Coroner's recommendations and prevent more deaths.

The economic benefit

Cleaning up our toxic air will not only protect the health of UK citizens but also makes sense for the financial health of the country too. The [Royal College of Physicians](#) has estimated that the social cost of air pollution to individuals and the health service is over £20bn annually in the UK. The [Confederation of British Industry](#) has further calculated that a £1.6bn annual economic benefit to the UK could be realised by meeting WHO guidelines, as 3 million working days are lost every year to air pollution through ill health.

Achievability of the 2005 WHO guideline for PM_{2.5}

In March 2021, the Defra-commissioned [report](#) from the Government's Air Quality Expert Group (AQEG) set out scientific advice on the modelling of future PM_{2.5} concentrations, to support Defra's target development under the Bill. When looking at the modelling of future PM_{2.5} concentrations over a diverse range of model types, the report found there was broad agreement that:

- “irrespective of model [...] the **large majority of the UK land area [is] likely to be below 10 µg m⁻³ by 2030**”, which suggests *the WHO guideline for PM_{2.5} is attainable almost everywhere across the UK and in some cases before 2030.*
- “large areas of central and south eastern England would experience annual average concentrations in the range 6- 8 µg m⁻³ by 2030. The remainder of the UK showed concentrations typically below 6 µg m⁻³”
- “**locations in central London were those most at risk of concentrations exceeding an annual average concentration of 10 µg m⁻³ in 2030**”, which suggests that problem areas will be *localised to an extent and therefore potentially easier to tackle, which analysis from King's College London has already shown to be possible in London.*
- Secondary pollution “would comprise the largest sub-component of PM_{2.5} looking across the UK as whole”. But “primary emissions of PM in urban areas remain an important factor” and “would have significant impacts on the attainment of 10 µg m⁻³ limit value in cities”, with “non-exhaust particulates from vehicles, wood-burning and other domestic emissions are likely to remain a critical source of primary emissions for 2030 that play an influential role in determining urban exposure and attainment of limit values”. This highlights that primary emissions of PM_{2.5} will be the key sources in the residual problem areas and these are arguably the ones within the government's power to address, for example, by better regulating domestic heating and taking more ambitious action to ensure there are fewer and cleaner vehicles on the road.

The UK's chance to remain a global leader

The UK is in the global spotlight this year and has an opportunity to be a world leader in protecting people's health. However, without urgent action taken to address this issue, we are increasingly running the risk of being left behind. Since 2012, the USA has already had a stronger legal target for PM_{2.5} set at 12 µg/m³ and the US EPA is currently considering recommendations from its Independent Particulate Matter Review Panel to lower this further to between 8 and 10 µg/m³. The European Union will also be reviewing over the next few years its Ambient Air Quality Directive, from which our existing legal target for PM_{2.5} originally stems, and the European Parliament has already signalled to the Commission that it wants to see targets fully aligned with the WHO guidelines.

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