

Clean Air and the Environment Bill

Lords Report Stage Briefing

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

The Environment Bill (the “Bill”) provides an opportunity for the UK to become a world leader in the fight against air pollution. To improve the lives of people across the country and promote clean growth, we need wide-reaching and bold legislative and policy reforms. This Bill should provide the starting point for this. As it stands, the Bill instead opens the door to weakening existing legal protections and risks being a missed opportunity for clean air.

The Healthy Air Campaign – a national coalition of health, transport and environmental NGOs – is urging Peers to support the following amendments to ensure that the Bill provides robust protections against one of the most harmful pollutants in our air:

- [Amendment 4 \(Clause 2\)](#) is the key amendment that would ensure that the new legal target for fine particulate matter (“PM_{2.5}”) commits the government to reducing this harmful pollutant to within existing World Health Organization (“WHO”) guidelines by 2030 at the latest; and
- [Amendment 12 \(Clause 7\)](#) would ensure that the importance of protecting health is reflected in the target review process set out in the Bill.

The UK Government has recently 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. If the government can commit to setting a bold target to protect nature then we hope it can do the same for people’s health.

Why we need stronger air quality targets

Air pollution is recognised by the UK Government to be the single largest environmental risk to public health in the UK. The former Health Secretary, Matt Hancock, warned of a growing national health emergency and said that: “[w]e cannot underestimate the very real impact that dirty air – this slow and deadly poison – is having on our lives, our health and our NHS.”

Air pollution affects all of us, from the time that we are in the womb and through to old age. The biggest impact is through cardiovascular disease, where air pollution can trigger heart attacks and strokes. Toxic air also exacerbates respiratory illnesses, such as COPD, increases the risk that asthma attacks result in hospitalisation or worse, and can stunt the lung growth of children making them more susceptible to chronic illness as they grow up. It can cause cancer and there is increasing evidence suggesting impacts on cognitive development, including impairing children’s ability to learn and possible links to dementia. Initial studies are also suggesting that air pollution could increase vulnerability to the most severe impacts of Covid-19.

The inquest into the role that air pollution played in the death of nine-year-old Ella Adoo-Kissi-Debrah has further highlighted just how damaging toxic air is for individuals, their families and the communities in which they live. 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 – the Bill provides the UK Government with the opportunity to implement the coroner's recommendations and prevent more deaths.

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. More positively, the [Confederation of British Industry](#) estimates that a £1.6bn annual economic benefit to the UK could be realised by meeting WHO guidelines. This is made up of £1bn per year from 40,000 additional 'working years', as the number of people retiring early due to ill-health decreases, and £600m per year from reduced sickness-related absences.

As the UK moves to a post-pandemic green recovery and towards our net-zero carbon targets, action taken today to reduce air pollution will be crucial to ensuring a healthy, resilient nation that will have the additional economic benefits of increased productivity across our communities.

Toxic air is also driving health inequalities, with the poorest communities often exposed to the highest levels whilst contributing less to the problem. They are also more likely to have a health condition that makes them highly susceptible to harm. Likewise, those with breathing challenges from long-COVID may now also go on to be more vulnerable to these pollutants in the air, as are children, older people and people with chronic illnesses. Air pollution also disproportionately affects people from ethnic minorities, and outdoor and transport workers.

The UK currently complies with the less ambitious existing legal limit for PM_{2.5}, which is double the WHO guideline,¹ but reductions in this pollutant have stagnated over recent years. More ambitious targets will help drive action to better protect people's health. It is clear that adopting the WHO guideline for PM_{2.5} as a binding target to be met by 2030 at the latest will set the country up to achieve this much needed outcome.

Indeed, in 2019, the then Environment Secretary, Michael Gove said that the Bill should introduce “*a legally binding commitment on particulate matter so that no part of the country exceeds the levels recommended by the WHO.*” More recently, this was also supported by the recommendations made by Coroner in the inquest into the death of Ella Adoo-Kissi-Debrah, and, in July, the [Committee on the Medical Effects of Air Pollution \(“COMEAP”\)](#), which provides independent advice to the government, said that “*reducing concentrations below the World Health Organization's Air Quality Guideline (10 µg/m³) would benefit public health.*”

Achievability of the WHO guideline for PM_{2.5}

In order to meet the ambition set out in the 2019 Conservative manifesto for the Bill to be the “*lodestar*” by which the Prime Minister himself has said “*we will guide our country to a cleaner and greener future*”, the government must commit to bold targets to ensure action is taken.

¹ The current legal limit for PM_{2.5} in the UK is an annual average concentration of 20 µg/m³ (micrograms per cubic metre – also noted as ‘µg m⁻³’) and the WHO guideline is 10 µg/m³.

[Defra has already had technical analysis](#) from leading scientists at Imperial College London and King's College London, in 2019, and concluded that achieving the WHO guideline for PM_{2.5} is technically feasible. The analysis also highlighted that the measures the government has already committed to as part of its Clean Air Strategy could take us 95% of the way to the WHO's recommendation for what should be the basic level of protection. [Further independent analysis by King's College London](#) commissioned by the Greater London Authority has subsequently showed that, with additional action, achieving the WHO guideline for PM_{2.5} is feasible by 2030 in what is the most polluted city in the country. This addresses what is arguably the main barrier to achieving this goal.

Additionally, in March, 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.
- *"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 pollution² *"would comprise the largest sub-component of PM_{2.5} looking across the UK as whole"*. But *"primary emissions of PM [particulate matter] 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, is in the global spotlight this year, and we have an opportunity to be world leaders in protecting people's health against what is also the single largest environmental health risk in the world.

However, we could be left behind and the price of this will be paid through the health of people across the UK. 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. Over the next few years, the European Union will also be reviewing its Ambient Air Quality Directive, from which our own 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.

² Secondary air pollution is pollution that is not directly emitted by a source but forms through chemical reactions between other substances already in the atmosphere including primary emissions of pollutants. For example, ground level ozone is a secondary pollutant; it is formed through a chemical reaction of volatile organic compounds and nitrogen dioxide in the presence of sunlight.

APPENDIX

Health and air pollution stats

To support Peers' scrutiny of the air quality provisions in the Environment Bill, the following are key facts regarding the impact of toxic air pollution on health:

- Approximately 14 million people in the UK are living with heart and circulatory diseases and/or a lung condition, such as asthma or Chronic Obstructive Pulmonary Disease ("COPD"). For these individuals, a spike in air pollution poses an immediate health threat, worsening their symptoms and increasing the risk of hospitalisation and death.
- Research from the British Heart Foundation has found:
 - A link between exposure to poor short-term air quality and increased hospitalisation rates and deaths due to heart failure and circulatory problems.
 - Particulate matter pollution can enter the bloodstream from the lungs and remain there for several months, showing that the health risk continues long after the initial exposure.
 - Nanoparticles can accumulate in fatty plaques in our arteries, potentially making them more unstable and likely to break off and cause a heart attack or stroke.
 - Air pollution can promote blood clotting and put the heart under additional stress, both of which could increase the risk of heart attack or stroke.
- Research from the British Lung Foundation has found:
 - Nine out of ten patients with lung conditions surveyed have reported air pollution affects their health and wellbeing, with 63% of people with a lung condition feeling out of breath on high air pollution days. As a result, there is a clear increase in the number of people admitted to hospitals and visiting GPs with breathing problems during these episodes.
 - In 2019 over 8,500 schools and almost 3,000 health centres were in areas with levels of PM_{2.5} above that recommended by the WHO, putting at risk the health of millions of children, patients and health workers.
 - Around a third of children in the UK are growing up in areas with unsafe levels of air pollution. Children living in highly polluted areas are four times more likely to have reduced lung function in adulthood.
 - In the UK, 1.1 million children have asthma and one in five of us will be diagnosed with a respiratory condition at some point in our lives.

FAQs on the WHO air quality guidelines and government ambition

Has the UK Government not already shown world-leading ambition through its 2019 Clean Air Strategy?

In May 2020, the WHO's Director in Public Health and the Environment, Dr Maria Neira, confirmed that the WHO were supportive of the UK's Clean Air Strategy, but she said that with the Environment Bill the government needs to "*raise the level of ambition*".

Does the WHO intend their guidelines to be legal targets?

The WHO's Director in Public Health and the Environment has confirmed that the guidelines should be the minimum goal for leaders who want to get serious about tackling air pollution.

The WHO also recommends that all governments “*try to move as soon as possible*” to their guidelines, and has stressed that by taking quick and ambitious action leaders “*will be accountable for an important health benefit for [their] citizens*”.

As there is no safe level for pollution, is adopting the WHO guideline for PM_{2.5} too simplistic?

The WHO and COMEAP have said that no threshold has been identified below which no damage to health is observed. However, this amendment does not stop the government from going further or setting other targets to further reduce average exposure, or to tackle other forms of air pollution. Rather, it sets a minimum, evidence-based threshold to provide everyone across the country with a basic level of protection.

Adopting the WHO guideline for PM_{2.5} would guarantee a better level of health protection for everyone including those disproportionately affected by toxic air such as children and older people. The recent inquest into the death of nine year-old Ella Adoo-Kissi-Debrah have put a name and a face to the very real harm that air pollution has - not only on individuals but also on their families. In the inquest, the coroner explicitly highlighted Ella’s exposure to levels of air pollution above WHO guidelines and existing legal limits and concluded that this “*excessive*” pollution contributed to her death.

The government has proposed a “dual approach” to tackling PM_{2.5} pollution so is this amendment necessary?

We welcome the government’s commitment to also adopting a new exposure reduction target as this would help to drive improvements in areas that may already be below WHO guideline levels. However, this needs to sit alongside an ambitious ambient concentration target that provides a minimum basic level of protection for everybody based on the scientific evidence and within the next decade. A legal framework that drives down average exposure, but allows very high levels of pollution to remain in those areas that are worst affected, would not be a fair one. People should not be condemned to poor health based on where they live, work or study.

COMEAP in its advice to Defra published in July also stresses that “*a focus on reducing long-term average concentrations of PM_{2.5} is appropriate*” and that “*reducing exposure of the whole population would achieve the greatest overall public health benefit*”.

Do we need more time to work out the technicalities of this new target?

The UK already monitors and assesses against existing legal limits that set the maximum concentration for PM_{2.5}, and so already has a framework to work within.

In terms of setting a safer concentration for PM_{2.5}, this work has already been done by world experts, including some from the UK, at the WHO. The need for improvements to the monitoring and assessment regimes should not be used as a reason to avoid setting the direction of travel now and start driving much needed action as quickly as possible. The need is urgent and real - according to the [British Heart Foundation](#), around 15 million people in the UK live in areas where average levels of these tiny toxic particles in the air exceed WHO guidelines. [Asthma UK and the British Lung Foundation](#) have further identified 8,549 schools and colleges situated in these same areas.

The coalition is supported by the following partners:

