

#### Questions:

- **Do you agree or disagree with our proposed metric for considering resource productivity?**  
**[Agree/Disagree/Don't know]**
  - **[If disagree] What reasons, or potential unintended consequences can you provide for why the government should consider a different metric and what data exists to enable reporting for this alternate metric?**

The Environment Act 2021 provides the required legal framework for realising many of the policy aims of the RWS, leading to increased resource productivity. These include reforms to, and the introduction of, extended producer responsibility schemes, the necessary powers to introduce eco-design measures on non-energy related products and requirements for the mandatory provision of consumer information. Further information about these approaches will be included in the second Waste Prevention Programme when it is published later this year. Further possible policy instruments to improve resource productivity, which Defra is currently exploring, include regulatory, information-based, price-based, as well as possible spend interventions. The Net Zero Strategy also summarise cross-government ambitions to reduce emissions by encouraging circular economy models in industry.

#### Question:

- **Of the possible policy interventions described, which do you think will be most effective to meet a resource productivity target? Please specify whether these policies would be most effective if implemented nationally or regionally, and whether measures should be product or sector-specific.**

## Target proposals for air quality

### The problem

Air pollution poses the biggest environmental risk to public health and is a particular risk to vulnerable groups, including the elderly, the very young, and those with existing health conditions. It can also impact on the natural environment, damaging habitats, impeding the ecosystem services we rely on, and contributing to climate change. Further details on

impacts related to air pollution can be found in the air quality evidence report<sup>30</sup>. Although air pollution has reduced significantly in recent decades, there is more to do to deliver clean air.

The government's [Clean Air Strategy](#), published in 2019, outlined a comprehensive suite of actions required across all parts of Government to improve air quality and maximise public health benefits. This included national regulations to reduce emissions from domestic burning, industry and farming, alongside stronger powers and an improved framework for local government to tackle more localised issues, as well as a commitment to set a legally binding target for PM<sub>2.5</sub>.

## **Proposed targets to address it**

- Annual Mean Concentration Target ('concentration target') – a target of 10 micrograms per cubic metre ( $\mu\text{g m}^{-3}$ ) to be met across England by 2040.
- Population Exposure Reduction Target ('exposure reduction target') – a 35% reduction in population exposure by 2040 (compared to a base year of 2018).

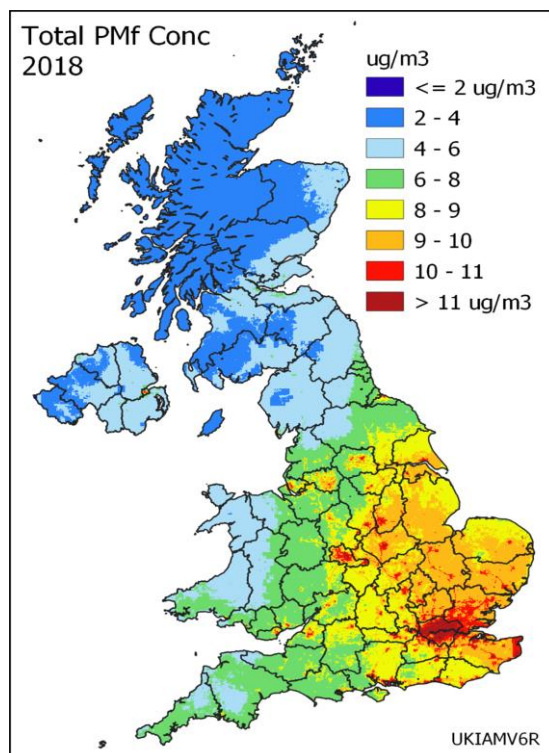
These targets focus on reducing concentrations of fine particulate matter (PM<sub>2.5</sub>) as evidence shows that this is the pollutant of greatest harm to human health. Particulate matter (PM) is anything in the air which is not a gas. It can come from natural sources or human-made sources and be formed through chemical reactions between other pollutants in the atmosphere. PM<sub>2.5</sub> is particulate matter with a diameter of 2.5 microns or less, which is one 400<sup>th</sup> of a millimetre. Further information on PM<sub>2.5</sub> can be found in the evidence report.

Whilst it is likely that some components of PM<sub>2.5</sub> may be more harmful than others, evidence is not sufficiently developed to be able to focus on specific components for the purposes of target setting. Therefore, current evidence supports a focus on PM<sub>2.5</sub> total mass. However, as the evidence develops, there may be scope to develop more specific targets that are able to align more closely with the most harmful components of PM<sub>2.5</sub>.

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<sup>30</sup> Detailed in Air quality targets evidence report: Introduction; Context to be published at <https://consult.defra.gov.uk/natural-environment-policy/consultation-on-environmental-targets>

Figure 2 Modelled PM<sub>2.5</sub> concentrations for 2018 (Imperial College, 2021)



PM<sub>2.5</sub> concentrations vary considerably across the country, as illustrated in the map in Figure 2. By setting these two targets, we are ensuring action that, not only reduces PM<sub>2.5</sub> levels where concentrations are highest, but also reduces exposure to PM<sub>2.5</sub> across the whole country. This dual-target approach is particularly important, given there is no known safe level and that concentrations differ greatly across the country.

The targets we are proposing focus on reducing impacts from long-term exposure and, therefore, consider changes in concentrations from year to year.

Reducing PM<sub>2.5</sub> to meet these ambitious targets will have a significant benefit on health. A reduction in population exposure in England of just 1  $\mu\text{g m}^{-3}$  could prevent an estimated 50,000 cases of coronary heart disease, 16,500 strokes, 9,000 cases of asthma and 4,000 lung cancers over 18 years<sup>31</sup>. The full cost-benefit analysis can be found in the separate impact assessment<sup>32</sup>.

These targets will also reduce health inequalities and contribute to levelling up objectives. Currently, areas of high deprivation tend to have greater exposure to PM<sub>2.5</sub>. Our proposed

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<sup>31</sup> [Health matters: air pollution - GOV.UK \(www.gov.uk\)](https://www.gov.uk/health-matters-air-pollution)

<sup>32</sup> Impact Assessment will be published shortly at <https://consult.defra.gov.uk/natural-environment-policy/consultation-on-environmental-targets>

targets would ensure that this gap decreases, so that exposure is more consistently lower across all communities. Finally, these targets will reduce the impact of air pollution on ecosystems and have large co-benefits for climate change objectives. **Table 1** outlines how it is proposed that the two targets will be assessed. Further information on these areas is provided in the evidence report<sup>33</sup>.

**Table 1 Proposed Air Quality Target Assessment Details**

	Concentration Target	Exposure Reduction Target
<b>Time based averaging</b>	<ul style="list-style-type: none"> <li>Annual mean assessment (calendar year), at each monitoring location.</li> </ul>	<ul style="list-style-type: none"> <li>Three-year average (the average of three consecutive calendar years).</li> </ul>
<b>Location based averaging</b>	<ul style="list-style-type: none"> <li>Monitoring sites will need to meet (report measurements at or below) the concentration level by the achievement date.</li> <li>If any site exceeds the level at the target end point, an assessment will look at measurements four years.</li> <li>If the target was met in 3 out of the four previous years, then the target will be considered to have been met.</li> </ul>	<ul style="list-style-type: none"> <li>A national indicator based on the average of representative monitoring sites across the country.</li> </ul>
<b>Assessment Locations</b>	<ul style="list-style-type: none"> <li>Monitoring locations on the Automatic Urban and Rural Network*</li> </ul>	<ul style="list-style-type: none"> <li>Representative site locations on the Automatic Urban and Rural Network* indicative of average population exposure</li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Targets will be monitored at a minimum number of representative locations across the country.</li> <li>We plan to increase the number of monitoring sites on the Automatic Urban and Rural Network* to support assessment of these targets.</li> <li>Requirements for monitoring will be defined in regulations made to set the targets.</li> </ul>	

\* The Automatic Urban and Rural Network is the national monitoring network operated by the Environment Agency on behalf of Defra.

<sup>33</sup> Detailed in Air quality targets evidence report; Defining target metrics; Assessment method to be published at <https://consult.defra.gov.uk/natural-environment-policy/consultation-on-environmental-targets>

## Why we are proposing targets at this level

To determine the proposed target, a range of future emission scenarios were modelled each producing different PM<sub>2.5</sub> concentrations. Each scenario consists of 50 to 70 illustrative measures of varying levels of ambition. The modelling shows that the proposed targets are achievable, but that action will be required across all sectors of society including transport, manufacturing, construction, agriculture and energy, and to be taken by government, industry and individuals. Some action will need to be taken nationally, some will need to be targeted at urban areas where concentrations and population density are highest, and others will require international collaboration. The same measures will contribute to both targets, but urban measures will have greatest impact on delivery of the concentration targets.

Two areas where further action may be needed are domestic burning and road transport. For instance, changing to cleaner stoves and cleaner and more efficient fuels in domestic burning. The use of electric vehicles will eliminate tailpipe emissions but there is some debate about the magnitude of emissions from non-exhaust sources (brakes, tyres and road wear – as well as resuspension of road dusts from vehicle movements) compared to traditionally powered vehicles. Further assessment is needed to determine the impacts of increased electric vehicle use (e.g. from regenerative braking) and research into innovative abatement technologies is already underway and will need to continue over the coming years to inform our approach.

These are not the only areas where action will be needed – reductions will be needed across all of society as reducing PM<sub>2.5</sub> is not a single source issue. We believe that the proposed targets strike an appropriate balance between being ambitious and achievable - delivering significant health benefits through utilising proportionate and viable measures.

Achieving these targets by 2040 will require sustained, long-term progress and many actions will require significant investment and behaviour change in order to be effective. However, actions we are already taking (e.g., on burning of wet wood and coal) will contribute to achieving these targets, and interim targets will ensure suitable progress is made towards the final target. Importantly, as policy pathways for achievement of the targets is developed, there will be further opportunities for consultation on specific measures that are tailored to local areas and their sources. We are currently exploring the role local authorities will play in helping to meet these targets, as part of the Air Quality Strategy review. We will be consulting on this in late 2022, before it is finalised, and we will publish a revised National Air Quality Strategy in 2023.

## Questions on concentration target

### Questions:

- Do you agree or disagree with the level of ambition proposed for a PM2.5 concentration target? [Agree/Disagree/Don't know]
  - [If disagree] What reasons can you provide for why the government should consider a different level of ambition?

## Questions on exposure reduction target

### Questions:

- Do you agree or disagree with the level of ambition proposed for a population exposure reduction target? [Agree/Disagree/Don't know]
  - [If disagree] What reasons can you provide for why the government should consider a different level of ambition?

## Part 4: Monitoring and evaluation of our suite of targets

The Environment Act 2021 creates a new statutory cycle of monitoring, planning and reporting on environmental improvement, based around a long-term Environmental Improvement Plan. The 25 YEP is the first such Environmental Improvement Plan, which will be reviewed at least every five years.

The government must report annually on what it has done to implement the Environmental Improvement Plan and on whether the natural environment (or particular aspects of it) has improved. That report will also consider the progress that has been made towards meeting targets.

The new independent statutory environmental body, the Office for Environmental Protection, must also report annually on the progress made in improving the natural environment, in accordance with the Environmental Improvement Plan, and on progress towards meeting targets. That report may also include recommendations to government about how it can improve progress, to which the government will have to respond.

### Future legally binding targets

While we believe that these are the appropriate targets to set at this moment for the reasons included above, the Act allows for additional long-term targets to be set in the future. We expect any future long-term targets will be developed in a similar way to the

first suite, through expert advice, stakeholder engagement, and public consultation, as part of the robust, evidence-led target-setting process. The natural environment is complex, and we see target-setting as an iterative process, built upon over time as our evidence base and understanding develops. We want to use targets to meaningfully drive the environmental outcomes that we need.

We will regularly test whether the suite of targets we have in place has the necessary breadth and ambition. At least every five years, we will conduct the Significant Improvement Test and assess whether meeting the targets set under the Environment Act's framework, alongside any other statutory environmental targets, would significantly improve England's natural environment. The Secretary of State will use the outcome of the test to decide whether to modify existing targets to make them more ambitious or set additional long-term targets.

We will conduct the first test and lay a report on the outcome before Parliament by 31 January 2023. This is the same deadline for the first review of the Environmental Improvement Plan. These two processes are designed to work together to ensure successive governments continue to take steps to improve the natural environment.

## **Part 5: After the consultation**

Once the government has collated responses from this public consultation, these will be summarised and included in a published response on [www.gov.uk/defra](https://www.gov.uk/defra).