

# Air quality regimes are playing catch up as science evolves and policy ambitions are too blunt, researchers say

August 5 2024

---



Credit: Unsplash/CC0 Public Domain

The failure to co-ordinate legal, policy and scientific thinking risks "a squandering of opportunity" to improve air quality, concludes new environmental law research, co-led by a UCL academic.

In their *Science* [paper](#), "Harnessing science, [policy](#) and law to deliver clean air," Professors Eloise Scotford (UCL Faculty of Laws), Alastair Lewis (University of York) and Delphine Misonne (UCLouvain Saint-Louis, Brussels) review recent research and highlight significant risks to achieving clean air globally.

Despite significant achievements in air quality law and policy in some parts of the world in recent decades, scientific evidence points to health harms arising from [air pollution](#) at ever-lower concentrations, making clean air increasingly urgent yet ever more difficult to achieve.

Research shows that, for many national regulatory regimes, elevating the ambition of air-quality policies and outcomes is not just a matter of increasing legal standards to the level of World Health Organization Air Quality Guidelines.

Recognizing this complexity, the researchers highlight the need to shift from policy ambition to policy deliverability, through the agile integration of scientific, policymaking and legal knowledge.

"Once-in-a-generation transitions, if not accompanied by a consideration of the air quality impacts, and a coordinated regulatory refresh, could lead to a squandering of opportunity," they say in their paper.

The researchers point to several areas where co-ordinated action is needed: around setting standards; deciding which pollutants to legislate for; setting targets to reduce pollution as well as for it not to exceed certain levels; [urban planning](#) including considering the impact of air pollution on deprived communities and minority [ethnic groups](#); and co-

ordinating policymaking at a local, national and supranational level.

One of these issues—deciding which pollutants to regulate—concerns the fact that a relatively small number of pollutants have been the focus of air quality laws for the past four decades, but these may need expanding to better represent the current state of the science in terms of toxicology and harms.

The problem, they say, is that "legally embedded standards are generally only created when the scientific evidence of harms is considered compelling by lawmakers," leading to "criteria pollutants" such as the very fine particles known as PM<sub>2.5</sub> being commonly regulated today. Being cheap and easy to measure, PM<sub>2.5</sub> has become the "de facto variable" in health studies, they say.

But they add, "There is likely merit in limit values for [black carbon](#), ultrafine particles, formaldehyde or subcomponents of Particulate Matter such as secondary organic aerosol; however, each has yet to accumulate weight of evidence to become legal obligations."

To help counter this bias, the researchers are calling for "exploratory" air-pollution observations, following the precautionary principle, "ideally" coupled with research funding to incentivize them.

Another key issue in ensuring that clean air policies are deliverable and delivered is the coordination of policymaking.

The benefits of reducing air pollution and climate emissions have "long been articulated by the scientific community, but there is an under-recognized need for legal and regulatory coordination as well," the researchers say in their paper.

They cite the example of low-carbon fuels for aviation, saying that

carbon regulation alone "does not guarantee better [air quality](#)."

Climate commitment for the adoption of low-carbon fuels can only succeed in reducing pollution if there are "parallel, internationally agreed regulatory requirements for reduced engine emissions of nitrogen oxide and Particulate Matter," they say.

In their conclusion to their paper, the researchers say, "To move the debate forward, we argue that growing the space for dynamic regulatory development at the science-law-policy interface is an important avenue for accelerating the delivery of global [clean-air](#) goals."

**More information:** Alastair Lewis et al, Harnessing science, policy, and law to deliver clean air, *Science* (2024). [DOI: 10.1126/science.adq4721](#)

Provided by University College London

Citation: Air quality regimes are playing catch up as science evolves and policy ambitions are too blunt, researchers say (2024, August 5) retrieved 5 August 2024 from <https://phys.org/news/2024-08-air-quality-regimes-playing-science.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--