Cutting air pollution in Europe would prevent early deaths, improve productivity and curb climate change

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Air pollution Environment and health

Europe’s air is getting cleaner but persistent pollution, especially in cities, still damages people’s health and the economy. The European Environment Agency’s (EEA) new analysis on air quality shows that exposure to air pollution caused about 400,000 premature deaths in the European Union (EU) in 2016.

Europe has now a unique opportunity to set an ambitious agenda that tackles the systemic causes of environmental pressures and air pollution. We are making progress but it’s time to speed up the changes in our energy, food and mobility systems to put us on a trajectory of sustainability and a healthy environment.

Hans Bruyninckx, EEA Executive Director

The EEA’s ‘Air quality in Europe — 2019 report’ shows that almost all Europeans living in cities are still exposed to air pollution levels that exceed the health-based air quality guidelines set by the World Health Organisation (WHO). The new EEA analysis is based on the latest official air quality data from more than 4 000 monitoring stations across Europe in 2017.

Three main pollutants cause significant damage

Poor air quality continues to damage Europeans' health, especially in urban areas, with particulate matter (PM), nitrogen dioxide (NO2) and ground-level ozone (O3) causing the biggest harm.

According to the EEA analysis, fine particulate matter (PM2.5) alone caused about 412,000 premature deaths in 41 European countries in 2016. About 374,000 of those deaths occurred in the European Union (EU).

As well as damaging health and reducing life expectancy, poor air quality also causes economic losses, for example, through higher health care costs, reduced yields from agriculture and forestry, and lower labour productivity. An earlier EEA assessment showed how air and noise pollution and extreme temperatures disproportionately affect Europe’s most vulnerable citizens.

Health benefits of improving air quality

Despite persisting pollution, the new EEA data confirm that binding regulations and local measures are improving Europe’s air quality with positive health effects. For example, fine particulate matter caused about 17,000 fewer premature deaths in the EU in 2016, compared with 2015. Even though weather differences between years can affect pollution levels and their impacts, the reduction is consistent with the EEA’s earlier estimate that the number of premature deaths caused annually by PM2.5 in Europe have been reduced by about half a million since 1990.

Compared with the WHO guidelines, long-term fine particulate matter concentrations were too high at 69 % of monitoring stations across Europe in 2017, including at least some monitoring stations in all reporting countries, except Estonia, Finland and Norway.

Compared with the EU limit values, fine particulate matter concentrations were too high in seven EU Member States in 2017 (Bulgaria, Croatia, Czechia, Italy, Poland, Romania and Slovakia) In addition, four EU Member States, (Bulgaria, Hungary, Poland and Slovakia) have not yet met the EU’s 2015 target for the three-year average exposure for fine particulate matter.

'The European Environment Agency’s Air Quality in Europe report is an important and timely reminder that air pollution continues to impact most regions across the European Union, and affects the lives of most citizens. It is simply unacceptable that any of us should need to worry about whether the simple act of breathing is safe or not. We therefore need to work even harder to make sure our EU air quality standards are met everywhere,' said Karmenu Vella, EU Commissioner for Environment, Maritime Affairs and Fisheries.

Potential in curbing both air pollution and climate change

Road transport, power plants, industry, agriculture and households are the main sources of air pollutants. These sources are closely linked to Europe’s core systems of production and consumption, and are also key drivers of greenhouse gas emissions and biodiversity loss.

'Europe has now a unique opportunity to set an ambitious agenda that tackles the systemic causes of environmental pressures and air pollution. We are making progress but it’s time to speed up the changes in our energy, food and mobility systems to put us on a trajectory of sustainability and a healthy environment', said Hans Bruyninckx, EEA Executive Director.

Ursula von der Leyen, the President-elect of the European Commission, has put forward a “European Green Deal” as the first priority of her Political Guidelines for the new Commission. This agenda includes the goal of making Europe the first climate neutral continent, ensuring a just transition, and moving towards zero-pollution by putting forward a “cross-cutting strategy to protect citizens’ health from environmental degradation and pollution, addressing air and water quality, hazardous chemicals, industrial emissions, pesticides and endocrine disrupters.”

In many European cities, citizens are demanding cleaner air for themselves and their children. The EEA’s European Air Quality Index provides citizens with a tool for checking the air quality in their city and supports public engagement in efforts to reduce air pollution.

EU Clean Air Forum

The European Commission is organising the second EU Clean Air Forum, hosted by the Government of Slovakia in Bratislava, on 28–29 November 2019, to discuss the development and implementation of European, national and local air policies, projects and programmes. The 2019 Forum will focus on energy, agriculture, and clean air funding mechanisms.

Methodological background

The EEA has published a briefing, EEA’s health risk assessments of air pollution, that provides an overview of how the EEA calculates its estimates on the health impacts of poor air quality.

The health impacts of exposure to air pollution are diverse, ranging from inflammation of the lungs to premature deaths. In the EEA’s health risk assessment, mortality is selected as the health outcome that is quantified, as it is the one for which the evidence is most robust. Mortality due to the long-term exposure to air pollution is estimated in terms of “premature deaths” and as “years of life lost”.

The estimates provide a measure of the general impact of air pollution across a given population and, for example, the numbers cannot be assigned to specific individuals living in a specific geographical location.

The health impacts are estimated individually for the three pollutants (PM2.5, NO2 and O3) and the numbers cannot be added together to determine total health impacts, as this may lead to double counting.