



# EU's Clean Air for Health Transition 2021-2030 HEAL 10 demands



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Every one of us is vulnerable to the adverse health impacts of pollutants in the air. Equally, every one of us will benefit from a determined evidence-based air pollution legislation that will prevent disease and promote health. As the scientific evidence regarding air pollution's health impacts mounts globally, in the coming year the EU is presented with a once in a generation opportunity to address its greatest environmental health threat.

## A HUGE HEALTH PROMOTION AND DISEASE PREVENTION POTENTIAL IN THE AIR

Air pollution is the top environmental threat to health in the European region and globally. Most air pollution originates from human activities and the burning of fossil fuels is a key factor. The health burden from poor air quality in the EU is unacceptably high, with around 400,000 premature deaths and hundreds of billions of euros in health costs each year. Recent studies have shown that children are particularly at risk of harm from polluted air, given that their lungs, heart, brain, respiratory, immune and nervous systems are still developing. Their health can already be affected at early-life stages or even before birth, with lifelong consequences.

The potential to prevent non-communicable and chronic diseases such as cardiovascular and cerebrovascular diseases, respiratory diseases lung cancer, diabetes, as well as for lower respiratory infections (LRIs), such as pneumonia, and neonatal deaths is huge from improving air quality. Air pollution is one of the five main risk factors for non communicable diseases [1].

In the WHO European Region, air pollution is estimated [2] to cause about 33% of new cases of childhood asthma [3], 17% of all lung cancer cases, 12% of all ischemic heart disease, 11 % of all strokes, and 3% of all chronic obstructive pulmonary disease (COPD).

Evidence on adverse effects of air pollution on diseases of the brain, including dementia and mental health, are rapidly emerging, and likely add to the increasing burden of air pollution.

Evidence is also growing regarding the harmful effects of low level pollution, pointing to the fact that there may not be any safe level of exposure.

## WHAT SHOULD BE DONE AT EU LEVEL

Air pollution is largely preventable and EU air quality standards – especially legally binding limit values – have proven to be instrumental in cleaning up the air. The 2008 EU Ambient Air Quality Directives (AAQDs) are the cornerstone of the EU's clean air policies, setting standards for air quality to protect people's health. They are a key piece of legislation for disease prevention from environmental threats.

To save lives and prevent acute and chronic diseases, it is now that prevention policies have to reflect the latest available science. The EU Green Deal has the potential for a real leap forward in protecting and promoting health by the next EU elections in 2024.

The health community considers these four goals to be of paramount importance:

- **A rapid and urgent transition** to clean air for all, everywhere in the EU **by 2030**
- **Protection and prioritisation** of those with one or multiple forms of **biological or social vulnerability**, such as children, older people, those already sick and people living in poverty
- **Swift legislative process** with clear steps and milestones reflecting the urgency to act
- **EU financial and technical support** to air pollution prevention in the European region (Western Balkans and Turkey)

## DEMAND 1: TRANSITION TO FULL ALIGNMENT OF EU STANDARDS WITH WHO GUIDELINES AND LATEST AVAILABLE SCIENCE BY 2030

### WHY - Current EU air quality standards fail to reflect the latest science

The current EU air standards, agreed back in 2008, are the result of an outdated political compromise to the detriment of the health of people living in the EU. They did not and do not reflect the latest science embodied in the WHO Air Quality Guidelines. On 22 September 2021 the World Health Organization published their updated recommendations for air quality, based on a thorough scientific review process. Thus the EU legally binding limits for air pollutants should follow these WHO regularly updated guidelines to the full extent.

Pollutant included in WHO's revised guidelines	Averaging time	Concentration recommendation 2021 AQG level	Current EU standard
PM 2.5, µg/m <sup>3</sup>	Annual	5	25
	24-hour	15	-
PM 10, µg/m <sup>3</sup>	Annual	15	40
	24-hour	45	50
Ozone, µg/m <sup>3</sup>	Peak season	60	
	8-hour	100	120
NO <sub>2</sub> , µg/m <sup>3</sup>	Annual	10	40
	24-hour	25	
SO <sub>2</sub> , µg/m <sup>3</sup>	24-hour	40	125

Table: Overview of new WHO guidelines and current EU standards

Limits for pollutants currently covered by the AAQD but that are not included in the WHO's revised guidelines need to be updated as well in line with the latest available science.

## DEMAND 2: BROADEN THE SCOPE OF AIR QUALITY STANDARDS AND MONITORING, TO INCLUDE OTHER POLLUTANTS HARMFUL FOR HEALTH

### WHY - Current EU regulatory framework leaves major air quality challenges unaddressed

In the past years, the body of evidence has grown on how air pollutants currently not included under the EU's standards contribute to poor air quality and harm health. This includes mercury, black carbon, ultrafine particles and ammonia. For those pollutants, air quality standards and monitoring requirements should be introduced.

- **Mercury (Hg)** is a neuro-toxic heavy metal that can cause both chronic and acute poisoning. Coal combustion is the second largest anthropogenic source of mercury emissions in the world and an EU study has shown that more than 1.8 million children are born every year with methylmercury (MeHg) exposures above the limit of 0.58 microgram per gram ( $\mu\text{g/g}$ ), considered to be safe.
- **Black carbon** [4] is an indicator of combustion-related air pollution and also contributes to global warming. It has been associated with cardiopulmonary morbidity and mortality, as well as respiratory and lung diseases.
- **Ultrafine particles (PM 0.1)** can travel [5] to all organs and have been associated with systemic inflammation, endothelial or cerebral dysfunction, ischemic cardiovascular disease and hypertension, diabetes and cancer, as well as an increased risk of low birthweight.
- **Ammonia (NH<sub>3</sub>)**, mainly emitted by agriculture, is a secondary particulate matter precursor [6]. Other sources of ammonia are of industrial nature, such as artificial fertilizers production.

### Indoor air quality

Moreover, regulatory action should be put forward to address the highly fragmented area of **indoor air quality** and the growing problem of aeroallergens, such as pollen. With climate change, the pollen season, the intensity as well as the diversity of pollen is increasing, impacting air quality. **Studies suggest that, due to climate change, the air concentrations of allergenic ragweed pollen could quadruple in Europe by 2050, increasing the number of those affected from the current total of 33 million to 77 million people.** Ambient air pollution is at the same time a major contributor to indoor air pollution where it's combined with pollutants originating for indoor (such as chemicals, damp and mould, indoor combustion) therefore an integrated framework should be put forward for clean air both indoors and outdoors.

## DEMAND 3: FOR POLLUTION PEAKS, ESTABLISH A COMPREHENSIVE ALERT SYSTEM FOR ALL POLLUTANTS, AND PROVIDE ALERTS TO VULNERABLE GROUPS

## DEMAND 4: STANDARDISE THE AIR QUALITY REGULAR INFORMATION SYSTEMS TO ALWAYS INCLUDE INFORMATION ON HEALTH THREATS

### WHY - Gaps in air quality information exist, especially for vulnerable groups

Alert thresholds are an essential tool to protect people, especially vulnerable groups, during high pollution events. As such, there is a need for alert thresholds and effective short-term action plans for all main pollutants. The European Commission should take steps to standardise the system for air pollution alerts across the EU, especially for particulate matter (PM). It should introduce the obligation to adopt short-term action plans to tackle high PM pollution events. Information should also be tailored to specific vulnerable groups of the population, such as patients living with chronic respiratory, cardiovascular diseases and diabetes.

In addition, there are currently many different systems in place for providing regular and up-to-date information on air quality on a daily and annual basis. Most of these include a colour-coding scheme, but they do not link the concentrations to health threats, especially for vulnerable groups (as for example the Canadian Air Quality Health Index does [7]). There should be a harmonised approach for the provision of air quality information across the EU.

Furthermore, the European Commission should, in collaboration with the scientific community and the civil society, establish a real-time pollen information system to ensure the timely dissemination of and access to information to citizens with pollen allergies.

#### **DEMAND 5: ACKNOWLEDGE AND ADDRESS INEQUALITIES**

##### **WHY - Impacts of socio-economic inequalities on health are currently not addressed**

There is established evidence concerning the higher vulnerability of socially deprived people with respect to air pollution [8]. An EU-financed project APHEKOM, also first established that living close to busy roads increases children's asthma risk. A recent EEA report also pointed out that the specific risks to people and communities living in poverty from air pollution and other environmental factors has, so far, not been addressed, and has called for a more comprehensive policy framework at EU and local level.

#### **DEMAND 6: PRIORITISE HEALTH TO ENABLE POLICY COHERENCE AND FULL ENFORCEMENT**

##### **WHY - Mainstream clean air action in all EU legislation and programmes**

EU and national governments should adopt coherent policies to tackle relevant sources of pollutants and support the achievement of air quality standards. They should consider environmental benefits and compliance with air quality standards when using public funds (such as the EU Cohesion Fund) and pursue timely enforcement action at EU level.

#### **DEMAND 7: ESTABLISH A MECHANISM TO AUTOMATICALLY UPDATE AND REVIEW THE AIR QUALITY LEGISLATION, SPEED UP ITS IMPLEMENTATION**

##### **WHY - Too long delay between the uptake of new evidence in EU air legislation**

The body of evidence on how air pollution harms health has been steadily increasing, with 40,000 research papers just in the last ten years. The EU's current air quality standards are based on a review of the evidence from the beginning of the 2000s, and haven't been updated since 2008. The starting point for any update mechanism after the new legislation enters into force should be the latest science currently already available and which the new legislation should reflect immediately from the start.

#### **DEMAND 8: DEVELOP GUIDANCE FOR AIR QUALITY MONITORING STATIONS MEASUREMENT, INCLUDING IN EU PRE-ACCESSION COUNTRIES**

#### **DEMAND 9: ISSUE GUIDANCE ON CITIZENS SCIENCE PROJECTS INCLUDING BEST PRACTICE FOR PERFORMING MEASUREMENTS AND COMMUNICATING RESULTS. THE BETTER INTEGRATION OF RESULTS OF OFFICIAL AND CITIZEN SCIENCE MONITORING SHOULD ALSO BE CONSIDERED.**

##### **WHY - Current air quality monitoring is inconsistent**

Consistent and reliable air quality information across the EU legal requirements for monitoring networks are essential to make sure that everyone in the EU has access to timely and reliable information about air quality. Fixed sampling points for measuring pollutants are a key tool to ensure monitoring is done adequately and

consistently across the EU and their number should increase. Citizens also have a growing role to play in assessing air quality in their cities, with various citizen science projects.

The European Commission should provide clearer guidance to national authorities on the location and number of sampling points. Moreover, the European Commission should monitor Member States compliance with the legal requirements for location of sampling points. When appropriate, the European Commission should start infringement proceedings. The guidance should describe the uncertainties when using different sensors and describe best practices for performing measurements and validating results. Within the EU Pre-Accession process, such guidance should also be given to the public authorities of the countries concerned, including at the local level, in the course of their process of aligning national air quality standards with the EU framework.

## DEMAND 10: INVOLVE THE HEALTH SECTOR IN EU ACTION FOR BETTER AIR QUALITY

### WHY - Health sector not sufficiently involved

The expertise of the health sector in any topic related to health is a fundamental piece in leveraging positive change in the health outcomes for the population. In the past years, more and more health professionals, patients and medical organisations have spoken out on the urgent need for clean air, and have provided their expertise in getting there. As the health sector is directly dealing with the health impacts of air pollution, it should be fully involved in policy action towards zero air pollution, including at the national and local levels. In practice, clinical doctors have scarce knowledge of environmental impact on health, including the established linkage between air pollution and health, globally. Some actions need to be taken in order to promote the stronger involvement of this part of the health sector in tackling air pollution through promoting preventive measures to both the patients and the decision-makers.

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#### REFERENCES:

- 1 [https://www.who.int/airpollution/events/conference/AP\\_exposure\\_and\\_NCDs\\_background.pdf?ua=1](https://www.who.int/airpollution/events/conference/AP_exposure_and_NCDs_background.pdf?ua=1)
- 2 European Environment Agency - Healthy environment, healthy lives: how the environment influences health and well-being in Europe - 2020 <https://www.eea.europa.eu/publications/healthy-environment-healthy-lives>
- 3 Haneen Khreis, Marta Cirach, Natalie Mueller, Kees de Hoogh, Gerard Hoek, Mark J Nieuwenhuijsen and David Rojas-Rueda. Outdoor Air Pollution and the Burden of Childhood Asthma across Europe. *Eur Respir J* 2019; in press <https://doi.org/10.1183/13993003.02194-2018>
- 4 <https://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2012/health-effects-of-black-carbon-2012>
- 5 <https://www.nature.com/articles/s12276-020-0403-3>
- 6 <https://www.eea.europa.eu/data-and-maps/indicators/eea-32-ammonia-nh3-emissions-1>
- 7 <https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index/health-risks.html>
- 8 Brunt et al. Air pollution, deprivation and health: understanding relationships to add value to local air quality management policy and practice in Wales, UK. 2016 <https://academic.oup.com/jpubhealth/article/39/3/485/3076806>

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**The Health and Environment Alliance (HEAL)** is the leading not-for-profit organisation addressing how the environment affects human health in the European Union (EU) and beyond. HEAL works to shape laws and policies that promote planetary and human health and protect those most affected by pollution, and raise awareness on the benefits of environmental action for health.

HEAL's over 90 member organisations include international, European, national and local groups of health professionals, not-for-profit health insurers, patients, citizens, women, youth, and environmental experts representing over 200 million people across the 53 countries of the WHO European Region. As an alliance, HEAL brings independent and expert evidence from the health community to EU and global decision-making processes to inspire disease prevention and to promote a toxic-free, low-carbon, fair and healthy future.

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