

Brussels 16th of December, 2022

A call for more ambitious actions towards healthy air in Europe

We urge the European Union to align the newly proposed limit values with the WHO 2021 Air Quality Guidelines by 2030. Specifically, we call for limit values of 5 and 10 $\mu\text{g}/\text{m}^3$ for annual $\text{PM}_{2.5}$ and NO_2 , respectively, and adding a limit value for the long-term ozone concentration. To combat air pollution-health inequalities, we argue that average exposure reduction obligations should be based on smaller geographical areas and include all available monitors, including areas with high exposures. We caution to be wary of the deduction of “natural” source contributions, as these to a large extent are driven by manmade climate change.

Dear Minister,

Air pollution is the leading environmental cause of health damages in Europe, contributing to morbidity and mortality especially from cardio-metabolic and respiratory diseases. The current air quality legislation in Europe, the Ambient Air Quality Directive (AAQD) from 2008, set limit values for the annual mean of the air pollutants $\text{PM}_{2.5}$ and NO_2 to 25 and 40 $\mu\text{g}/\text{m}^3$, respectively. These limit values have been strongly criticized for being woefully insufficient to protect EU citizens from the adverse health effects of air pollution and protect EU economies from costs related to health care and premature death.

The WHO released the new Air Quality Guidelines in September 2021, based on a comprehensive synthesis of the scientific evidence on health effects of air pollution (WHO 2021). They recommend that annual mean concentrations of $\text{PM}_{2.5}$ and NO_2 should not exceed 5 $\mu\text{g}/\text{m}^3$ and 10 $\mu\text{g}/\text{m}^3$, respectively, demonstrating that serious health effects occur above these values. The health community has advocated for the adoption of the new WHO Air Quality Guidelines in the EU legislation, with statements from the European Respiratory Society (Andersen et al. 2021), and from more than 140 medical, public health, and scientific societies and patient organizations (Hoffmann et al. 2021).

The air pollution-related disease burden among Europeans remains unacceptably high. At least 300.000 premature deaths occur in the EU every year, due to pollution with $\text{PM}_{2.5}$, NO_2 and Ozone (EEA 2022, <https://www.eea.europa.eu/publications/air-quality-in-europe-2022>). In addition, every year millions of new cases of asthma and bronchitis in children, and of major cardiovascular diseases, stroke, diabetes, COPD, pneumonia and lung cancer in adults occur due to air pollution (<https://www.swisstph.ch/en/projects/ludok/healtheffects>). Finally, exacerbations of chronic

disease in patients occur, leading to symptoms, medication use, sick days, and hospitalizations. All these factors cause a large financial burden on society.

A clear path towards complete alignment with the WHO 2021 Air Quality Guidelines is missing

The European Commission published a proposal to revise the AAQD on October 26, 2022, as part of the Zero Pollution package within the EU Green Deal. The proposed new annual limit values are 10 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ and 20 $\mu\text{g}/\text{m}^3$ for NO_2 across the EU, to be met by 2030. While these proposed limit values are stricter than the current ones, and will provide important benefits to public health, they are still higher by a factor of two compared to the WHO 2021 Air Quality Guidelines aimed at protecting health. Moreover, the proposal only provides target values for ozone, instead of legally-binding limit values. The 2019 Fitness Check clearly documented that target values are ineffective instruments for achieving healthy air quality (European Commission 2019). In contrast to the EU, limit values for ozone are part of the US National Ambient Air Quality Standards. We, therefore, call for more ambition and a clear path in the AAQD towards complete alignment with WHO 2021 Air Quality Guidelines for $\text{PM}_{2.5}$, NO_2 and ozone by 2030.

Postponements in achieving compliance lead to a high burden of disease

The proposal contains ambiguities that would make it possible for Member States to postpone compliance with the limit values well beyond 2035, depriving people of the ability to obtain legal protection of their right to breathe healthy air. If adopted in this form, the burden of disease from air pollution exposure in Europe will remain unacceptably high. Postponing to reach 10 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ and 20 $\mu\text{g}/\text{m}^3$ for NO_2 until after 2030 is not acceptable, when the severe impacts on health and health inequalities are so clear and will add up over time.

Health benefits outweigh by far the implementation costs of air quality actions

According to the underlying Impact Assessment,¹ the benefits of achieving limit values in line with current WHO guidelines largely surpass the costs of implementation of clean air technologies (the estimated ratio of benefits to costs are between 6:1 and 18:1). The benefits of aligning with the WHO guidelines amount to more than EUR 38 billion, and the corresponding mitigation costs are estimated at EUR 7 billion in 2030 (annually, for the entire EU) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD%3A2022%3A0345%3AFIN>). The true net effect is even more favourable than indicated, because the benefits in the Impact Assessment are substantially underestimated due

¹ The supporting Health Impact Assessment estimates expected air pollutant concentrations and quantifies resulting disease burden, health-related costs and implementation costs for various policy options.

to conservative estimates on the air pollution-related health burden on society; an issue that was also acknowledged by the European Commission.

Many potential interventions are missing from the feasibility study

The attainability of reaching lower levels of pollution throughout Europe is difficult to grasp in the feasibility study of the Impact Assessment. The maximal technically feasible reduction scenario (MTFR) only includes technical interventions. Many further interventions listed in the proposal are not evaluated and not included in the feasibility study, such as implementation of Low Emission Zones, creation of low-traffic neighbourhoods, accelerated modal shifts in transportation from fossil fuel powered vehicles to active modes such as walking and cycling, and lifestyle changes such as adopting diets with a low pollution footprint.

Need to combat air pollution-health inequalities

We raise concerns that the currently proposed average exposure reduction obligations² for long-term PM_{2.5} and NO₂ will not adequately protect socially disadvantaged people and thereby might even increase air pollution-health inequalities. Only urban background monitors are currently proposed to be used for calculating the average exposure and its reductions. Pollution hotspots, for example along busy roads or close to industries, are not included in the average exposure reduction obligations. It has been long known that in many settings, disadvantaged communities reside in the vicinity of roads, transportation corridors and industries and therefore are disproportionately exposed to air pollution; such communities may also be more susceptible to air pollution owing to other underlying disparities. With the proposed average exposure reduction obligation, there is a high likelihood that socially disadvantaged populations will be left behind, and disparities in air pollution and health might increase.

Furthermore, the average exposure is calculated at the regional level (NUTS1 areas). NUTS1 is a large area, e.g. there are only 16 NUTS1 areas in Germany and only 14 in France. Those divisions do not correspond with administrative boundaries in every member state. Hence, there are ambiguities as to which authorities will take responsibility for meeting the average exposure reduction obligations.

We stress that air quality limit values are the best instrument to ensure the protection of everyone's right to breathe healthy air and to leave no one behind. Hence, average exposure reduction obligations should only be a complementary instrument to ensure continued efforts once limit values are achieved and be based on the use of all available monitors, including areas with high air

² The average exposure reduction obligations are percentage decreases of the average level determined on the basis of measurements at urban background locations throughout the territory of a Member State territorial unit at NUTS 1 level as described in Regulation (EC) No 1059/2003, or, if there is no urban area located in that territorial unit, at rural background locations.

pollution concentrations. Moreover, the average exposure reduction obligations should be based on the smaller administrative zones.

Be wary of the deduction of “natural” source contributions

Similar to the current AAQD, deductions of “natural” source contributions, including wildfires and resuspended or transported dust particles (e.g. Saharan dust) to exceedances of limit values or exposure reduction obligations, are allowed. Scientific evidence demonstrates that air pollution from natural sources is also harmful to human health. We urge extreme caution and request additional guidance regarding this deduction, particularly given that their contribution will increase due to the anthropogenic climate crisis.

Conclusion

We urge the European Union to align the newly proposed limit values with the WHO 2021 Air Quality Guidelines by 2030. Specifically, we call for limit values of 5 and 10 $\mu\text{g}/\text{m}^3$ for annual $\text{PM}_{2.5}$ and NO_2 , respectively, and adding a limit value for the long-term ozone concentration. To combat air pollution-health inequalities, we argue that average exposure reduction obligations should be based on smaller geographical areas and include all available monitors, including areas with high exposures. We caution to be wary of the deduction of “natural” source contributions, as these to a large extent are driven by manmade climate change.

We thank you in advance for your support,

With kind regards,

The European Respiratory Society and the International Society for Environmental Epidemiology

Who we are

ERS is one of the leading medical organisations in the respiratory field, with a membership spanning over 160 countries. It is one of the largest respiratory scientific societies worldwide. ERS prioritises science, education and advocacy in order to promote lung health, alleviate suffering from disease and drive standards for respiratory medicine globally.

ISEE is the largest scientific association in environmental epidemiology that impacts research, training and policy worldwide. ISEE's mission is to foster epidemiological studies on the effects of environmental exposures in people, stimulate communication between health professionals, promote methodological advances, and strengthen environmental health policy.

References

Andersen ZJ, Gehring U, Matteis SD, Melen E, Vicedo-Cabrera AM, Katsouyanni K, et al. Clean air for healthy lungs – an urgent call to action: European Respiratory Society position on the launch of the WHO 2021 Air Quality Guidelines. *European Respiratory Journal*. 2021 Dec 1;58(6).

European Commission. Fitness check of the Ambient Air Quality Directives. Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air and Directive 2008/50/EC on ambient air quality and cleaner air for Europe. 2019. (SWD). Report No.: 427 final.

Hoffmann B, Boogaard H, de Nazelle A, Andersen ZJ, Abramson M, Brauer M, et al. WHO Air Quality Guidelines 2021–Aiming for Healthier Air for all: A Joint Statement by Medical, Public Health, Scientific Societies and Patient Representative Organisations. *Int J Public Health*. 2021.

World Health Organization. WHO global air quality guidelines: particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide [Internet]. Geneva: World Health Organization; 2021.