

Who breathes easier?

The Impact of Emission Standards on Health
and the Cost of Inaction from Euro 7



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The European Public Health Alliance is advocating for a timely, stringent, health and equity-focused implementation of the Euro 7 regulation combined with accessible and affordable clean transport solutions.

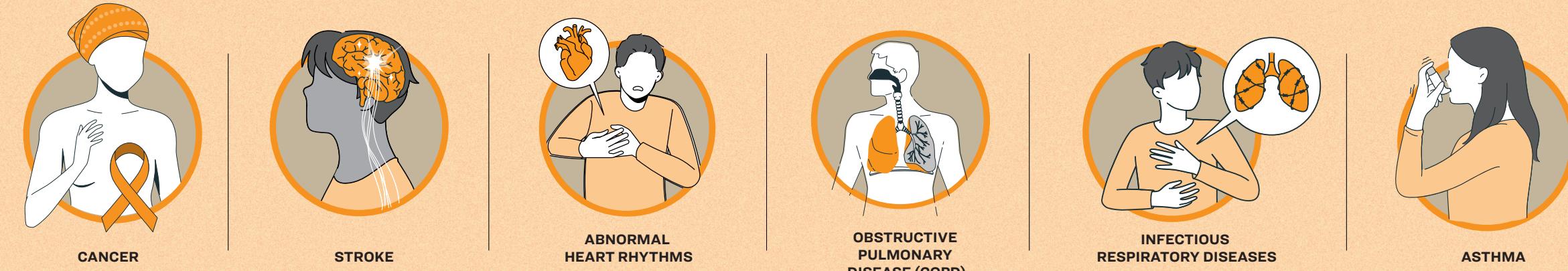
Key Messages:

The EU's emissions reduction strategy for cars disappointingly misses the chance to update Europe's outdated vehicle emissions legislation.

- This is despite air pollution causing hundreds of thousands of premature deaths annually in the EU and impacting all individuals. A problem requiring urgent and rapid action.
- Whilst traffic's air pollution affects all Europeans, disparities in impacts are increasing. Greater health, social, and economic burdens are being felt by certain populations, especially the poor as well as by some in specific cities and Member States.
- The implementation of a stringent regulation, combined with improving the accessibility and affordability of clean transport, would have reduced these disparities and would improve the health and well-being of all Europeans.
- Following an agreement between the Member States and the European Parliament proposals to improve the regulations were watered down. This casts doubt on the EU's commitment to the 2021 World Health Organization Air Quality Guidelines as it presents greater challenges for Member States to meet them.
- Investing to comply with the WHO guidelines by 2030 is significantly economically beneficial, costing 7 billion per year, as compared to the annual 45 billion societal cost of inaction.
- Taking stronger action on traffic pollution will also have benefits for other environmental and health problems - most notably those of climate emissions and of traffic noise.
- Ultimately cities, Member States and regions must collaboratively adopt ambitious measures to reduce internal combustion engines, safeguarding public health across Europe.



Strong European Union and national policy and implementation can curb this and significantly lower the health burden



Air pollution stands as the most significant environmental risk that Europeans face, causing hundreds of thousands of premature deaths annually in the EU (EEA, 2024b).

Air pollution, as an invisible killer and an involuntary risk, impacts all individuals, but disproportionately harms the most vulnerable and marginalised, including people with co-morbidities, children, the elderly, pregnant women, and people with a lower socioeconomic status. Motorised road transport is a very large contributor to air pollution in Europe and a key source of the EU's greenhouse gas emissions, accounting for 77% of transport-related emissions in 2020 (EEA, 2023b). Strong European Union and national policy implementation can curb this and significantly lower the health burden from respiratory conditions such as chronic obstructive pulmonary disease (COPD), asthma, heart disease, strokes, cancer, as well as infectious respiratory diseases.

The Euro 7 regulation sets requirements for both light and heavy-duty vehicles in a single act for all new vehicles sold in the EU, with the aim of setting emission limits and minimum durability requirements. The EU's emissions reduction strategy for cars disappointingly misses the chance to update Europe's outdated vehicle emissions legislation. Although lawmakers agreed to set brake particles emissions limits (PM10) for cars and vans (3mg/km for pure electric vehicles; 7mg/km for most internal combustion engine (ICE), hybrid electric and fuel cell vehicles and 11mg/km for large ICE vans) and on setting to count smaller particles on car tailpipe emissions compared to Euro 6 (European Parliament, 2023), the notable lack of ambition to reduce car tailpipe emissions compounded with a delayed implementation schedule will have strong repercussions on the health, social, well-being and economic burden of individuals, cities and Member States. Meanwhile, the disparities in health outcomes related to poor air quality across regions and populations are becoming markedly wider — a trend expected to be exacerbated with climate change (The Lancet, 2023). **The implementation of a stringent Euro 7 Emission Standards regulation combined with improving the accessibility and affordability of clean transport would have been the bridge between these disparities and improve the health of all Europeans.**

The current state of play: Undermining the EU's pledge to safeguarding public health

In [November 2022](#), the European Commission presented a legislative proposal for the Euro 7 standard, aiming to consolidate and simplify the previously distinct emissions regulations for cars, vans, trucks and buses. This aligned with the European Green Deal's zero-pollution ambition by setting stricter emissions criteria from tailpipes and non-tailpipe pollutants such as brake dust, tyre wear microplastics, and dust resuspension from road abrasion, as applicable to all vehicles including electric ones. Despite its initial ambition, significant alterations to the Commission's more comprehensive standards were released on [December 18th](#), following a provisional agreement reached between the European Parliament and Council. This agreement notably watered down the original proposal, particularly by maintaining exhaust emissions limits and test conditions for passenger cars and vans at the existing Euro 6 levels.

The low ambition of the Euro 7 emission standards severely undermines the EU's commitment to safeguarding the health of Europeans, including in complementing the Ambient Air Quality Directives (AAQD) and meeting the goal of becoming the first climate-neutral continent by 2050. Acknowledging the critical impact of vehicle emissions on public health and the pressing need for action, this not only **casts doubt on the EU's commitment to adhering to the 2021 World Health Organization Air Quality Guidelines but also poses greater challenges for Member States to meet them.**

What are the costs of inaction?

Looking specifically at the **lack of reduction in tailpipe emissions for cars and vans**, unchanged pollution limits and testing conditions, it is clear that Euro 7 cars will not be any cleaner than the Euro 6 cars on European roads today. The health and economic costs of this inaction are stark, given that 97% of the urban population in the region is exposed to air deemed unhealthy, with fine particulate matter contributing to an alarming 238,000 premature deaths a year in the EU (EEA, 2022). Additionally, this represents a missed opportunity for substantial economic benefits.

Air pollution is already posing huge costs to Europe's economies, which amount to 4.6% of its gross domestic product (GDP) (World Bank, 2022). The European Commission (EC) estimates that air pollution costs the EU €500 billion EUR every year, from air pollution-related premature deaths and health care costs, in terms of doctor visits, hospitalisations, medication costs, sick days, etc. (EC, 2022). Employers alone lose €8 billion EUR each year due to lost workdays. Damage to crops and forests amounts to €30 billion EUR lost each year (ERS, 2023).

In fact, the EC Cost Benefit Analysis showed clearly that **the cost of cleaning up the air and bringing PM2.5 limits down** to 5 $\mu\text{g}/\text{m}^3$ (full alignment with WHO guidelines) by 2030 of around €7 billion annually **is much lower than the cost of inaction** of €45 billion (Table 8, EC, 2022). Indeed, the most significant net benefit for the economies in Europe comes with full alignment with WHO 2021 AQGs in 2030, at around 38 billion EUR (Table 8, EC, 2022). As the health care systems around Europe are struggling with increasing visits and costs related to ageing and multi-morbidities from non-communicable diseases (NCDs), saving costs by preventing air pollution related NCDs and enhancing healthy ageing, is an opportunity that must not be missed.

Inaction also imposes an **economic burden at the individual level**, by opening the door to potential greenwashing. This involves Euro 6 vehicles being marketed as 'clean' Euro 7 models, despite no real advancements in reducing tailpipe emissions. Such misrepresentation risks misleading consumers into accepting higher prices for Euro 7 cars, despite carmakers not having to invest to reduce tailpipe pollution.



The consequences of delayed action are evident in the postponed Euro 7 implementation schedule. Originally set for July 2025 for light vehicles (cars and vans) and 2027 for heavy vehicles (trucks and buses), the enforcement dates have been pushed back to 2027 and 2029, respectively. Each year of postponement in implementation has been placed at roughly 900 additional premature deaths (ICCT, 2023). This lack of timely action carries significant implications when also considering that around one million additional polluting cars are placed on EU's roads every month, and they will remain for decades to come (EPHA, 2023b).

The standards also **overlook the potential of existing and cost-effective cleaner technologies**, which could significantly reduce pollutant emissions, especially nitrogen

oxide (NOx) levels (Ragon, et al. 2021). Nitrogen oxide emissions from diesel vehicles are particularly harmful to health and the environment, contributing to the creation of particulate matter (PM2.5) and ozone at ground level (Ragon, et al. 2021). Road transport stands as the largest contributor to NOx emissions (EEA, 2024a). A scientifically grounded standard could have reduced NO₂ air pollution in urban areas by up to 25% by 2025, preventing thousands of premature deaths due to toxic air (T&E, 2023). Additionally, according to a study, the adoption of the Euro 7 proposal by the Commission could have prevented approximately 1 million tonnes of NOx emissions by 2050, avoiding more than 7,200 premature deaths (ICCT, 2023).

The EU plan for reducing air pollutant emissions from cars and vans also **severely overlooks the vast potential for public health co-benefits**. This includes the intersection between air quality, climate change and noise pollution. Noise pollution is the second most significant environmental health risk that Europeans face (EC, 2023). The health burden has been estimated to be at least 1 million healthy years lost in Western Europe each year, the bulk of which is from road traffic (World Health Organization, 2018). Moving away from fossil fuel dependence and combustion-based transport stands to positively impact health equity, as marginalised and vulnerable populations have been found to suffer higher exposure to noise pollution in Europe (EPHA, 2023a).



The uneven health burden across regions and populations

One of the most overlooked aspects of the impact of air pollution on health, is that negative social, health and economic effects are unfairly distributed across Europe.

These disparities are compounded by factors such as socioeconomic status and access to healthcare, making marginalised and vulnerable populations particularly exposed.

It is clear that there are marked disparities observed **between Eastern and Western regions**. For instance, two-thirds of the preventable health burden linked to exposure to PM2.5 affects poorer countries in Eastern Europe (Malmqvist, et al., 2024). The primary sources of these emissions stem from coal-based energy production, outdated industrial sectors, wood and coal use for household cooking and heating, as well as an old vehicle fleet. This latter point is illustrated by a very large market of second-hand cars in Eastern and Southern European countries. In 2021, cars and vans across the EU had an average age of 12.4 years, which is already beyond the standard limit of 10 years, and in Eastern and Southern European countries vehicle fleets were on average around 14-16 years old (ACEA, 2023). This trend leads to the displacement of air pollution from wealthier to poorer regions, highlighting a critical environmental justice issue across Europe.

These **geographical injustices can also be observed at a city level**. For example, the provisional agreement proposes a new sub-category Euro 7G for internal combustion engines with geo-fencing technologies. When an internal combustion engine is turned on after a period of zero-emissions driving, there is a large spike in pollution (T&E, 2022). This means that when driven outside of the geographic areas, with their engines turned on, the local air quality will be significantly and unequally affected.

The disparities between regions in Europe have been observed, but **disparities among population groups often receive little to no attention**. An emerging body of studies shows a concerning correlation between socioeconomic status and living in areas of poor environmental quality (Ganzleben and Kazmierczak, 2020). Specifically, this is often linked to location of housing near 'supersites' such as industrial areas, major transport roads or areas with high usage of fossil fuel heating. This affects the population's exposure to poor air quality, which can be worsened by insufficient access to healthcare, green spaces, and low health literacy. Other external factors such as the interplay between air pollution and heat, amplifies the risk of adverse health outcomes (EEA, 2023a). In fact, a 2022 US study showed that the risk of mortality related to PM2.5 and extreme heat exposure increased by 5.0% and 6.1% respectively, however, the combined risk increased by 21%, with the largest risk faced by people over 75 years of age (Rahman, et al., 2022). These findings have been consistent across different types of pollutants including ozone and nitrogen dioxide - results which are especially relevant in the context of Europe's changing climate and ageing population. The disparities and level of risk to individuals become even **more pronounced when considering pre-existing health conditions or those who are medically vulnerable**.



Next steps?

The EU ban on the sale of new internal combustion engine vehicles by 2035 is **lacking the urgency needed**, a trend echoed now in the Euro 7 regulation. The delay and the absence of improvements in tailpipe emissions for light vehicles fail to address the public health and climate burden caused by air pollution from road transport. Moving forward, a bold and stringent approach is needed to align with the Commission's recent declaration of a 90% CO₂ reduction target across the European economy by 2040.

There is a pressing need for **Member States to show commitment to the effective implementation** of the EU's zero pollution action plan, understanding that this is as crucial as the standards themselves. To bridge health and environmental injustices, clean transport solutions must be in line with the latest scientific recommendations and inclusive, making these both accessible and affordable. Sustainable urban mobility plans should therefore assess positive and negative health outcomes, ensuring the potential for significant co-benefits is realised and inequities are minimised. There is also a need to increase the data collection on the distribution of the impacts of air pollution based on inequities across population groups; this data must also be made readily accessible as a key to help individuals better assess their level of risk. Ultimately, this means that cities, Member States and regions must **collaboratively adopt ambitious measures to reduce internal combustion engines, safeguarding public health across Europe**.

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About EPHA's work on global public health

EPHA's work on Global Public Health focuses on the leading transboundary health concerns of Europe: antimicrobial resistance (AMR), air pollution, climate change, Planetary Health degradation and Global Health strategy. Each of these concerns poses an unprecedented risk to public health, environmental health, health systems and society. Our work therefore strives to ensure that these concerns remains high on the political agenda, with health considered in all policies.

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