



European
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Air quality in Europe 2022

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Air pollution is the largest environmental health risk in Europe and significantly impacts the health of the European population, particularly in urban areas. While emissions of key air pollutants and their concentrations in ambient air have fallen significantly over the past two decades in Europe, air quality remains poor in many areas.

Key messages

- ➔ Air pollution is a major health concern for Europeans. In 2020 in the European Union, 96% of the urban population was exposed to levels of fine particulate matter above the health-based guideline level set by the World Health Organization.
- ➔ In 2020, exposure to concentrations of fine particulate matter above the 2021 World Health Organization guideline level resulted in 238,000 premature deaths in the EU-27. Air pollution also causes morbidity, whereby people live with disease — entailing both personal suffering and significant health care costs.
- ➔ The zero pollution action plan sets the target to reduce the number of premature deaths due to exposure to fine particulate matter by 55% by 2030, compared to 2005. In 2020, premature deaths attributed to exposure to fine particulate matter fell by 45% in the EU-27, compared to 2005.
- ➔ Further efforts will be needed to meet the zero pollution vision for 2050 of reducing air pollution to levels no longer considered harmful to health.
- ➔ The zero pollution action plan sets the 2030 target of a 25% reduction to the share of ecosystems impacted by air pollution, compared to 2005. In 2020, damaging levels of nitrogen deposition to ecosystems were exceeded in 75% of the total ecosystem area in the EU-27. This represents a fall of 12% since 2005.
- ➔ In 2020, emissions of all key air pollutants in the EU-27 continued to decline — maintaining the trend seen since 2005 and showing a decoupling from the increasing gross domestic production over the same period.

The 'Air quality in Europe' [report series](#) from the European Environment Agency (EEA) presents annual assessments of air pollutant emissions and concentrations in ambient air across Europe, as well as

associated impacts on health and the environment. The annual assessments are primarily based on official data reported to the EEA by European countries.

In 2021, the World Health Organization (WHO) published new [air quality guidelines](#) following a systematic review of the latest scientific evidence demonstrating how air pollution damages human health. The European Union (EU) has also set [standards for key air pollutants](#) in the [ambient air quality directives](#). In the [European Green Deal](#), the European Commission committed to further improving air quality and to aligning EU air quality standards more closely with the WHO recommendations. This commitment was echoed in the [zero pollution action plan](#), which set a vision for 2050 to reduce air, water and soil pollution to levels no longer considered harmful to health and natural ecosystems. In addition, the zero pollution action plan introduced targets for 2030, two of which focus on air and aim to:

- reduce the health impacts of air pollution (premature deaths) by more than 55%, compared to 2005;
- reduce the share of EU ecosystems where air pollution threatens biodiversity by 25%, compared to 2005.

Stricter air quality standards would also contribute to the objectives of [Europe's Beating Cancer Plan](#). Air pollution is a known cause of cancer in Europe; in particular, lung cancer ([EEA, 2022](#)).

European Commission proposes new rules for cleaner air

In October 2022, the European Commission published a [proposal for a revision of the Ambient Air Quality Directive](#). Key measures are listed below.

- Stricter thresholds for pollution, more closely aligned with new limits set by the World Health Organization.
- Enhancing the right to clean air, improved access to justice.
- Current law does not include provisions for citizens to claim compensation for health damage due to air pollution. The new rules will bring more effective penalties and compensation possibilities for violating air quality rules.
- Strengthened rules for air quality monitoring to support preventive action and targeted measures.
- Requirements to improve air quality modelling, especially if and where air quality is poor.
- Better public information.

The above measures are aligned with other legislative proposals, such as the revision of the [Industrial Emissions Directive](#) and recent proposals on [Euro 7 emission standards](#) for road vehicles, which will support the achievement of stricter air quality standards.

This report analyses the status of concentrations of pollutants in ambient air in 2020 and 2021 – presented by pollutant and related to both EU air quality standards and the 2021 WHO guideline levels. It presents the health impacts of exposure to key air pollutants, both in terms of mortality (for 2020) and morbidity (for 2019), and assesses progress towards the health-related objectives of the EU's zero pollution action plan. The impact of air pollution on ecosystems is also considered. This includes an assessment of progress towards the zero pollution action plan target to reduce the share of ecosystems damaged by air pollution, as well as a review of the impact of ozone on agricultural production. Finally, it presents the status of emissions of key air pollutants regulated in the EU and assesses emissions trends over the period 2005 to 2020.

This report is based on a range of background material produced by the [European Topic Centre on human health and the environment](#) (ETC/HE). References and links to online reports are provided in each chapter.

Identifiers

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