

# Press release



## How has air quality improved in Paris between 2012 and 2022?

**[August, 27, 2025]** Airparif is publishing its latest study today, which provides a quantitative assessment of the actions that have contributed to improvements in air quality and reductions in carbon dioxide (CO<sub>2</sub>) emissions (the main greenhouse gas) in Paris between 2012 and 2022. Carried out in partnership with the City of Paris, this study is set in the context of the forthcoming strengthening of regulations by 2030 and the tenth anniversary of the Paris Agreement on climate change. It follows on from the previous assessment covering the period 2002–2012.

Over recent decades, air quality in Paris has improved significantly. Between 2012 and 2022, three main factors explain this progress: the modernisation of the vehicle fleet with more recent, less polluting vehicles; measures designed to reduce road traffic; and policies to cut pollution sources other than traffic (such as heating and industry).

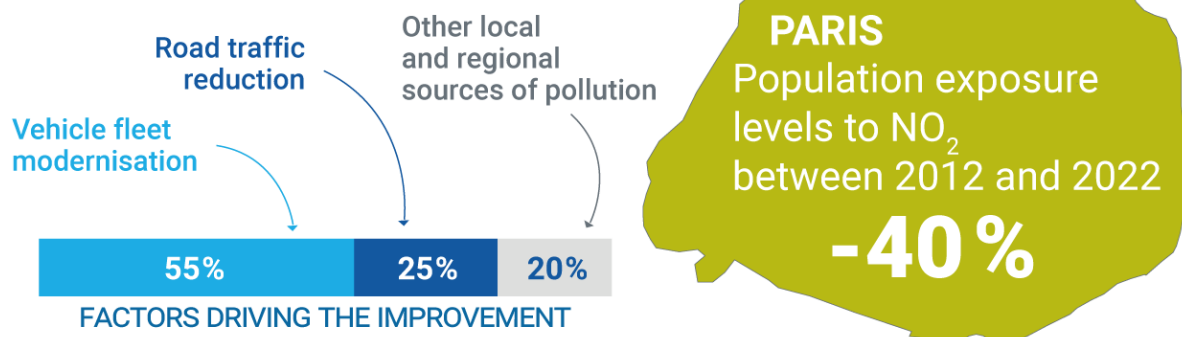
These actions stem from environmental policies implemented at different levels: local, national, and European. They have resulted in an average reduction in Parisians' exposure to pollution of 40% for nitrogen dioxide (NO<sub>2</sub>) and 28% for fine particles (PM<sub>2.5</sub>). Carbon dioxide emissions from road traffic have also fallen by 35%.

### Understanding the decline in air pollutant concentrations in Paris

The improvement in air quality is the result of the implementation of public policies and regulations at multiple levels. The modernisation of the vehicle fleet is explained both by the marketing of new, less polluting vehicles under the Euro standards, and by measures that have encouraged fleet renewal, most notably the Low Emission Zone introduced in Paris in 2017. The reduction in road traffic, for its part, forms part of a set of measures, largely initiated by the City of Paris, aimed at limiting the use of private cars and promoting alternatives, for example through the deployment of dedicated infrastructure such as cycle lanes, reserved bus lanes, and the reduction of parking spaces.

Between 2012 and 2022, an average decrease of 40% in nitrogen dioxide (NO<sub>2</sub>) levels to which Parisians are exposed has been observed. Half of this reduction is attributable to the modernisation of the vehicle fleet, a quarter to the decline in road traffic, and the remaining quarter to measures targeting other sources of pollution in Paris and beyond (residential and tertiary heating, industry, energy production, etc.).

## EVOLUTION OF POPULATION EXPOSURE TO NITROGEN DIOXIDE (NO<sub>2</sub>) IN PARIS BETWEEN 2012 AND 2022



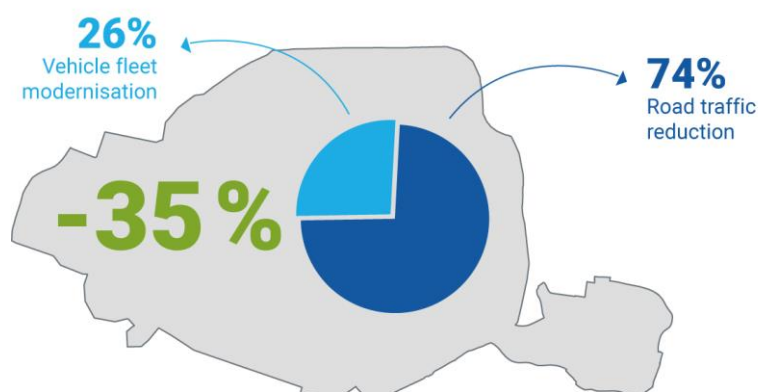
For exposure to fine particles (PM<sub>2.5</sub>), the decline between 2012 and 2022 stands at 28% for Parisians. Owing to the multiplicity of particle sources, the breakdown of contributions to this reduction differs from the one observed for NO<sub>2</sub>. Among the local and regional factors studied, the transport sector remains the main contributor, with 39% attributable to the modernisation of the vehicle fleet and 17% to the decrease in traffic volume. Public policies implemented to improve air quality in other activity sectors account for the remaining 44% of this reduction.

As an additional co-benefit, the study also highlights a slightly greater improvement in air quality for residents living in the most polluted areas, close to major roadways (a 45% reduction in NO<sub>2</sub> and a 31% reduction in PM<sub>2.5</sub>).

## Changes in road traffic leading to a significant reduction in carbon dioxide emissions

Beyond air pollutants, the measures implemented have also contributed to tackling climate change. Carbon dioxide (CO<sub>2</sub>) emissions linked to road traffic fell by 35% between 2012 and 2022. This reduction is mainly attributable to the decrease in traffic, which accounts for three-quarters of the decline, while the modernisation of the vehicle fleet contributes the remaining quarter.

## EVOLUTION OF CARBON DIOXIDE (CO<sub>2</sub>) EMISSIONS FROM ROAD TRAFFIC IN PARIS BETWEEN 2012 AND 2022



The trend in greenhouse gas emissions from road traffic, which are directly linked to fuel consumption, is less marked than the trend observed for air pollutants (NO<sub>2</sub>, particles, etc.), whose decline has been accelerated by technological improvements. Euro standards, in fact, only target emissions of air pollutants. Reductions in carbon dioxide could have been greater through the use of lighter new vehicles.

## Towards stricter standards to protect public health

The new European directive on ambient air entails lowering regulatory limit values, bringing them closer to the thresholds recommended by the World Health Organization (WHO), though not fully aligning with them, in order to take account of advances in knowledge about the health impacts of air pollution and to continue the improvements already underway. While this new Airparif study confirms the positive and tangible impact of public policies on air quality and climate change, it also provides essential insights to help guide future actions aimed at sustaining these improvements over the long term.

Although the situation has clearly improved, with measurable health benefits in terms of life expectancy and chronic disease, the challenges relating to air quality and health remain substantial in Paris: in 2019, air pollution was responsible for nearly 1,800 premature deaths per year, as well as the onset and worsening of chronic respiratory and cardiovascular diseases. A study by the Île-de-France Regional Health Observatory and Airparif, published in January 2025<sup>1</sup>, showed that the occurrence of these diseases represented a cost of €2.5 billion in 2024 for particulate matter. Regulatory limit values to be met by 2030 would already have been exceeded in 2024 for 70% of Parisians with respect to NO<sub>2</sub>, while WHO recommendations are currently exceeded across the whole of Paris and the wider Paris Region.

As for ultrafine particles (the smallest particles present in the air) they represent a current and future health challenge, particularly for populations living close to major roads; their monitoring is required by both the new directive and WHO recommendations. Nevertheless, this study demonstrates that public policies on air quality have a positive and measurable impact, delivering additional co-benefits for both health and climate.

**The full report** : Airparif, Amélioration de la qualité de l'air à Paris : les facteurs explicatifs, August 2025 [online in French]. Available at : <https://www.airparif.fr/etudes/2025/amelioration-de-la-qualite-de-lair-paris-les-facteurs-explicatifs>

**The report synthesis** : Airparif, How has air quality improved in Paris between 2012 and 2022?, August 2025 [online] : Available at : <https://www.airparif.fr/etudes/2025/comment-la-qualite-de-lair-sest-elle-amelioree-paris-entre-2012-et-2022>

**Press contact** : [communication@airparif.fr](mailto:communication@airparif.fr)

---

<sup>1</sup> **HOST, Sabine et al.** Maladies chroniques attribuables à la pollution de l'air en Île-de-France : bénéfices sanitaires et économiques d'une amélioration de la qualité de l'air [online in French]. Île-de-France Regional Health Observatory [www.airparif.fr/sites/default/files/document\\_publication/ORS\\_RAPPORT\\_maladies\\_chroniques\\_pollution\\_air.pdf](http://www.airparif.fr/sites/default/files/document_publication/ORS_RAPPORT_maladies_chroniques_pollution_air.pdf)