

Press release

## **All EU and UK capital cities exceed NO<sub>2</sub> concentration levels in 2022 despite updated WHO guidelines**

HELSINKI, 16 February 2023 - On 14 February 2023, the [European Parliament voted to ban the sale of new petrol and diesel CO<sub>2</sub>-emitting cars as of 2035](#), making headway in the EU's "Fit for 55" package and the transition to climate neutrality by 2050. Urban areas across the EU and the UK are also increasingly establishing measures to reduce road traffic and create "green zones" in city centres. These measures, however, to date, have not succeeded in reducing the harmful nitrogen dioxide (NO<sub>2</sub>) emissions produced by fossil fuel burning vehicles and other emitting sources to levels recommended by the guidelines of the World Health Organization (WHO). The latest briefing from the Centre for Research on Energy and Clean Air (CREA) reveals the consequences of not aligning emissions regulations with the [WHO Global air quality guidelines \(AQG\)](#) on the health of resident populations.

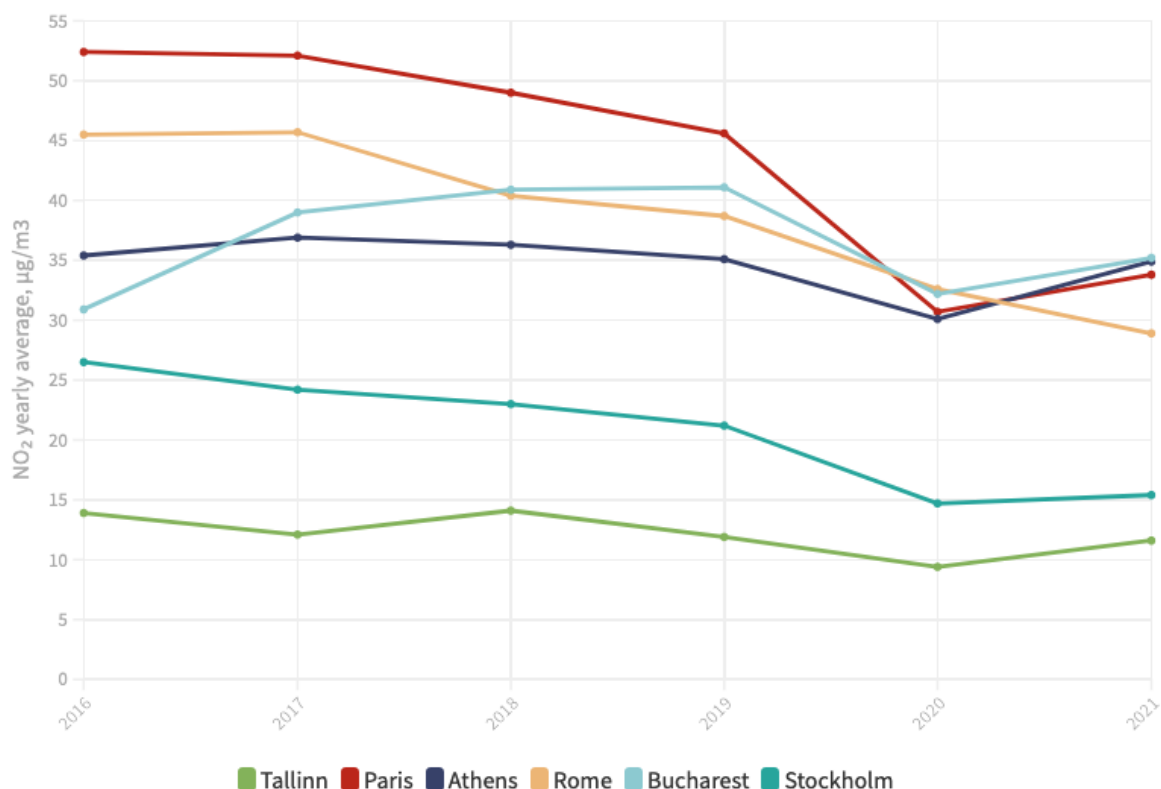
In 2021, the World Health Organization updated the WHO Global air quality guidelines (AQG) to align them with the latest research on emissions, in particular nitrogen dioxide (NO<sub>2</sub>) emissions that are released by fossil fuel burning vehicles and that have a much more severe impact on health than previously thought.

Road transportation was the largest source of [NO<sub>x</sub> emissions \(37%\)](#) in the EU in 2020, followed by agriculture (19%) and the manufacturing and extractive industry (15%). The sector represented [28% of all emissions of nitrogen oxides \(NO<sub>x</sub>\) emissions](#) in the UK in 2020, while other forms of transportation, including aviation, rail, and shipping, only accounted for 13%. The impact on public health of road transportation emissions is therefore greater as much of it occurs in urban areas where population density is high, which results in high levels of human exposure.

Currently, the EU and the UK are the only jurisdictions that have responded to the updated WHO guidelines by announcing some sort of explicit policy action. Yet, our research finds that across UK and EU capital cities, while emissions from transportation have decreased, concentrations of NO<sub>2</sub> continue to exceed the updated WHO guidelines and the annual

mean NO<sub>2</sub> concentrations exceeded the WHO guideline value in all EU27 and UK capitals in 2022.

## NO<sub>2</sub> Yearly Average



NO<sub>2</sub> yearly averages in selected EU capital cities between 2016–2021. Source: data based on CREA's [air quality data portal](#).

According to the updated WHO recommendations, the NO<sub>2</sub> levels should not exceed an average of 25 µg/m<sup>3</sup> for 24 hours and 10 µg/m<sup>3</sup> for a year. However, these changes have not been updated and reflected in the Ambient Air Quality (AAQ) Directive (2008/50/EC) of the EU, or in the National Air Quality objectives of the UK. The guideline value for yearly average NO<sub>2</sub> concentrations in the EU and UK are 40 µg/m<sup>3</sup>, whereas the WHO health-based guideline value is 4 times lower (10 µg/m<sup>3</sup>).

*'This week, the European Parliament has approved the 2035 ban on sales of new fossil fuel cars. However, NO<sub>2</sub> concentration levels and the resulting health impacts in European cities remain too high. Lawmakers need to find more solutions to reduce transport-related emissions, and other highly emitting sources, such as power generation, need to be*

*addressed immediately, too*’, said Erika Uusivuori, Europe Analyst at CREA and co-author of the briefing.

The briefing finds that not aligning regulations with the WHO 2021 AQG translates into over 250,000 NO<sub>2</sub>-related deaths and 70,000 cases of asthma in children that could be avoided should the EU and the UK achieve the WHO 2021 AQG.

In light of the gravity of the implications on the health of resident populations exposed to NO<sub>2</sub> concentrations exceeding the WHO 2021 AQG, the Centre for Research on Energy and Clean Air (CREA) therefore suggests the following policy recommendations:

- the European Commission follow through on its commitment to adhere to the WHO Global air quality guidelines (AQG) when revising the Ambient Air Quality Directive;
- the European Union include stronger emission standards for stationary sources through the Industrial Emissions Directive (IED) revision;
- the UK follow suit in revisions of existing air quality policies;
- more ambitious targets be established for the uptake of electric vehicles and alternative fuels;
- the electric charging station network be expanded to cover all European roads; currently 70% of charging stations exist in only three countries;
- the upcoming Euro 7 emission standards be implemented as soon as possible, and reflect the criticisms made on measurement and leniency, especially regarding NO<sub>x</sub> emissions from diesel cars;
- air quality standards be more stringent to reflect that over 200,000 Europeans may be saved annually from NO<sub>2</sub>-related deaths by aligning European standards with the 2021 WHO Ambient Air Quality Guidelines.

-End-

## Contact

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## Note(s) to editors

CREA has published the following briefing related to the press release:

[energyandcleanair.org/publication/the-toll-of-fossil-fuel-air-pollution-a-case-for-clean-transportation/](https://energyandcleanair.org/publication/the-toll-of-fossil-fuel-air-pollution-a-case-for-clean-transportation/)

All CREA publications can be found here:

[energyandcleanair.org/publications](https://energyandcleanair.org/publications)

## About CREA

The Centre for Research on Energy and Clean Air (CREA) is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions to air pollution. CREA was founded in December 2019 in Helsinki and has staff in several Asian and European countries. The organisation's work is funded through philanthropic grants and revenue from commissioned research.

[www.energyandcleanair.org](https://www.energyandcleanair.org)