



Pollution Levels Inside Cars Up To Eighteen Times Higher Than Those Outside, Says Greenpeace Report

LONDON September 9, 1992 (GP) -- A report commissioned by Greenpeace from Earth Resources Research shows that in many traffic conditions pollution levels inside cars can be up to eighteen times higher [\[1\]](#) than those in "ambient" air outside.

(The term "ambient air" in this study refers to the air tested simultaneously at fixed monitoring stations located 50 and 100 metres from a roadside.)

The report shows that cars do not provide protection to drivers and passengers from pollution from traffic. Drivers can be exposed to even higher levels of health-damaging pollutants than those experienced by cyclists and pedestrians [\[2\]](#).

The research is compiled from studies in Britain, Europe and the United States which compare levels of traffic pollutants within cars to those in "ambient" air at a fixed point 50 - 100m away from the vehicle and road.

Elevated pollution levels were found in both slow moving urban traffic and during motorway journeys [\[3\]](#). Slower speeds, congested traffic, vehicle age and use of the heater can increase concentrations of pollutants within vehicles [\[4\]](#).

"There is no safe haven from traffic pollution," said Charlie Kronick, Greenpeace Transport Campaigner. "Winding up the window won't help: drivers cannot simply shut themselves away from the effects of the pollution they create. The only real solution is to cut the number of cars on our roads."

The Greenpeace report examines levels of three main pollutants: volatile organic compounds (VOCs) -- including benzene, carbon monoxide and nitrogen dioxide.

The research shows that levels of nitrogen dioxide and carbon monoxide within cars can exceed WHO or EC recommended safety limits for "ambient" air [\[5\]](#). Carbon monoxide concentrations can reach levels up to 8 times higher than in the ambient air [\[6\]](#). Both pollutants are known to have detrimental effects on health.

Nitrogen dioxide (NO₂) can damage the smallest passages of the lungs and increase susceptibility to respiratory infection. NO₂ can trigger asthma attacks directly, or may make asthmatics more susceptible to other factors which may trigger attacks. Carbon monoxide (CO) is particularly dangerous for sufferers of ischaemic heart disease and pregnant women [\[7\]](#).

The World Health Organization (WHO) states that "no safe level for airborne benzene can be recommended as it is carcinogenic to humans and there is no known safe threshold level" [\[8\]](#). Research shows that the average exposure of drivers to benzene can be as much as eighteen times higher than that experienced in ambient air [\[9\]](#).

Greenpeace is accusing the UK Government of refusing to acknowledge the severity of the health threat posed by traffic pollutants. The Government is failing to take the necessary action to eliminate this problem which, as this report shows, affects car users as well as pedestrians and cyclists.

Increases in traffic as projected by the Government (up to 142% by 2025 [\[10\]](#)) will exacerbate the

situation. Recent data from the US, where the majority of vehicles now use catalytic converters, still shows high levels of pollution.

Last month a Greenpeace report "Gasping for Change" showed how 20 million people -- a third of the population of England -- are at risk from the health effects of ambient traffic pollution [11]. Greenpeace is undertaking further research to determine whether others now fall into those "at risk" groups.

The Exposure of Car Drivers and Passengers to Vehicle Emissions: Comparative Pollutant Levels Inside and Outside Vehicles. 2.50, Available from Public Information, Greenpeace UK, Canonbury Villas, London N1 2PN

References:

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- [2] Hickman, AJ, 1989, Personal Exposures to Carbon Monoxides and Oxides of Nitrogen, Research Report 206, Transport and Road Research Laboratory, Berkshire.
- [3] See reference [1](#).
- [4] Shikiya D, Liu C S, Kahn M I, Bargikowski W, and Juarros J, 1989, In Vehicle Air Toxics Characterisation Study in the South Coast Air Basin of California, Air and Waste Management Association, Pittsburgh, Pennsylvania.
- [5] See reference [2](#) and Chan C-C, Ozkaynak H, Spengler J D, and Sheldon L, 1991, Driver Exposure to Volatile Organic Compounds, CO, Ozone and NO2 Under Different Driving Conditions, Environmental Science and Technology vol 25, pp.964-72.
- [6] See reference [1](#).
- [7] Read C, 1991, Air Pollution and Child Health, Greenpeace, London.
- [8] WHO, 1987, Air Quality Guidelines for Europe, World Health Organisation Regional Office for Europe, Copenhagen.
- [9] See reference [1](#).
- [10] Department of Transport, 1989, National Road Traffic Forecasts (Great Britain) 1989, HMSO, London.
- [11] Populations at Risk from Ambient Air Pollution: A Report for Greenpeace UK, 1992, Greenpeace, London.
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