





In four U.S. cities, the Clean Air Task Force (CATF) has investigated and tracked with monitors the levels, during commutes by car, transit bus, commuter train, ferry and walking, of four main components of diesel exhaust: fine particles (PM2.5), ultrafine particles (PM<0.1), black carbon, and particulate polycyclic aromatic hydrocarbons (PAHs). Findings show that pollution levels inside cars, buses and trains were four to eight times greater than in the outside air. Solutions lie within the implementation of cleaner fuels and emission control technology such as diesel particulate filters (DFP).

**Original source:** C. G. Schneider and L. Bruce Hill, PhD (2007) «No Escape from Diesel Exhaust», Clean Air Task Force

**Source:** [http://www.catf.us/publications/reports/No\\_Escape\\_from\\_Diesel\\_Exhaust.pdf](http://www.catf.us/publications/reports/No_Escape_from_Diesel_Exhaust.pdf)

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### 3 Estimated Benefits of Reducing Particulate Matter (EN)

Researchers recently investigated the value that Italian citizens place on a human life as an attempt to quantify the benefits associated with risk-reduction measures in the area of air pollution and global warming. The projected rise of global temperature will presumably escalate the frequency and intensity of air pollution peaks, which increase the risk of vascular and respiratory disease in humans. The costs of risk reduction are based on regulation implementation, which consists of technological, regulatory and compliance costs, and the benefits are based on avoided deaths and diseases. Respondents to a survey for 800 city dwellers between the ages of 30 and 75 were asked how much they are willing and able to pay for reductions in the risk of dying from the aforementioned diseases. Based on the values obtained from the survey, researchers calculated the value of a statistical life (VSL), which is how much money society, is willing to pay to avoid the death of an unknown citizen, to be between 420-830 thousand Euros. According to the World Health Organisation, if the concentration of airborne particulate matter was reduced from 52.6µg/m<sup>3</sup> to 30µg/m<sup>3</sup>, 3,473 deaths would be avoided by people over 30 years old. Based on the calculated VSL, the benefits of such a particulate matter reduction would be between 2,600 and 5,500 million Euros per year.

**Original source:** Anna Alberini and Aline Chiabai (2007) « Urban environmental health and sensitive populations: How much are the Italians willing to pay to reduce their risk? », Regional Science and Urban Economics 37:239-258.

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**Source:** "Science for Environment Policy" 26-April-2007 Issue 62  
[http://ec.europa.eu/environment/integration/research/newsalert/themes\\_en.html](http://ec.europa.eu/environment/integration/research/newsalert/themes_en.html)

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### 4 High Levels of Ultrafine Particles in Canadian Ice Skating Arenas (EN)

Exhaust from the ice resurfacing machines in ice arenas releases dangerous particles into the air. As part of a CBS News investigation, the ultrafine particle levels of 42 ice arenas in Halifax, Sudbury, Winnipeg, Edmonton and Vancouver were tested by Kenneth Rundell of the human performance lab at Marywood University in Scranton, PA. 24 per cent of the arenas tested higher than 60,000 particles of pollution per cubic centimeter and 14 per cent higher than 100,000 particles per cubic centimeter. In addition to disturbing asthma and cardiovascular illnesses, levels this high can decrease lung capacity according to Rundell. Ice skating athletes are at highest risk due to frequent exposure and Rundell found that they had a higher prevalence of exercise induced asthma and chronically low lung function. An ideal, yet expensive solution is to replace existing ice resurfacing machines with ones powered by electricity, which would not release particles into the air and eliminate dependence on fossil fuels. Until these machines become more

