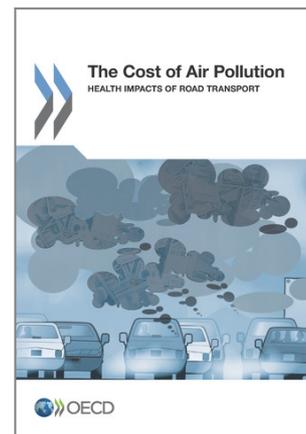


# OECD *Multilingual Summaries*

## The Cost of Air Pollution

### Health Impacts of Road Transport

Summary in English



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Outdoor air pollution kills more than three million people across the world every year, and causes health problems from asthma to heart disease for many more. This is costing OECD societies plus People's Republic of China and India an estimated USD 3.5 trillion dollars a year in terms of the value of lives lost and ill health, and the trend is rising. But how much of the cost of those deaths and health problems is due to pollution from cars, trucks and motorcycles on our roads? Initial evidence suggests that in OECD countries, road transport is likely responsible for about half the USD 1.7 trillion total.

Air pollution in OECD countries has fallen in recent years, helped by tighter emission controls on vehicles, but has increased in China and India as rapid growth in traffic has outpaced the adoption of tighter emission limits. The switch to more polluting diesel vehicles in many countries in part to combat climate change has also added to pollution effects, threatening to arrest the downward trend in emissions from road transport in OECD countries.

Over the five-year period from 2005 to 2010, there was an overall increase of about 4% in the number of premature deaths globally caused by outdoor air pollution – with an improvement in the OECD world being offset by a larger deterioration in the rest of the world.

These figures, based on new technologies for measuring pollution and improved analysis of health data, are far higher than those from previous studies of premature death and illness from air pollution. Calculating the economic cost of these health impacts, and how much is due to air pollution from road transport, requires estimating the value of lost lives or lost quality of life in the case of illness. There is a standard method for calculating the cost of lost life, but not for loss of health. Hence this study adds to the mortality cost a 10% margin for loss of health (morbidity), based on the best available evidence in recent studies.

It is now possible to give a better calculation of the health impacts of air pollution and of the associated economic cost. Available evidence and methodology suggest that about 50% of that cost in OECD countries is specifically attributable to road transport, although more work needs to be done to provide a robust calculation for the road transport share.

#### *Main findings*

- The number of deaths due to outdoor air pollution fell by about 4% in OECD countries between 2005 and 2010, while the number of years of life lost fell even further. But while 20 of the 34 OECD countries achieved progress, 14 did not.
- The number of deaths due to outdoor air pollution in China rose by about 5%, although years of life lost increased by only about 0.5%. China has arguably succeeded in slowing the increase in the effect of air pollution on health, since a reduction in exposure to pollution will have a greater effect on years of life lost than on the number of deaths.
- India registered an increase of about 12% in the number of deaths and about 3% in years of life lost. Although the number of deaths in India is only just over half the number in China, the trend in India is increasing faster.

- The cost of the health impact of outdoor air pollution in OECD countries, both deaths and illness, was about USD 1.7 trillion in 2010. Available evidence suggests that road transport accounts for about 50% of this cost, or close to USD 1 trillion.
- The best available estimate of the economic cost of the health impacts of outdoor air pollution in China and India combined is larger than the OECD total – about USD 1.4 trillion in China and about USD 0.5 trillion in India in 2010. There is insufficient evidence to estimate the share of road transport in these figures but even if it is less than half, it nonetheless represents a large burden.

### *Main recommendations*

- A defensible calculation of the economic cost of health impacts must be based on economic first principles. This means continuing the use of the standard method for calculating the cost of mortality – the Value of Statistical Life (VSL) as derived from individuals' valuation of their willingness to pay to reduce the risk of dying.
- Indicative estimates suggest that morbidity would add 10% to the mortality cost figures, but work is needed to complete a standard method of calculating morbidity costs in a manner consistent with the standard method for calculating mortality costs.
- A defensible calculation of the economic cost of the health impacts of air pollution must base itself on the new body of epidemiological evidence made possible by recent innovations in monitoring and modelling technology.
- A defensible calculation of the economic cost of the health impacts of air pollution from road transport must base itself on sector-specific evidence consistent with the new body of epidemiological evidence. This necessitates a renewal of the sector-specific evidence base. In the meanwhile, it is possible to provide indicative estimates only of road transport's share in the overall cost.
- Governments should maintain strong regulatory regimes, particularly strict vehicle standards. Given the size of the economic cost of the health effects of air pollution, the benefits of reducing that burden could easily outweigh the monetary cost of investments in more ambitious programmes to reduce pollution.
- Governments should also rethink their approach to appraising policy moves, such as the regulatory and tax settings that facilitated the shift to diesel vehicles. Importantly, there is also a need to ask how it is that the appraisal process has hitherto failed to secure the passage of a range of policy proposals for example in relation to public transport that could have reduced air pollution – and how to rectify this in future.

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