

FACT SHEET

# AIR QUALITY

Poor air quality is a contributory factor in the deaths of millions of people around the world. Air pollution has serious health impacts, including respiratory tract infection, heart disease, and lung cancer. Pollutants from motor vehicles

are a major contributory factor to outdoor air pollution. Most pollutants are linked to exhaust gases from internal combustion engines, particularly from diesel fuel, but fine particles can also be produced by tyre and brake wear.

## 1 3.7 MILLION DEATHS ARE ATTRIBUTABLE TO OUTDOOR AIR POLLUTION

The World Health Organisation (WHO) estimates that 3.7 million deaths globally were attributable to outdoor air pollution in 2012, with the vast majority occurring in low- and middle-income countries. Recent estimates

suggest that around 200,000 deaths a year are likely to be attributable to vehicle emissions. Without action, increased numbers of vehicles could lead to the number of deaths rising by 50% by 2030.

## 2 PARTICULATE MATTER (PM) IS ONE OF THE MOST HARMFUL POLLUTANTS IN VEHICLE EMISSIONS

The most harmful pollutants are fine particulate matter (PM), which penetrate deep into the lung passageways. PM consists of a complex mixture of solid and liquid particles of organic and inorganic substances suspended in the air. The major components are sulphate, nitrates, ammonia, sodium chloride, black carbon, mineral dust and water. Small particulate matter of 10 microns or

less in diameter is known as PM10, with concentrations of less than 2.5 microns known as PM2.5. Diesel particulates are known to be carcinogenic.

Vehicle emissions contain particulate matter and harmful gases such as nitrogen dioxide (NOx) which is toxic and an irritant and is associated with symptoms of bronchitis.

## 3 POOR AIR QUALITY IS ASSOCIATED WITH A RANGE OF HEALTH IMPACTS

Poor air quality has major health effects, such as stroke, heart disease, lung cancer and chronic obstructive pulmonary disease.

The World Health Organisation estimates that deaths attributable to ambient air pollution in 2012 include:

- 127,000 from acute lower respiratory infections
- 227,000 from lung cancer
- 389,000 from chronic obstructive pulmonary disease
- 1,485,000 from stroke
- 1,505,000 from Ischaemic heart disease.

### OUTDOOR AIR POLLUTION ATTRIBUTABLE DEATHS BY CAUSE



-  **40%** - 1,505,000 Ischaemic Heart Disease
-  **20%** - 743,000 Lung diseases
-  **40%** - 1,485,000 Stroke

## 4 MOST CITIES HAVE AIR QUALITY THAT FAILS TO MEET GLOBAL GUIDELINES

Major urban centres, particularly in developing countries, are now so badly polluted that their population face grave health risks. 1600 cities worldwide report air pollution levels to the World Health Organisation. Based on this data, only 12% of people live in cities that comply with the WHO Air Quality Guideline annual mean values of PM10 or PM2.5. Around half of urban dwellers are exposed to

levels 2.5 times higher than the guideline, putting them at particular risk of serious long-term health problems.

It is important that cities take steps to address air quality, and put in place regulations that limit emissions from vehicles as part of a comprehensive action plan that is monitored and enforced.

## 5 ASIAN CITIES FACE PARTICULAR CHALLENGES

According to the World Health Organisation database, the majority of the cities with the worst air pollution are now in South Asia. Six of the ten most polluted cities in the world are now in India, with three in Pakistan.

Cities in China also have significant air quality issues. Sixty-six out of the 74 biggest Chinese cities failed air quality standards in 2014. The Beijing-Tianjin-Hebei region was the hardest hit by air pollution. In 2014, the 10 cities with the least number of days that met air quality standards were almost all located in the region and its surrounding areas, and eight were in Hebei Province.



**89% of Chinese Cities**

**66 of China's 74 biggest cities** failed to pass the government's basic air quality test in 2014 .

The FIA Foundation supports the Partnership on Clean Fuels and Vehicles (PCFV) which was set up in 2003, and has helped to successfully eliminate lead from fuel in most countries around the world. It now works to reduce the sulphur level in fuel to levels that allow effective control of particulate matter through emissions filters.

The Climate and Clean Air Coalition works to reduce the climate change impacts, particularly black carbon in diesel vehicle emissions which absorbs sunlight and heats the atmosphere.



### Additional information

FIA FOUNDATION: <http://www.fiafoundation.org/our-work/liveable-cities>

CLIMATE AND CLEAN AIR COALITION (CCAC): <http://www.ccacoalition.org/en>

PARTNERSHIP ON CLEAN FUELS AND VEHICLES (PCFV): <http://www.unep.org/transport/new/pcfiv/>

CLEAN AIR ASIA: <http://cleanairasia.org/>

WORLD HEALTH ORGANISATION: [http://www.who.int/topics/air\\_pollution/en/](http://www.who.int/topics/air_pollution/en/)