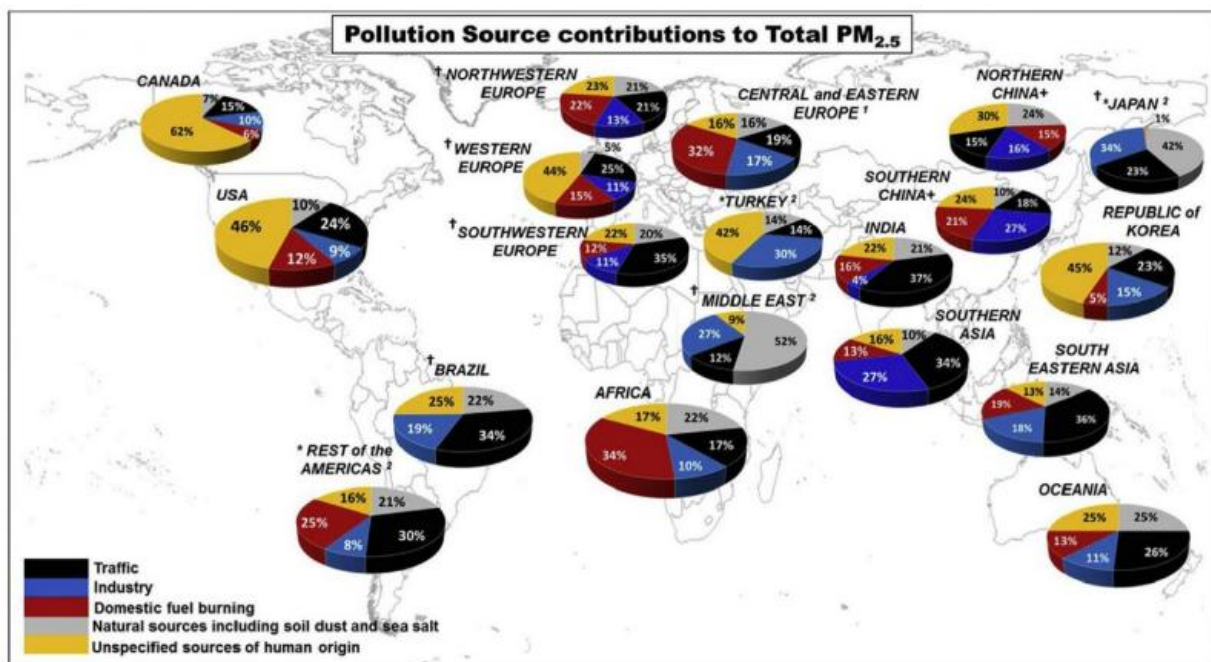


Urban air pollution – what are the main sources across the world?

December 1 2015



Population-weighted averages for relative source contributions to total PM_{2.5} in urban sites

Particulate matter (PM) in the air can enter the human body, affecting the cardiovascular system as well as other major organs. Chronic exposure leads to a number of health risks. The European Commission's in-house science service, the Joint Research Centre (JRC) and the World Health Organization (WHO) have identified the main categories of PM

in urban air in 51 different cities around the world. On average, traffic is the biggest source of air pollution, responsible for one quarter of particulate matter in the air.

In order to reduce the negative health impact of air pollution, it is important to know its sources and quantity. Measurements of fine particles PM_{2.5} and PM₁₀ serve as indicators of air quality. The recently published study shows, based on the available information, that traffic (25%), combustion and agriculture (22%), domestic fuel burning (20%), natural dust and salt (18%), and industrial activities (15%) are the main sources of particulate matter contributing to cities' [air pollution](#). However, there are significant differences between various regions of the world.

Atmospheric processes that lead to the formation of particles as a result of gaseous traffic, heating and agriculture emissions appear to be most considerable in North America, Western Europe, Turkey and the Republic of Korea. Domestic fuel burning dominates the contributions to [particulate matter](#) in Eastern Europe and in many developing countries in Africa. In the developing countries, this source is likely to be associated with cooking, while in Eastern Europe the use of coal for heating seems to be the most probable reason. Natural dust is the main source of PM₁₀ in the Middle-East and Northern African countries, likely due to their vicinity to arid areas. Sea salt is the most important natural source of PM₁₀ in north-western Europe.

The database resulting from this study is published on the WHO website.

More information: Federico Karagulian et al. Contributions to cities' ambient particulate matter (PM): A systematic review of local source contributions at global level, *Atmospheric Environment* (2015). [DOI: 10.1016/j.atmosenv.2015.08.087](https://doi.org/10.1016/j.atmosenv.2015.08.087)

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