

Air quality

Melbourne's air quality

Density of air pollutants is generally higher in urban areas as a result of population and traffic density. Higher concentrations usually reflect industrial sources, high numbers of domestic wood combustion heaters or high traffic density.

Mountain ranges to Melbourne's north and east help contain the 'Melbourne eddy' circulation. Under certain conditions the eddy carries pollutants in a loop from the industrial suburbs in Melbourne's west over the city to residential areas in the east and south east before circling back over Port Phillip Bay.

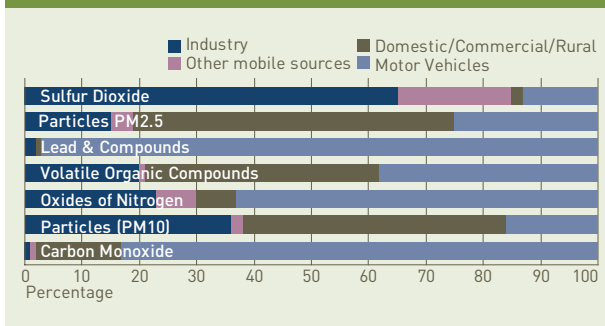
Key factors influencing Melbourne's air quality in 2004 included smoke from bushfires and increased dust in the air as a result of the drought. Domestic wood heaters were major contributors, contributing as much as 60% of the fine particles emitted into the air during cooler months. Motor vehicles are the greatest single contributor to air pollution, responsible for 83% of the carbon monoxide, 41% of the hydrocarbons and 63% of nitrogen oxide released into Melbourne's atmosphere.

The six most widespread pollutants - carbon monoxide, volatile organic compounds, hydrocarbons, oxides of nitrogen, sulfur dioxide, particles and lead - are used as indicators of air quality.

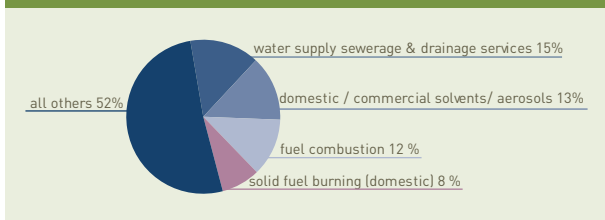
Mortality due to air pollution in Australia is higher than the road toll. Each year on average, 2,400 of the 140,000 deaths in Australia are linked to air quality and health issues, an average of one death every four hours. Motor vehicles, industry, domestic, rural and commercial uses all contribute to emissions.

(Beer T 2000, Exposure assessment and health risk assessment - the Australian context, In Air pollution and health risk, T Beer, ed., pp. 1-26, CSIRO and Clean Air Society of Australian & New Zealand, Melbourne.)

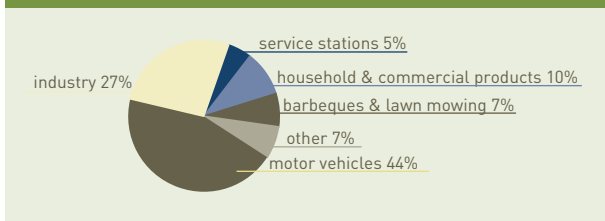
1 Contributions to annual total emissions by sector Port Phillip Region 1995-1996



2 Port Phillip Region emissions from industrial facilities and diffuse sources Port Phillip Region, 1995-1996



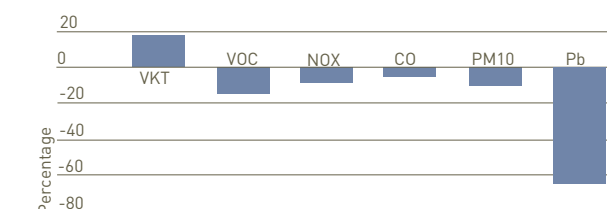
3 Sources of summer volatile organic compounds (VOC) emissions (tonnes per day) Port Phillip Region, 2005



Changes in Melbourne's air quality

Melbourne's air quality has increased significantly over the last 20 years. While car use has increased, with a 20% increase in vehicle kilometres travelled between 1990 and 1995-96, emissions have decreased over this period. Over the last 30 years the banning of backyard burning, the control of large point sources of pollution, and greater controls on car exhausts have seen significant improvements in air quality.

4 Percentage change in air emissions and increased car use Port Phillip Region, 1990 to 1995-96



VKT = vehicle kilometres travelled
VOC = volatile organic compounds
NOX = nitrogen oxide
CO = carbon monoxide
PM10 = particulate matter
Pb = lead