Air Quality Facts 3:

Major sources of air pollution emissions in Western Australia

Western Australia is the largest state in Australia and has a population of approximately 2,270,300 people as of December 2009. In WA, the majority of residents live in the urbanised city environments, with over 70 per cent living in Perth. These intense concentrations of human settlements are priorities for air quality management in WA. The type of management action taken will depend on the air pollutant sources in the region and their relative contribution.

Major air pollutants sources across WA

Figure 1: Major air pollution sources in WA

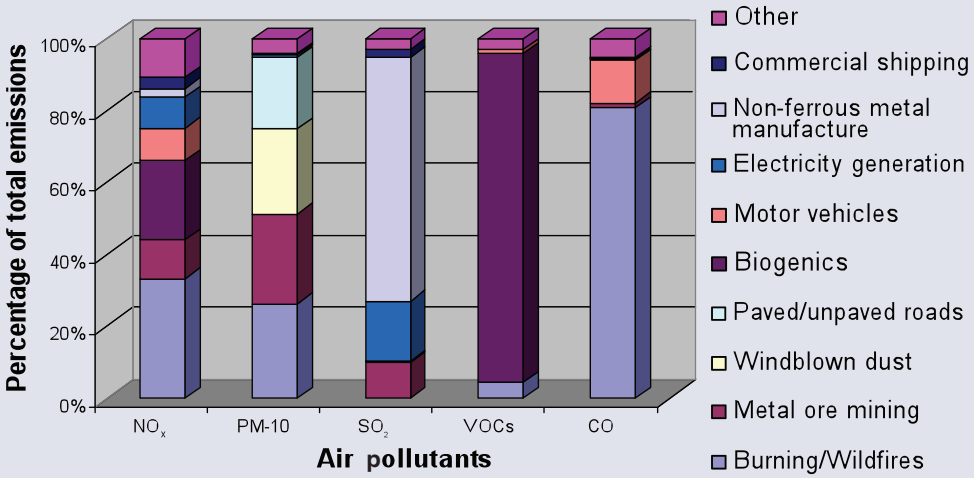


Figure 1 displays the major sources of air pollution in WA as detailed under the National Pollutant Inventory (NPI) utilising 2007–2008 data. The graph is representative of the entire state of WA, including rural areas. Most of these air pollution sources are also major sources of greenhouse gases.

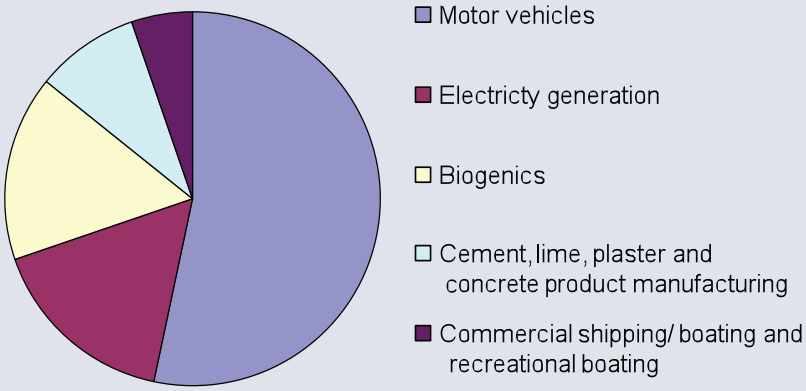
As indicated in Figure 1, the largest sources of air pollution in WA are wildfires/ prescribed burning, non-ferrous metal manufacturing, metal ore mining and biogenics. Biogenic emissions describes air pollution produced from vegetation, which produces natural emissions of volatile organic compounds (VOCs).

In contrast to the state-wide emissions, in the Perth metropolitan region, the biggest sources of air pollution are motor vehicles, electricity generation, domestic solid fuel burning, wildfires/agriculture/fuel burning and petroleum and coal product manufacturing.

As illustrated in **Figure 2**, motor vehicles are the largest source of nitrogen oxides (NO_x) and carbon monoxide (CO) in the local Perth atmosphere.

Important Air Pollution Sources in Perth

Figure 2: Major NO_x sources in the Perth airshed



Across WA, the largest sources of NO_x are forest burning, and wildfires.

In **Figure 3**, the largest source of particulate matter (PM-10) emissions in Perth is solid fuel burning, especially from domestic wood heaters during the winter months. Motor vehicles are also a major contributor to PM-10 emissions in the Perth airshed.

In contrast, the major sources of PM-10 across WA include mining, wind-blown dust and also dust re-suspension from paved and unpaved roads. Forest burning and wildfires are also major sources of PM-10 air pollution in WA and in the Perth region.

In **Figure 4**, the major sources of sulfur dioxide (SO_2) in Perth include fossil fuel electricity generation, and petroleum and coal manufacturing.

Across WA, the largest source of SO_2 emissions is non-ferrous metal manufacturing. This includes mining activities such as tin, copper and silicon smelting, and also secondary aluminium and zinc processing.

In **Figure 5**, the major sources of CO emissions in Perth include motor vehicles, solid fuel burning, forest burning and wildfires. In WA the major source of CO is forest burning and wildfires as displayed in Figure 1. This indicates that in the urban area of Perth, the large number of motor vehicles is creating a major source of urban air pollution.

In **Figure 6**, the major source of VOCs air pollution is motor vehicles, solid fuel burning, domestic/commercial solvents and aerosols.

In contrast, the largest VOCs air pollution source for the whole of WA is biogenic emissions from vegetation.

More information...

For more information on air pollution sources in WA, please see the following resources:

- Air Quality Facts at www.dec.wa.gov.au/airquality
- Air Quality Information Sheets at www.dec.wa.gov.au/airquality
- National Pollutant Inventory at www.npi.gov.au/
- Australian Government's Department of Climate Change: www.climatechange.gov.au/

The Air Quality Management Branch can be contacted by phoning 9333 7436 or email airquality@dec.wa.gov.au.

Figure 3: Major PM-10 sources in the Perth airshed

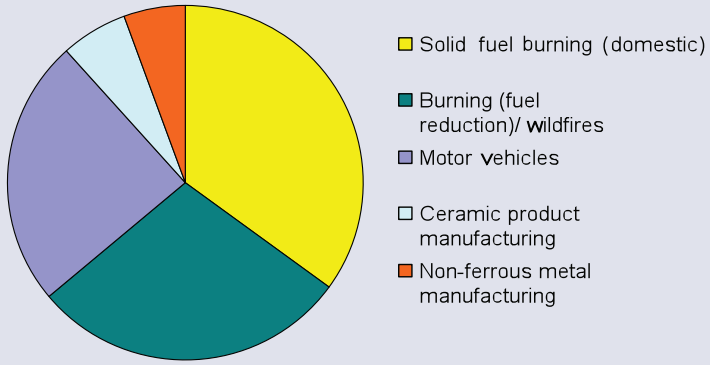


Figure 4: Major SO_2 sources in the Perth Airshed

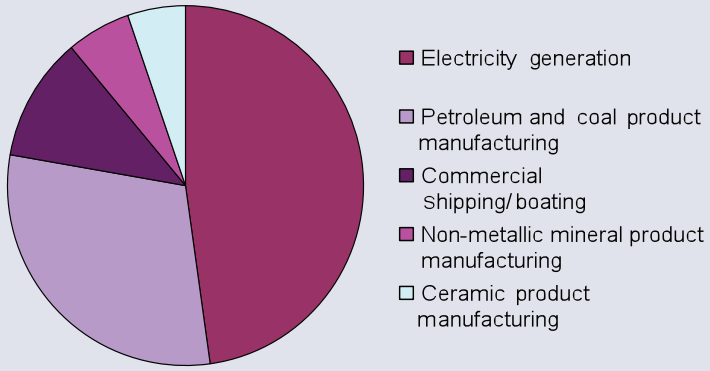


Figure 5: Major CO sources in the Perth airshed

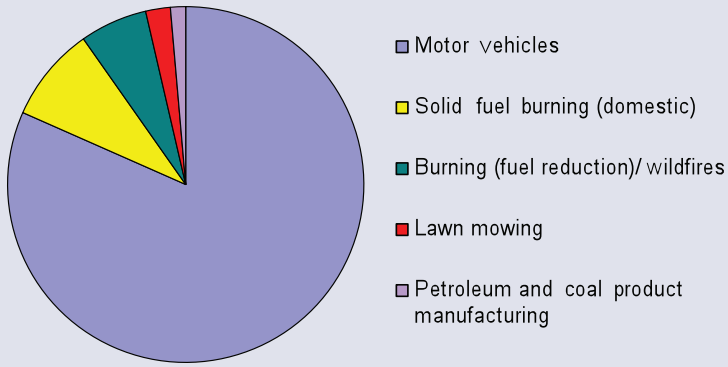
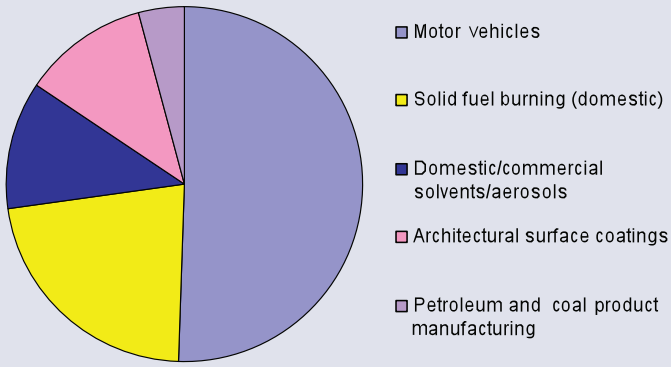


Figure 6: Major total VOC sources in the Perth airshed



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