Clean air FACT SHEET

Transport

The purpose of this fact sheet is to outline the major pollutants and sources of transport-related air emissions.

There have been major improvements in design, fuel and service standards for vehicles over the past 30 years that have reduced air emissions per litre of fuel from transportation. However, motor vehicles, off road vehicles and other transport such as shipping, and diesel trains still constitute a significant source of air pollution in Victoria

Pollutants

The main pollutants emitted by the transport sector are nitrogen oxides, sulfur dioxide, fine particulate matter and volatile organic compounds. They are primarily emitted from the combustion of fossil fuels (such as petrol) to power vehicles. Further information on these pollutants is in the Fact Sheet *Air pollution sources, impacts and trends*.

Transport emissions can also contribute to loss of amenity (for example, through odour and poor visibility).

Transport emissions, in particular from motor vehicles, are generally released in close proximity to people, are widely distributed and generally increase in concentration with population size.

Regulation

Motor vehicle exhaust emission standards are set nationally via the Australian Design Rules and Vehicle Standards Rules. These apply to vehicles at point of import or manufacture, and when they become in-service (ie on the road). These requirements ensure that newer vehicles have greater fuel efficiency, and hence lower emissions per unit of fuel. There are separate national emission standards for vehicles over 4.5 tonnes (Heavy Vehicle National Law).

Victoria's Environment Protection (Vehicle Emissions) Regulations prescribe air emission (and noise) standards for "in-service" vehicles.

Motor vehicle fuel quality and pollution control equipment (such as catalytic converter performance) also affect exhaust emissions. Fuel quality parameters are also regulated nationally under the National Fuel Quality Standards Act and associated regulations.

Air emissions also occur from volatile organic compounds evaporating from petrol, particularly during summer months. The Environment Protection (Vehicle Emissions) Regulations specify vapour pressure limits to minimise these.

Contribution to overall emissions

In Melbourne in 2006, motor vehicle emissions contributed the following percentages of total Melbourne air pollutant emissions:

- 72 per cent of carbon monoxide emissions
- 70 per cent of nitrogen oxide emissions
- 28 per cent of volatile organic compound emissions
- 31 per cent of emissions of fine particulate matter and 27 per cent of emissions of coarse particulate matter
- 6 per cent of sulfur dioxide emissions

Environment Protection Authority Victoria (EPA) is currently undertaking an update of its emissions inventory, which includes vehicles, to align with the 2016 census year. This update will capture changes to the Victorian vehicle fleet, in terms of increased size and improved motor vehicle efficiency.

PHOTOGRAPH: CRAIG MOODIE

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Non-Road Vehicles

These include machinery such as agricultural, mining and construction equipment. They contribute a relatively small amount to total emissions, but can be a cause of short term, localised emissions – for example during road construction.

Shipping emissions

Shipping is a relatively small contributor to total transport emissions but can have localised impacts.

Ships generate sulfur dioxide, nitrogen oxides and particulate matter from their fuel, which can be a lower grade oil known as “bunker fuel”.

Currently, ships are allowed to use fuel with a maximum sulfur content of 3.5 per cent. From 1 January 2020, this will be reduced to a maximum of 0.5 per cent under new international standards. Victorian shipping will be required to comply with these.

Due to its international nature, most actions to manage shipping emissions are taken through “MARPOL”, a treaty developed by the International Maritime Organization that establishes legally-binding international standards to control specified emissions and discharges from ships.

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