

AIR POLLUTION, PERTH

2711. Dr J.M. Woollard to the Minister for the Environment

The 2007 *State of the Environment Report* mentions that levels of measured atmosphere pollutants occasionally fail to meet national guidelines - mostly photochemical smog and haze in Perth and particulates in some regional areas - and I ask the Minister:

- (a) how is the air quality of Perth monitored;
- (b) to what extent do the following activities contribute to Perth's air pollution problems:
 - (i) smoky vehicles;
 - (ii) wood-fired stoves; and
 - (iii) prescribed burn offs; and
- (c) what is the Minister doing to reduce air quality problems caused by:
 - (i) smoky vehicles;
 - (ii) wood-fired stoves; and
 - (iii) prescribed burn offs?

Mr D.A. TEMPLEMAN replied:

- (a) The Department of Environment and Conservation (DEC) has operated an ambient air monitoring network throughout the Perth metropolitan region since the mid-1990s. The network currently consists of 10 fixed sites. Data are collected for ozone, particles[i] (as PM10 and PM2.5), carbon monoxide (CO), nitrogen dioxide and sulphur dioxide. Monitoring data are assessed against national air quality standards established by the Environment Protection and Heritage Council.

This routine monitoring is augmented by special studies carried out by DEC in targeted areas, where substances such as volatile organic compounds (VOCs), heavy metals, fluoride, ammonia and polycyclic aromatic hydrocarbons (PAHs) may be monitored.

- (b) (i) No data are specifically available for smoky motor vehicles. However, emissions from the whole motor vehicle fleet are estimated. The National Pollutant Inventory (NPI) data for 1998-99, estimated that the motor vehicle fleet contributed the following emissions in the Perth region:
 - around 20% of PM10 emissions,
 - around 45% of oxides of nitrogen (NOx) emissions,
 - around 80% of CO emissions, and
 - around 45% of total VOC emissions.

An update of estimates of emissions from diffuse sources in Perth for 2004/05 is currently being prepared, but is not yet available.

- (ii) NPI data for Perth (for 1998-99) indicate that residential wood smoke (which includes wood-fired stoves and open fireplaces) contributes 23% of anthropogenic particle emissions over a whole year or 86% of winter particle emissions. With estimates of natural source contributions included, residential wood smoke was estimated to contribute 66% of total PM10 in winter months. The most recent data suggest that wood heaters now contribute 31% of winter particles emitted through human activities or 25% of all particles emitted. This reduction is largely attributed to the Government's haze reduction initiatives.

Residential wood burning also contributes:

- around 0.5% of NOx emissions,
- around 10% of CO emissions, and
- around 20% of total VOC emissions.

- (iii) Smoke from forest fires and prescribed burns occasionally affects the Perth metropolitan area. However, the frequency of events when National Environment Protection Measure (NEPM) standards for PM10 or PM2.5 have been exceeded has fallen significantly over the past five years to one to three events per year. This reduction is a result of proactive initiatives by DEC to improve planning and implementation of prescribed burn programs.

Prescribed burning contributes:

- around 6 % of PM10 emissions,
- around 0.1 % of NOx emissions,
- around 2 % of CO emissions, and
- around 0.5 % of total VOC emissions.

(based on NPI data for 1998-99)

(c) The Perth Air Quality Management Plan, launched in 2000, contains specific initiatives to address each of these issues. The plan is a 30-year strategy intended to ensure that clean air is achieved and maintained in the metropolitan region. The plan aims to reduce the emission of pollutants that cause occasional episodes of poor air quality, and to prevent the development of future air quality problems.

(i) Emissions from motor vehicles are being addressed by a combination of approaches including fuel quality regulations, emissions testing, education, and smoky vehicle reporting and repair. Alternative fuel and technology options such as the use of liquefied petroleum gas, natural gas, biofuels, ultralight vehicles and fuel cell and hybrid drive systems are also being investigated and tested. Investments in vehicle emission control programs total more than \$2 million over the past 3 years.

More broadly, emissions from the transportation sector are being reduced by the Government's land use planning and transport planning programs (such as Network City and Travelsmart) that aim to reduce the kilometres travelled by motor vehicles.

(ii) Emissions from wood heaters have been specifically targeted under the Perth Air Quality Management Plan. Under State legislation, sales of new wood heaters must meet AS/NZS standards for efficiency and emissions, and firewood must meet acceptable moisture standards.

Two wood heater surveys have been conducted in recent years, one by the previous Department of Environment (now DEC) in 2004 and one by the Australian Bureau of Statistics in 2005. The results suggest there has been a significant move away from wood heaters in Perth, accelerated by DEC's Haze Reduction Initiative that commenced in 2002.

DEC organised replacement programs for wood heaters in 2004, 2006 and 2007. Financial incentives were offered to users of wood heaters to scrap them and replace them with more efficient and much less polluting gas-fired units. More than 1000 wood heaters have been removed from use as a result of these programs.

On 23 May 2007 DEC released a wood heater policy options paper to inform stakeholders and the broader community of the environmental and health issues associated with wood smoke. A series of recommendations for action over the next five years was presented for consideration. Initiatives include monetary incentives for people to surrender second-hand wood heaters or to convert to alternative heating systems and a proposal to require the removal of a non-compliant wood heater when a house is sold.

(iii) Air quality considerations are incorporated into established smoke management guidelines used by DEC to schedule prescribed burns. Decisions on whether to burn incorporate input from weather forecast models. These models are run daily in advance of any burning activity. Burns do not proceed if smoke is predicted to cause PM10 particulate levels to exceed the NEPM standard in the metropolitan area.

[i] PM10 are particles which have an aerodynamic diameter less than 10µm. PM2.5 are particles which have an aerodynamic diameter less than 2.5µm.