Environmental Health Indicators for New Zealand

www.ehi.ac.nz

EHI #31

August 2011

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EXCEEDANCES OF SULPHUR DIOXIDE (SO_2) ENVIRONMENTAL STANDARDS IN NEW ZEALAND

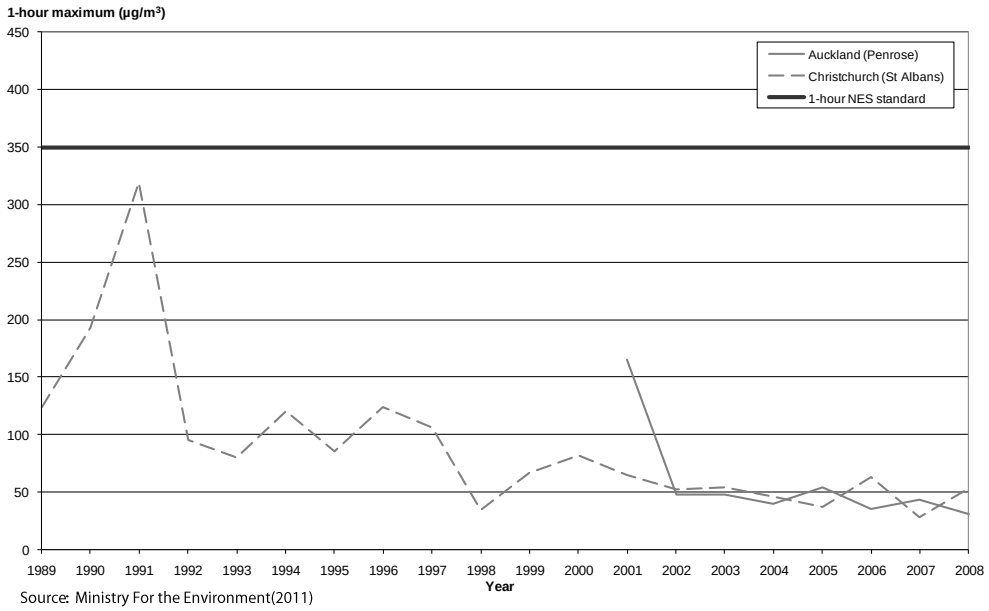
Air quality is a critical environmental health issue, as clean air is essential to life and development. Air pollution has been linked to a wide range of health effects, including by exacerbating respiratory and cardiovascular conditions (American Thoracic Society 1996, 2000) and causing restricted activity days (eg, air pollution causing breathing problems which prevent work attendance) (Fisher et al 2007).

The sources of air pollution can be domestic, vehicular, industrial and natural (including wind-blown dust). However, the key pressure on air quality in New Zealand is domestic heating, with high levels of particulate matter due to household wood and coal burning (Ministry for the Environment 2010a). In Auckland, population growth is increasing the number of vehicles on the road, which also contributes to poor air quality (Ministry for the Environment 2010c). In general, the concentration of pollutants in the air can be influenced by pollution sources, location, topography, time of day, weather conditions, wind patterns, season and specific emission types and levels.

Short-term exposure to high concentrations of SO_2 has been shown to have health effects such as respiratory symptoms, particularly for asthmatics. The National Environmental Standards for Air Quality have set a maximum concentration of 350 µg/m^3 for SO_2.

Figure 1 presents the one-hour maximum levels of sulphur dioxide at sites in Auckland and Christchurch, and compares each one with the national environmental standard of 350 µg/m^3 (measured as a one-hour average). The standard may be exceeded nine times per year.

Figure 1:
SO_2 ONE-HOUR MAXIMUM LEVELS IN TWO MONITORED AIRSHEDS, 1989-2008



Source: Ministry For the Environment(2011)

SO_2 ONE-HOUR MAXIMUM LEVELS

Figure 1 compares the one-hour maximum levels of sulphur dioxide at sites in Auckland and Christchurch with the national environmental standard of 350 µg/m^3 (measured as a one-hour average). Since 1991 the maximum levels of SO_2 in Christchurch have decreased considerably. The Auckland and Christchurch sites have consistently met the national environmental standard for SO_2.

References
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