



# Environmental Health Indicators for New Zealand

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## USE OF WOOD OR COAL AS A SOURCE OF HOME HEATING

Home heating through the use of wood or coal fires is a major source of air pollution in most towns and cities of New Zealand, with emissions considered to be as toxic as other sources of air pollution (Naeher et al 2007). Wood and coal fires emit carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), particulate matter and other organic compounds, including polycyclic aromatic hydrocarbons (Fisher et al 2007). Studies have shown that coal fires emit 58–75% more PM<sub>10</sub> pollution than wood burners (Ministry for the Environment 2005).

In New Zealand, air pollution from wood-burning domestic fires mostly occurs in winter and in particular locations such as Nelson, Alexandra and Christchurch (Fisher et al 2007). In Christchurch, conditions such as low-level temperature inversions, calm weather, and the burning of wood as the main heat source can result in a number of elevated air pollution days, particularly during winter (Scoggins 2004). The Health and Air Pollution in New Zealand (HAPiNZ) study estimated there was an increase of 4.8% in the national average mortality rate associated with air pollution (Fisher et al 2007). Using wood or coal fires as a source of fuel for heating can also lead to poor air quality within the dwelling.

In the 2006 Census, 39.0% of all dwellings recorded wood as a source of home heating, compared with 46.9% in 1996 (Table 1). The proportion of dwellings using coal as a source for heating nearly halved over the same period, from 12.5% in 1996 to 6.7% in 2006. This indicator will be updated when new data becomes available.

**Table 1**  
PERCENTAGE OF DWELLINGS USING CERTAIN FUEL TYPES FOR HOME HEATING, 1996, 2001 & 2006.

Fuel type	1996	2001	2006
Electricity	74.3%	69.0%	71.4%
Wood	46.9%	42.8%	39.0%
Bottled gas	21.5%	27.1%	26.4%
Mains gas	11.2%	12.9%	12.6%
Coal	12.5%	8.9%	6.7%
Solar power	0.7%	0.9%	1.0%
No fuels used in this dwelling	1.8%	2.7%	2.3%
Other fuel(s)	0.9%	1.0%	2.0%
Not elsewhere included	3.8%	4.2%	4.5%

Notes: Dwellings refers to private occupied dwellings. Multiple fuel types could be reported; total response fuel types have been reported in the table, which means that percentages will not add to 100.0%.  
Source: Statistics New Zealand (2010)

### References

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