

# Inquiry Into the Health Impacts Of Air Pollution In Victoria

## Additional Information - Australian Air Quality Group

### a) State-wide, cost-effective mitigation strategies

#### **The most cost-effective strategy is to tackle wood heater pollution**

Wood heater policy has failed over the past 20 years because it has been based on an untrue claim - that new heaters are a lot cleaner than older models.

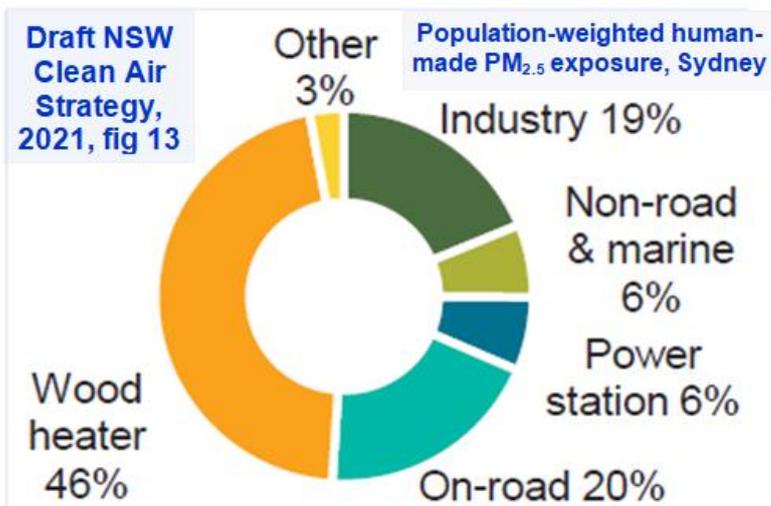
The pictures below show the reality. All except one smoke plume are known to be from installations satisfying the AS/NZS 4013 standard deemed appropriate until September 2019. Do Australians really think it is OK to have to put up with this level of emissions, especially when heaters are installed as an approved device without even consulting neighbours and local councils have neither the resources nor the skills and expertise to respond to complaints?



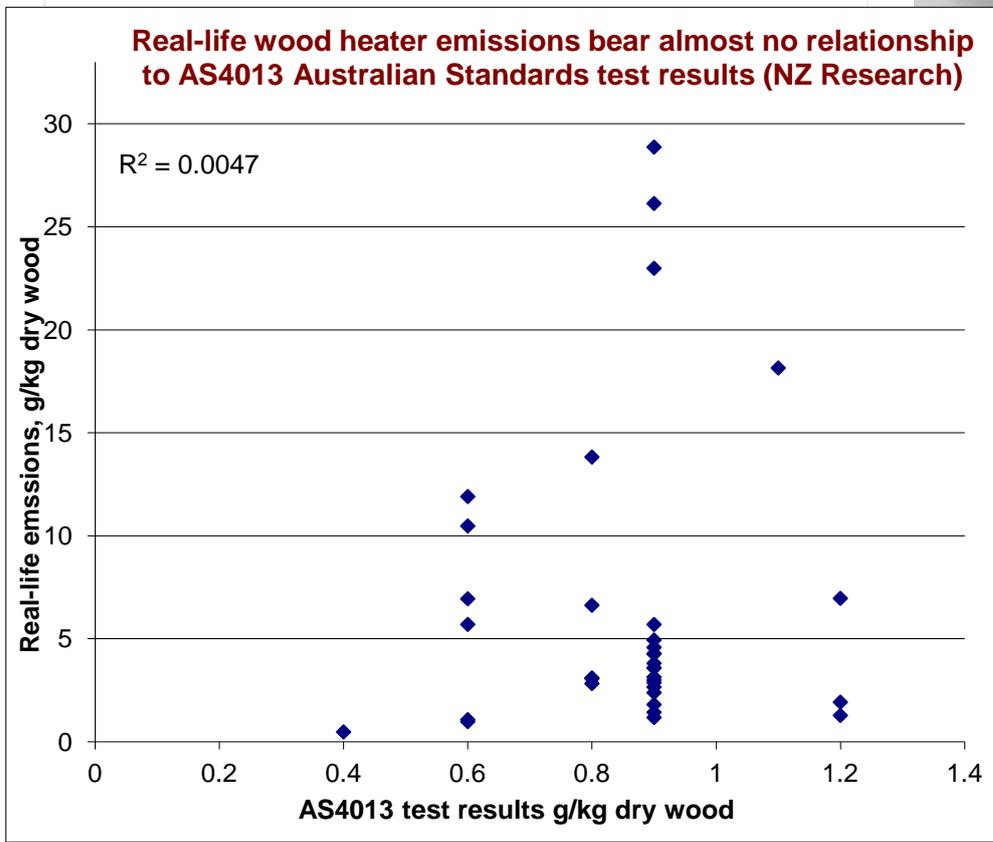
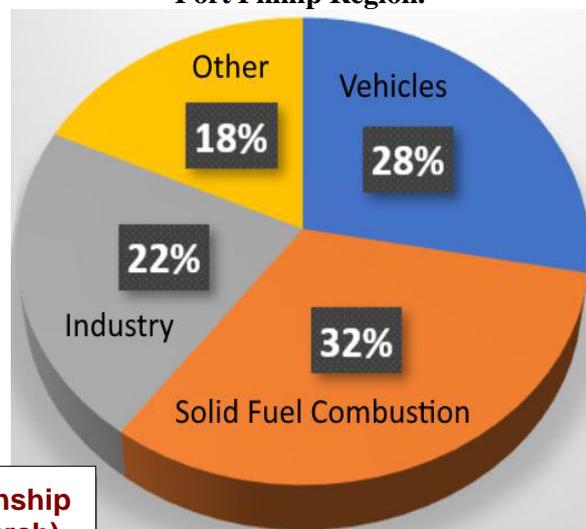
One result of policies allowing new heaters with emissions like those in the above pictures is that wood heaters have disproportionate health costs. Despite only 4.4% of Sydney’s households using wood as main heating, the NSW Clean Air Strategy reports that wood heating accounts for 46% of Sydney’s population exposure to human-made PM<sub>2.5</sub> – the pollutant acknowledged to have the largest health impacts across NSW.

In Sydney-Newcastle-Wollongong, 23% of human-made primary PM<sub>2.5</sub> emissions are from wood heating, equivalent to 42% population exposure (because the pollution is emitted where people live). Consequently, 42% of \$3.3 billion health costs of PM<sub>2.5</sub> are attributed to wood heaters – over \$13,000 per heater per year.<sup>1</sup>

Population-weighted exposure hasn’t been estimated for Melbourne’s Port Phillip Region, but the 32% of human-made emissions attributed solid fuel combustion (as reported in the Policy Impact Statement for the Variation to the Waste Management Policy, Solid Fuel Heating, 2017) suggests that the proportion of population-weighted exposure to human-made PM<sub>2.5</sub> in Melbourne, and the health costs per heater per year, might be at least as high as Sydney, and increasing. Submission 113 to this Inquiry quotes EPA Victoria: “in 2017 Victoria experienced a noted increase in the number of days where the PM2.5 daily standard of 25 µg/m<sup>3</sup> was exceeded, with most exceedances attributed to urban sources (wood heaters)”.



**Sources of human-made PM<sub>2.5</sub> emissions in the Port Phillip Region.**



**Much better policies are therefore needed because of the fact that new wood heaters don’t live up to the advertising claims. The laboratory test for new heaters bears little or no-relationship to real-life emissions.**

In 2005, New Zealand introduced a stricter emissions limit for all urban areas using this test than currently required anywhere in Australia. It didn’t work. When real-life emissions of 35 heaters were compared with the AS4013 laboratory test, real-life emissions were found to average 8 times worse than the AS4013 laboratory tests of the same model.

<sup>1</sup> The draft NSW Clean Air Strategy reports estimated health costs of \$3.3 billion in the GMR or the 420 premature deaths per year attributed to PM<sub>2.5</sub> pollution. With 42% of population-weighted exposure to PM<sub>2.5</sub> pollution attributed to wood heaters, this implies wood heater pollution is costing \$1.386 billion per year, or \$13,186 per heater per year, assuming approximately 100,000 wood heaters in use in the GMR.

**Health Damage in New Zealand.** Despite having stricter standard since 2005 for all urban areas that currently required anywhere in Australia, the ‘*Growing up in New Zealand*’ Study that found even 1 wood heater per hectare increased by 7% the risk that a child under 3 will need hospital emergency treatment for all conditions except accidental injury. There’s no safe level of PM<sub>2.5</sub> pollution. The current Australian daily PM<sub>2.5</sub> standard is 25 µg/m<sup>3</sup>, (with a stricter standard of 25 µg/m<sup>3</sup> from 2025) but any exposure to wood smoke above 4 µg/m<sup>3</sup> increases the risk of hospital admission for heart failure (see main submission for references).

**Toxic Chemicals in Wood Smoke.** Wood smoke contains the same and very similar chemicals to tobacco smoke. Known toxins include polycyclic aromatic hydrocarbons (PAH), some of which are listed as human carcinogens. Using a wood stove for a single day emits as many PAH as in the smoke from over half a million cigarettes. There are many other health impacts of wood smoke and the PM<sub>2.5</sub> and PAH it contains, at levels of exposure that can be produced by living near to a wood heater, e.g. low birth weight, genetic damage in babies, increased risk of anxiety and attention deficit, reduced IQ when children start school, increased risk of asthma and stunted lung growth, cancers, strokes, heart attacks, lung diseases and dementia.

**Quoting reductions from a test almost unrelated to real-life emissions is misleading.** The AHHA’s submission (as wood heating industry representatives) about a “voluntary reduction in emissions 4gm per kg down to 1.5gm per kg” is misleading. The New Zealand research shows that new heaters average 8 times worse than emissions of the same model in laboratory test, implying new heaters are only slightly less polluting than existing models and have expected health costs of thousands of dollars per heater per year.

**Development of more realistic test abandoned after industry opposition to interim measures.** Attempts by the Commonwealth Department of Environment and Heritage and the Standards Australia Committee (SAC) to develop a new test to better reflect real-life emissions were abandoned in 2007. As an interim measure, the SAC recommended (by 15 votes to 4) to half the current emissions limit as an interim measure while the new test was being developed. Two of four industry representatives voted against. Proposals can’t go ahead without majority support from all major stakeholders, so the process did not proceed.

Six years later in 2013, the AHHA's claimed to a Senate Inquiry on the impacts on health of air quality in Australia that the **failure to strengthen national wood heater standards** (and develop the new test) was because of a "Standards Australia reshuffle". The Senate Inquiry Report concluded this was untrue, that the failure "was the result of a failure of the technical committee to reach consensus within the meaning of Standards Australia's rules, which according to the minutes supplied to the committee was **a result of opposition from industry representatives.**" (see para 6.35, p 63)

There were no further attempts in Australia to develop a real-life emissions test. Instead, there was what the industry describes as a “voluntary reduction in the emissions” using a test we know from the New Zealand research is pretty much unrelated to real-life emissions, and is completely inadequate to protect public health. This has led to the current problem, where wood heaters are advertised and sold as clean and environmentally friendly, despite estimated health damage amounting to thousands of dollars per heater per year.

### **Community Group Recommendations.**

#### **1. Effective Education on Health Effects. 2 No new wood heaters. 3 Phase-out existing ones.**

Many community groups discussed the major sources of pollution for this Inquiry. There was general agreement on the urgent need to develop an effective education program with factual information on the health effects. Most people would not want to use a device that, in a single day, emits as many toxic chemicals as in the smoke from half a million cigarettes, or cause anxiety or attention deficit in children, or a 5 point reduction in IQ when they start school, or contributes substantially to a form of pollution that considerably increases the risk of Covid19.

The health education program should be coupled that with measures to phase out existing heaters, e.g. by requiring them to be removed when houses are sold – something that costs the government nothing, but allows existing wood heater users to continue to use them as long as they live in the house. This process could be speeded up by providing subsidies to replace exiting wood heaters with alternatives, as already happens for people on low incomes, who can access the Victorian Government [Energy Upgrades](#) program.

Phasing out wood heaters inevitably means not allowing new heaters, because current models have are almost as polluting as existing ones and have health costs of thousands of dollars per heater per year, representing an unacceptable imposition on people living nearby. Asthma Australia’s representative survey of 25,000 Australians showed that [most Australians would support regulations to phase-out woodfire heaters for better, healthier alternatives.](#)