

Submission To the Senate Inquiry into Impacts on Health of Air Quality in Australia

For 17-years I have campaigned to draw government and public attention to the serious environmental and public health impacts of residential wood smoke pollution in Canberra and Australia generally. In that time we have had some progress in Canberra with the licensing of wood sellers, the introduction of the wood heater buyback scheme and wood heater education programs. While these initiatives have been welcomed and slowly brought about some improvements, much more needs to be done to protect the population from the serious health impact of domestic wood smoke pollution.

That is why I welcome the opportunity to provide the following submission to the Senate Inquiry into Impacts on Health of Air Quality in Australia.

In Canberra, and in many other towns and cities across Australia, we have a very small number of households responsible for the majority of our air pollution. In winter particle pollution increases threefold in Canberra and it is a similar story in other Australian towns and cities. According to the Australian Bureau of Statistics¹ only 2-point-3-percent of Canberrans burn wood for their primary source of household heating. According to the Federal Environment Department² the burning of wood for domestic heating is the largest single source of particle pollution at 71-percent while vehicles account for just 10-percent. Domestic wood burning is responsible for 66-percent of polycyclic aromatic hydrocarbon (PAH, known to be carcinogenic) pollutants and cars are responsible for about 30-percent.

Domestic wood smoke is known to contain many toxic gases/chemicals and known carcinogens³. In many respects it is very similar to tobacco smoke and we know there is no safe level of exposure to that. The NSW Environment Department⁴ warns on its website that; *“Wood heaters can produce up to seven times as much particle pollution as cars and the air pollution it causes can also effect our health.”* It goes on to warn that; *“wood smoke contains a number of noxious gases, including carbon monoxide, oxides of nitrogen and a range of organic compounds some of which are toxic or carcinogenic and fine particles, which go deep into the lungs.”* It also lists the chemicals contained in wood smoke on its website. They include, apart from those already mentioned, Benzene, Formaldehyde, particulate matter 10 and particulate matter 2-point-5, Toluene and polycyclic aromatic hydrocarbons among others. It goes on to say that *these pollutants can cause breathing difficulties even at relatively low levels, especially for people suffering existing respiratory conditions, such as*

¹ ABS: Environmental Issues, Energy Use and Conservation 2011

² National Pollution Inventory <http://www.npi.gov.au/>

³ Emissions from Domestic Solid Fuel Burning Appliances
<http://www.environment.gov.au/atmosphere/airquality/publications/report5/summary.html>

⁴ <http://www.environment.nsw.gov.au/woodsmoke/>

asthmatics, and for very young children and frail older people. There is also evidence that smoke pollution can cause cardiac problems. It warns that; if you can see or smell smoke from your wood heater then you are causing a problem for yourself, your family and your neighbours.

The ACT Government has stated domestic wood smoke pollution is a significant environmental health issue in Canberra and especially the Tuggeranong Valley. The ACT Government's latest Burn Right Tonight⁵ education and advertising campaign warns; *"Smoke from domestic wood heaters is the largest source of air pollution in Canberra. Wood smoke pollution is an environmental issue and is linked to a number of serious health conditions."* Minister Corbell⁶ stated in a press release dated 16 May 2012, *"Domestic wood heaters remain the largest source of air pollution in Canberra. Tuggeranong in particular has become an issue in winter with particle pollution due to emissions from wood heaters, as the area sits in a valley. It is important that Canberrans are aware of the effects of wood smoke."*

Even as long ago as 1991 a committee of inquiry⁷ warned the ACT Government, *"that a potential health risk of pollutant emissions by solid fuel heaters is intensified by their near ground level release from the suburban household chimney and a lack of control existed over their contribution to fine particle pollution had implications for public health."* People most affected by wood smoke pollution are those with pre-existing heart and/or lung conditions, the very young whose lungs are still developing and the frail and elderly.

Wood heaters in Australia must comply with an emissions standard that was set in 1999. This standard is considered out of date by many Australian and Environmental health experts. Wood heater and air pollution expert, Prof John Todd has stated; *"We must develop a new generation of wood heaters that burn cleanly when used in people's homes. How cleanly? Well, the present heaters emit somewhere around 10g of fine particles per kg (dry-weight) of firewood. The next generation must be 1 g kg or less in order to achieve acceptable air quality in areas with a high proportion of wood- users, and ideally we should aim for a further order of magnitude improvement to 0.1g/kg"*⁸

⁵ ACT Government "Burn Right Tonight Campaign"

http://www.environment.act.gov.au/environment2/residential_environment_protection_issues/air_pollution_from_domestic_premises

⁶ Media Release, Simon Corbell MLA

http://www.cmd.act.gov.au/open_government/inform/act_government_media_releases/corbell/2012/burn_right_to_night_and_cut_wood_smoke_pollution

⁷ The ACT Government's Standing Committee on Conservation, Heritage and Environment (April 1991)

⁸ Clean Air and Environmental Quality Journal Nov 2008

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbXhdXNhcWd8Z3g6NzNmMjA3ZmFiZTk2MzAyNA>

All attempts to review the current wood heater standard and apply a tighter emissions standard have failed. A Federal Government Scoping Paper⁹ states; *“Governments have been unable to achieve improvements to national wood heater emission standards due to industry veto in Standards Australia processes. The emissions standard was last revised in 1999 and the current level of 4 grams of particles per kilogram of wood burnt is well above levels achievable by latest technologies and the emissions standard set in New Zealand (ie. 1.5 g/kg).”*

As a result the Standards Australia Committee collapsed and has never met since to consider the issue of emissions for wood heaters. However, in a recent media release¹⁰ the Australian Home Heating Association (AHHA) has claimed that wood heaters *“exceed the most stringent Australian Standards.”* This is despite the fact, as stated above, the current Australian standard is considered out of date. In fact, many wood heaters sold in Australia today would be considered so polluting they would be banned in many parts of the world.

The AHHA continues to claim that new model wood heaters are much cleaner and more efficient than older models. This is despite a CSIRO study¹¹ that concluded there was little difference in emissions between old and new wood heaters when operating under real life conditions. The study was conducted in Launceston, a city with a higher than average awareness of wood smoke pollution after an extensive wood heater education program and buyback scheme lasting several years. The study concluded *“there is not a large distinction in emissions between compliant and non-compliant wood heaters”*.

On the other hand, vehicle manufacturers have accepted health-based emissions standards, despite additional costs. New standards¹² to be fully implemented by 2018 will cut vehicle emissions by as much as 90-percent. This is on top of previous regulations that cut emissions from diesel cars by more than 97 percent. This begs the question if vehicles can be made cleaner and more efficient, then why not wood heaters, especially if wood heaters and not vehicles are the major source of air pollution in Canberra and other Australian towns and cities.

I believe that for past several years the Australian wood heating industry has been unco-operative towards the introduction of a new national standard for wood heaters and failed to accept, recognise and even denied the impact wood heaters and wood smoke pollution in urban areas and on public health.

I support and suggest the following measures to reduce domestic wood smoke pollution and protect public health:

⁹ [\(A National Approach to Reducing Wood Heater Emissions, Scoping Paper on Regulator Options.](#)
Page 2, EPHC17/8.1/A)

¹⁰ [AHHA Media Release:](#)

¹¹ <http://www.environment.gov.au/atmosphere/airquality/publications/pubs/emission-factor.pdf>

¹² [New Pollution Standards for Vehicles](#)

- 1. The setting of a new emissions standard for all new wood heaters based on the testing and results from real life operations.**
 - a. When setting a new standard for wood heaters it must be taken into account that studies have found that new model wood heaters have been found to be just as polluting as older models when operated under real life conditions¹³. When four models were tested in NZ that conform to the proposed "new standard" their real-life emissions were worse than the average Australian model.
- 2. Make the removal of all non-compliant wood heaters a condition of sale of all residential properties in urban areas of Australia (including wood heaters installed in outdoor entertainment areas, garages etc.)**
 - a. This is to speed up the process of disposal of wood heaters that do not comply to the current standard (AS4013) or any new standard.
- 3. Declare the installation of a wood burning heater a major alteration to a residential property requiring the notification of surrounding neighbours and the agreement and approval of at least nine neighbours (front, rear and either side)**
 - a. Smoke from a wood burning heater has a major impact on those who live in the vicinity of one (neighbours at side, front and rear). The smoke can change the general amenity of the neighbourhood. It is therefore reasonable that other people living in the same vicinity should have a say a change to a property that is likely to impact on them, their health and that of their family.
- 4. Set a date by which time all non-compliant wood heaters must be removed from all residential properties within the urban areas of Australia (including wood heaters installed in outdoor entertainment areas, garages etc.)**
 - a. This measure would encourage people who wish to continue to heat their homes with wood to change over to cleaner more efficient wood heaters. It will also fast track the removal of out-dated wood heaters, similar to the digital TV switch over.
- 5. Remove all wood burning heaters from government housing and replaced with gas or the highest star rating reverse cycle air conditioning system.**
 - a. This measure will also assist in fast tracking the removal of all non-compliant wood heaters.
- 6. Introduction of an independent testing/policing regime to ensure all new wood heaters meet any new emissions and efficiency standards.**
 - a. This measure is to ensure that non-compliant wood heaters are not installed in all urban areas across Australia.

¹³ [Measurement of real-world PM10 emission factors and emission profiles from wood heaters by in situ source monitoring and atmospheric verification methods.](#)

- 7. Legislation and policing that ensures new standard wood heaters are installed by licensed professionals.**
 - a. This measure is to ensure that new wood heaters are installed properly and safely.
 - b. It will also stop the installation of new wood heaters and second hand wood heaters by weekend handymen.
- 8. Health warnings and safe operating instructions (in that order) clearly displayed on all new wood heaters and attached by means of long lasting/non fading, heat proof metallic plaques fixed to the front.**
 - a. To assist wood heater owners in the correct operation of their devices but more importantly to alert them to the health and environmental impact of incorrect operation of their wood heater.
- 9. Local governments establish a register of all wood heater owners in their areas.**
 - a. To assist the state and local governments in identifying and communicating with wood heaters owners during any environmental and education awareness campaigns.
 - b. To keep track of the number and age of compliant wood heaters.
- 10. Funding for state and local government wood heater buyback programs that include the option to transfer to gas or electric heating.**
 - a. This will assist people who wish to dispose of their wood heaters but cannot afford the initial transfer costs to upgrade to a new wood heater or transfer to gas or electric heating.
- 11. Ban open fire places in all residential areas.**
 - a. Open fires are just as polluting as wood heaters in urban areas.
- 12. Introduction of a reward scheme for the handing in of old non-compliant wood heaters or free dumping at a waste recycling depot.**
 - a. This is designed to provide another incentive for people to dispose of their old non-compliant wood heaters properly and to change over to cleaner more efficient wood heaters or another form of domestic heating.
- 13. If the above measures are not adopted then a moratorium be declared on the installation of new wood burning heaters in urban areas until a new health based emissions standard is adopted in Australia.**
 - a. This measure is designed to force industry and government to finally come to an agreement on a proper test for real life emissions on which to base a new national standard for all wood heaters.

I can not stress the significance of this problem and the need to protect public health. The reduction and even the elimination of domestic winter wood smoke pollution will a significant improvement in air quality in towns and cities across Australia. But more importantly it will go along way in cleaning up our neighbourhoods, protecting the health of the general community and improving the quality of life for those with pre-existing heart/lung conditions.

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January 2013