SUBMISSION REGARDING CONSULTATION REGULATION IMPACT STATEMENT ON WOOD HEATER EMISSIONS - July 2013

SECTION 2: AUSTRALIAN WOOD HEATERS

Bias starts early

I am interested that the review chooses to start from the point of view of the wood heater industry, not from the point of view of health. This sets the tone of the panel's approach and bias. The industry must be protected regardless of the health impacts of their product, it seems.

I note also that nowhere does the report suggest **placing graphic health warnings on each heater in the showroom and on the packaging and attached to the heater itself on delivery.**

This measure, along with **increased taxes to fund the health costs of the products' emissions** (just like cigarettes), would put pressure on the industry, and rightly so.

SECTION 3: STATEMENT OF THE PROBLEM.

The elephant in the room: emission measurements ignore light-up and stoking emissions

This fact is noted on several occasions in the text, but not highlighted as a problem. If a wood burner is to be rated on its emissions, then **all emissions need to be counted, from light-up and stoking** as well as during "best practice" burner operation. Smoke goes into the air as soon as a flame appears in the heat box. It needs to be measured as well. Emissions standards are meaningless unless this is taken into account.

In addition, I noticed that the CRIS paid only the briefest attention to PM2.5s, and to the non-particulate emissions such as ethylbenzine. Wood smoke is a primary source of PM2.5s; diesel emissions are high in pm10s. Both are bad, but the lack of focus on PM2.5s is a concern.

No national definition of "excessive" in relation to woodsmoke

This is a vexed issue and is not addressed by the report other than to say that only options 7-9 would even consider creating a nationwide definition. The NSW EPA http://www.epa.nsw.gov.au/woodsmoke/smokeabate.htm states the following:

excessive smoke *means the emission of a visible plume of smoke from a chimney for a continuous period of not less than 10 minutes, including a period of not less than 30 seconds when the plume extends at least 10 metres from the point at which the smoke is emitted from the chimney.*

That indeed is a lot of smoke, and considerably less than that amount would be capable of causing considerable discomfort and health risk to those breathing nearby.

Let me tell you what is "excessive" to me:
If I can smell smoke, I am breathing particulates.

If I am breathing particulates from any kind of human-generated smoke, I am breathing in excessive pollution.
If I am breathing when I can smell smoke, there is excessive smoke in the air.
I have a sensitive nose, and my preferred baseline for measuring my ability to smell smoke is to go from a smoke-free building into the outside environment. It is the contrast between fresh and smoky air that gives the best indication, subjectively. If I am in an environment where I have become accustomed to the musty smell of stale smoke in the air, then I may not consider the smoke to be excessive until in retrospect when I am back in a fresh environment and can smell the smoke on my clothes and in my hair.
The smell of smoke on my person used to remind me of camping and campfires. Now it reminds me of cancer and lung disease because I have seen fit to educate myself regarding the dangers of wood smoke.
I walk and cycle away from main roads whenever possible, to avoid vehicle pollution. I am unable to avoid all sources of wood smoke no matter where I go during the cooler months.
An example that shocked me occurred in July 2012, on my return to Adelaide from Canberra. The air in Canberra was amazingly clean. I spoke to a couple of locals about it and they stated they were very proud of Canberra's clean air. In contrast, when I stepped off the plane in Adelaide, I was immediately aware of the strong smell of smoke. I waited for a bus for 10 mins – by the time I got on my clothes stank. I noted that the nearest sources of smoke were probably at least 400-500metres away in all directions. This is what smoke is like in calm weather. It stays low and disperses evenly across all available space, fouling the air for everyone. A friend who returned from interstate a couple of days later reported a similar experience.

Smoke affects real people

I would have liked to see considerably more detail of the specifics of the health impacts and risks involved in exposure to wood smoke, in the main body of the CRIS. Where is the citation of recent research pointing to real life effects that wood smoke can have on individuals? This may be a government document, but it is individual human beings who are impacted by wood smoke, and who would be as disappointed as I am at the maximum 18% improvement aimed for here. This is the difference between quality of life, or indeed life at all, and the unpleasant alternatives, for so many people, vulnerable or not.

Let me remind you, that documents published by various EPAs around Australia make it quite clear that there are significant health risks from wood smoke, including exposure to carcinogens such as benzo(a)pyrene:

Benzo[*a*]pyrene is a polycyclic aromatic hydrocarbon found in coal tar with the formula $C_{20}H_{12}$. Its metabolites are mutagenic and highly carcinogenic, and it is listed as a Group 1 carcinogen by the IARC… (my source is only a Wikipedia article, but it is extensively referenced and I have no reason to doubt its accuracy).

The VIC EPA says the following:

"Woodsmoke contains particles so small that, when inhaled, they can cross the lung lining and end up in the blood stream. (See fact sheet on particles)
Woodsmoke also contains other chemicals that can affect our health. The health problems associated with woodsmoke include asthma, chronic lung disease, heart problems and premature births and deaths. Some of the toxic chemicals in woodsmoke are known to cause cancer".
(source:http://www.environment.gov.au/atmosphere/airquality/publications/woodsmoke.html)

A fact sheet published by Hobart City Council states the following:
"Wood smoke emissions are implicated in a range of illnesses including cardiopulmonary disease and cancers. Smoke emissions increase breathing difficulty for susceptible populations such as people with asthma, emphysema, chronic bronchitis and heart disease.
Studies have also been conducted comparing wood smoke to other more commonly known health risks such as cigarette smoke and car exhaust fumes. Comparably, wood smoke contains higher levels of carcinogens and toxins that cigarette smoke; and wood smoke emissions are worse for lung conditions when compared to a similar amount from car exhausts."
Source: health effects of wood smoke

This fact sheet provides useful tables comparing the health effects of wood smoke and cigarette smoke. **For example, a kg of wood burned emits the equivalent number of pm2.5 particles as 225 cigarettes, and as much benzo(a)pyrene as 27,333 cigarettes.** I do hope that the government treats this information with considerably more importance than they did for many years, the numerous deaths and serious health problems caused by cigarette smoke.

EPA-SA activities and their (lack of) effectiveness

I sent this email to the EPA SA on 13th February 2013:

To: EPA:EPA Contact
Subject: air quality 13/2/13

Hello
I noticed this morning that there was a smell of smoke outside that lingered until well after 9am. I was trying to cool and freshen my house before the day heated up, but all I did was make it smell.
I noticed quite a brown haze in the air above Adelaide (I'm in the east, in [redacted]).
Could you please indicate why all stations measuring air quality this morning said the quality was good, when visually it was so bad?
Robyn

The EPA's reply stated:
We did pick indeed up signals from the smoke in our continuous monitoring data, at our station at Netley. My scientific staff are still evaluating some of the information, including data from other stations where it may have shown up and from that, where the smoke probably originated.

The February 3013 EPA monthly report (http://www.epa.sa.gov.au/xstd_files/Air/Report/aq_monthly_feb2013.pdf) shows no evidence of any significant rise in PM10 or PM2.5 particulates at any station on that day. This outcome leads me to **question the accuracy of any information collected/reported by the SA EPA.**

I compare the importance of air quality with the importance of knowing what is happening with our weather.
The Bureau of Meteorology has a comprehensive website that keeps all weather data in an **easily-accessed archive. Every half hour numerous elements are measured and recorded at multiple sites**, including temperature, humidity, rainfall, wind direction, wind speed and atmospheric pressure.

In contrast, items measured by the EPA are reported as a 24 hour average which is not available on the website more than 24 hours afterwards, and a week-at-a-time graph, which is also not archived. PM2.5s are only measured at 1 site, Netley. Here is an example of the EPA's daily report from their website:

EPA Air Quality 24 hour summary : Sunday 30 June 2013, 24 hours up to 16:00

Region	Site		Ozone	Carbon monoxide	Nitrogen dioxide	Sulfur dioxide	Particles (PM10)	Fine Particles	Station Index	Station Air Quality
Western Adelaide	Netley		29	NM	22	NM	40	50	50	Good
North western Adelaide	Birkenhead		NM	NM	NM	NM	61	NM	61	Good

As you can see, the levels of fine particles over 24 hours at Netley, the only Adl site measuring PM2.5s, was twice the WHO recommendation of 25 in a 24 hour period. This has happened on many occasions since I started visiting the EPA site early in 2013. This exceedance of safe fine particle levels does not show up on the EPA's monthly air quality reports. May 2013 had some particularly polluted days due to the wind hardly blowing at all for about a week – pm2.5s are reported to have not exceeded 10ug/m3 on any day that month (http://www.epa.sa.gov.au/xstd_files/Air/Report/aq_monthly_may2013.pdf).

I my experience, there is a peak in smoke around 5pm, a plateau into the evening, and a gradual decrease throughout the night until around 6am. If I were to ask the EPA for objective evidence of this, they would not be able to provide it, as they simply do not measure such essential details.

I know, as a long-term Adelaide resident, that few people burn during the day, and that the air is more smoky at night for approximately 6 months, from the end of daylight saving until its resumption. I know that the air is usually still and musty with smoke in the morning until the air finally clears around 9am or later. I know that when I used to cycle 8km each day across the eastern suburbs to get to and from my 9-5 work, I breathed large amounts of smoke on every trip, particularly on my way home. If I had chosen to drive I would have breathed a whole lot less smoke, but would have contributed my own exhaust pollution, and would have become aerobically unfit. On most days that I breathed excessive amounts of smoke, the EPA's reported air quality ratings were either "good" or "very good". The air I was breathing was of poor quality.
I also know that if I ride my bike to or from the city any time between 5pm and midnight, that my eyes and throat will be sore, and my clothes will stink of smoke. In fact my clothes stink after only minutes outside on a calm night – the best night-cycling weather. Over the years I have taken note of smokiness along my cycling route at various times of night, and my conclusion is that the only time the air is vaguely fresh is if it is windy. Windy nights are uncommon in Adelaide.
I no longer cycle to the city at night during winter to engage in my regular social activities – the air is simply too unhealthy.
I provide this information to you because there is nothing that is **both objective and time-specific**, available via EPA-SA.

if the EPA-SA was able to provide accurate and regular information about the various types of pollution, then policy-makers and regulators would have **meaningful data** on which to base their responses to complaints about wood smoke.
I hope that as part of the new program, the federal government will require a considerably **improved program of data collection and analysis** by EPA-SA than is currently done.

SECTION 4 – RATIONALE FOR GOVERNMENT ACTION

Let's get on with improving our air

I agree absolutely that the government should act on behalf of the health of all Australians. We are an ignorant, emotional bunch who on the whole believe wood smoke is harmless because it is "natural".
(http://www.epa.sa.gov.au/xstd_files/Air/Report/smokewatch.pdf)
The air we breathe is common property, and government regulation to ensure that our air is of the best quality that it is possible to achieve is to me a no-brainer.
It is quite unacceptable, given the health knowledge we now have, to say smoke will blow away eventually, or that a little bit won't do any harm.
The problem is one of health primarily, with wood heaters and their users being the vectors. Therefore, with population Health being the responsibility of the Federal Government, this is a federal issue and should be acted upon federally.

SECTION 5: IDENTIFICATION OF FEASIBLE POLICY MEASURES

Bias toward keeping the wood fire burner and fuel industry happy

The CRIS makes it clear that the negative health impacts of fine particulates from wood smoke are very real, and requiring of action.
Then it goes on to discuss various options regarding the industry that do not include the phasing out of wood heaters altogether.
We find out in the appendices that the topic is considered – and bizarrely one reason not to pursue it is because people may continue using their old, polluting heaters for longer if they are unable to buy a new one. Perhaps the authors do not have any faith in the ability of neighbours affected by such heater to report the excessive smoke that would surely be emitted. The report concludes in the text
"The removal of non-compliant heaters on the sale of a house and bans on installation in critical airsheds were not considered feasible as part of a national program"
I suggest that the federal government set **standards** that state if an area's air quality is bad enough, or smoke-related health costs high enough, on an evidence-based scale, **then banning measures should be activated**. To say that bans are not to be considered at all is a true demonstration of the authors' lack of creativity and inability to think outside the square.
If local jurisdictions want to hold their own phase-out programs they will only be able to if the federal regulations include sufficient bias against the dangers of wood heaters and in favour of human health. The document does not reflect this priority.

The report's Executive Summary states clearly that "poor wood heater operation is usually the main reason for excessive emissions" It suggests that this fact warrants government action, including improving the technology available to wood heater users. Why they say this is a mystery, when we already know that operator shortcomings are the problem**. The only technology that should have any place in this discussion is technology that is "fool-proof" and independent of user error. Until this** (probably impossible) **technology is invented, the use of wood fires should be discouraged in every way possible.**

Taking Nudge seriously

The CRIS briefly mentions the possible use of Nudge theory, otherwise known as Behavioural Economics. I am familiar with the concept, having read part of Thaler & Sunstein's book "Nudge". Nudge uses what we know about the psychology of people's decision and choice-making to achieve better health, wealth and wellbeing outcomes.
The book states clearly in its environment chapter that there are plenty of situations that warrant direct government action, given the far-reaching nature of such problems and the ineffectiveness of expecting individuals to choose to change their behaviour.

Nudge 1: Ban the use of wood fires during daylight

My favourite "nudge" with regard to wood smoke is **banning the use of wood fires during daylight** (shrinking or expanding as the days do likewise) in urban areas.
Why would this work?

- People who feel put out by this regulation would question its need and come to realize that health impacts are real and are being taken seriously by authorities, as they have done previously with incinerators and cigarettes.
- People living near those who used to burn during the day would notice the difference in air freshness and would start to think about how this came to be.
- People, including some of those with a wood fire they have used traditionally only at night, would become more aware of the contrast between air quality during the day and air quality at night. Some would then see more of a need either to burn at night more cleanly, or to get rid of their wood heater altogether.

If it is true that there is no safe level of particulates in the air (http://northpolecleanair.wordpress.com/2011/04/16/brooks-american-heart-association-no-safe-level-of-pm2-5/), then banning burning during the day when most people are active in and outdoors (including doing exercise that causes them to breathe deeply), can only be a positive thing.

Heating during the day for those who are put out by this regulation would be able to have access to heating provided by the sun, through windows, as electricity via solar panels, or via relatively new technology such as:

Solar Hydronics – heating water and the home:
http://www.energymatters.com.au/renewable-energy/solar-power/hydronics/
Solar Source **-** Supplemental Home Heating and Cooling Solution:
http://www.solarsource.com.au/
Solar Lord Hydronic Heating System – solar heated water warms the home:
http://www.solarlord.com.au/index.php?option=com_content&task=view&id=13&Itemid=29
SolaMate - harvests solar energy to heat and ventilate the home:
http://www.sola-mate.com/how_it_works_heating.php
Solar Air Module – sun-heated air is brought into the building to provide solar space heating: http://www.heatwithsolar.com.au/
Solar Venti – similar to SolaMate: http://www.solarventi.com/index.htm

Some of these options would not provide as much warmth as many would like, and thus may need to be supplemented by other forms of heating. However, the more people who know about and invest in such systems, the more R&D will be able to be carried out to improve their effectiveness.
I myself have had a SolaMate for several years. I prefer a cooler house with fresh air coming in daily, rather than a stuffy warm house, and this system suits me perfectly. Except when someone upwind decides to light a fire during the day. Then my system very capably brings in warmed smoky air rather than warmed fresh air – another reason to ban burning during the day.

Nudge 2: Graphic warnings and Nudge 3: Taxes

Other nudges include an idea I mentioned in response to section 2: **placing graphic health warnings on each heater in the showroom and on the packaging and attached to the heater itself on delivery.** Even if users of wood heaters were not moved by the information, passive breathers of wood smoke would have the knowledge to motivate them to act against smoky fires in a way that they do not currently.
This measure, along with **increased taxes on heaters to fund the health costs of the products' emissions** (just like cigarettes), would likely have a positive effect in terms of reduction of wood smoke.

SECTION 7: IMPACT ANALYSIS OF FEASIBLE POLICY OPTIONS

Aiming too low

I was truly shocked to see that the best the CRIS could manage was an improvement over 20 years of just 18% reduction in woodsmoke emissions. This is **completely inadequate**. 20 years is plenty of time for wood fires to be completely or almost phased out in all areas that have reticulated gas and electricity supplies. With woodstoves naturally reaching the end of their lives, banning their replacement with wood burning devices would see reduction in wood smoke pollution of considerably more than a measly 18%. Some may argue that more coal would need to be burned to make the electricity to replace the wood that would have otherwise been burned. I say that if our governments actually support the renewable energy industry, then there will be plenty of renewable electricity to power those homes that switch to efficient heat-pump electric heaters.

Seriously consider phasing out wood heaters

As already stated, my preferred option is to phase out wood heaters.
I would like to know **what options that are <u>not</u> supportive of the wood heater and firewood industries were discussed and dismissed**.
I do know that banning new wood heaters was dismissed partly because this would in the short term have the effect of encouraging people to continue using their old heaters.
As a justification for avoiding banning wood heaters this is as silly as saying we can't go to graphic messages and plain packaging of cigarettes because people might get their own decorated cigarette cases to avoid looking at the graphic photos on the box.
The real ramifications for phasing out wood heaters such as that jobs would be affected were not even hinted at. Do the authors have a (politically convenient) blind spot here?

The phasing out of wood heaters was also considered best left to local jurisdictions. Where does that leave individuals who are bothered by smoke when no-one else seems to be? Who is going to drive the action of local councils to improve health, when they have no involvement in the health budget?
Health is a federal issue, and wood smoke is a health issue.

Therefore wood smoke needs to be handled federally, in cooperation with local councils and state governments.

So I'll ask again: what is the real reason for not considering phasing out wood fires where there are better heating alternatives present?
There are some that argue that if all wood heaters ceased to be used today, that a whole new coal-fired power station would be needed to power the heaters used instead of the wood fires. Clearly wood fires are not going to be phased out in a day, and if the government follows the recommendations of the report there will be no danger of much of a decrease in wood heater use at all. The wood heater and firewood industries will be happy, and individuals in the community will be much the same as they are now, ignorant of the health dangers of wood smoke, and still breathing in fine particulates.

Backyard burning as a comparison

I have done an online search regarding the phase out of backyard burning in South Australia, but have had no success. I do remember that burning at night was banned first. Burning was for several years allowed only between 9am and 3pm, as this was considered the time when pollution from burning was most likely to blow away. Sometime in the 1990s, authorities finally saw sense and banned backyard burning altogether. Anyone who liked to be at home or outside anywhere at all during the day, was no doubt pleased, and no doubt healthier because of this move.
Perhaps the domestic incinerator industry made a fuss and was pandered to for a while prior to and during the phase out. Whatever the case, we never hear anyone saying now that it was unfair that incinerators are no more.
I'm sure there is no need to provide justification for the phasing out of incinerators, but just for fun I provide a link to a 1956 article that concludes that smoke, irritants and odours from domestic incinerators would be an unacceptable side-effect of their use. http://www.tandfonline.com/doi/pdf/10.1080/00966665.1956.10467707

As there are plenty of gas and electric alternatives to wood heating in many areas, I see no reason to not phase out wood heaters in these areas.

Cigarette smoke as a comparison

Our governments have operated at a snail's pace to act to protect the majority from the smoke production of the minority. The introduction of changes such as banning cigarette advertising, banning smoking in public buildings, then much later in restaurants, then finally in pubs, were all well overdue, and seemed from my point of view to be driven only by individuals proving in court that their terminal illness had been caused by exposure to smoke in such environments.
I can only hope that we have moved forward since then, and that governments feel able to act pre-emptively now that we have all the scientific evidence we need to prove the dangers of exposure to any kind of smoke, even at low levels.

User behaviour as the weak link

The report devotes a section (4.2) to outlining market failures so far:

1. lack of individual knowledge about correct burning procedures and health affects on others
2. lack of motivation in heater users to modify their behaviour to achieve less pollution
3. heaters that operate well regardless of user behaviour are not available

These are the problems that are supposed to be addressed by the options for action outlined in the report. **Yet not one of the options directly addresses the weak link of poor user behaviour**.
With cigarettes, smoking in dining areas was addressed by banning it, not by speaking politely with addicted smokers, giving them information leaflets, and asking cigarette companies to make less smoky cigarettes. That kind of approach simply doesn't work.

What exactly does "education" mean?

During question time at the Adelaide information session re the CRIS, I asked a question about what "education" means in the action plan, options 1-9. I was told that the public would be given information about how to use a wood fire correctly. I was told that educating the public about the health dangers of wood smoke would not be a part of the education.
I would appreciate an explanation of why this is so.
This means that **users would still lack the information they lack now, about the dangers to their own and others' health of wood smoke**. The program is doomed to achieve as little improvement as it is aiming for.
If the government was serious about truly putting the health of the population ahead of a few jobs and a vocal firewood industry, it would be aiming for considerably more than a maximum 18% improvement. Perhaps 80% is a more sensible upper limit.

Given the outcomes of this SA SmokeWatch project of 2007, I am not at all optimistic that education is a realistic solution. The summary states:

"In general the survey found that there was a reported increase in the use of efficient wood heater practices among residents in the AHC area since the inception of the Adelaide Hills SmokeWatch program in 2006. However, despite this *there continues to be a perception among residents that wood smoke is not a problem in the AHC area and residents remain generally unconcerned about the negative impact of wood smoke in the area.*
Interestingly, increases in the use of efficient wood heater practices were not reflected in the air monitoring results, where wood smoke levels remained generally consistent over the two winters"
Source:http://www.epa.sa.gov.au/xstd_files/Air/Report/smokewatch.pdf

The Mount Gambier SmokeWatch program (http://www.epa.sa.gov.au/xstd_files/Air/Report/smokewatch_2011.pdf) showed similarly disappointing results, with no decrease in the number of wood heaters during the assessment period, and no significant change in pollution levels.

"More than a quarter of respondents reported being negatively impacted by wood smoke during winter with the most common impact being breathing difficulties and asthma. Other impacts included general health, smell, and affecting
washing on the line. Of those who were impacted by wood smoke, 12% did not take action to reduce exposure. One third of the remaining 88% stayed indoors or did not go outside at night, others used their wood heaters correctly, or closed windows and doors."

The above quote is significant in that nearly ¾ of respondents were not concerned about wood smoke, and that with those that were, they posed restrictions upon themselves such as staying indoors or not going outside at night. This in itself speaks volumes about the ignorance of the general population about the health dangers of wood smoke. It is clearly not enough to simply tell people that there is a better way to burn wood. **They need to be told, with plenty of detail and concrete examples, why burning in a way that creates smoke emissions is dangerous to everyone, including themselves**.

And they need to have information on **the action pathways to follow** should they be bothered by specific wood smoke sources, or general wood smoke in their area. Thus the "they" I refer to means not just people who are purchasing a heater or wood to burn in it, it means everyone who breathes air.

A very personal story

Finally, I bring to your attention this personal story, addressed to a Senate Committee, from someone living in Melbourne who, along with her family, has suffered greatly in the areas of health, wellbeing and sanity. Not only has she suffered along with her children, from breathing difficulties, but all avenues she has taken to get help or redress have failed to achieve any improvements in air quality in this woman's home (my comments in parentheses, and bold highlights added by me).

> *"because my neighbours don't believe there are health problems associated with wood smoke they couldn't see the justification for reducing the smoke. I asked if the environmental officers **could explain the health effects of wood smoke** to my neighbours. The chief officer explained that this was not their role and that they were not instructed by the Victorian EPA to do this – instead their function **was solely about correct operation of wood heaters**. "*

(If this remains the case under the new system, then nothing will have changed).

> *"Education alone is ineffective. It must be backed up with a **properly supported penalty system** for incorrect operation. The workforce that implements this system must be well trained, skilled and empowered to effectively deal with the issue."*

(The report does not mention penalties for incorrect use of heaters nor for sale of substandard heaters).

"I believe that my neighbour's wood heater and operation of his heater (with the exception of the overnight smouldering) ***complies with the current Australian standards****. Unfortunately this is little comfort when we live with ongoing exposure to wood smoke. Frankly I'd much prefer clean air. It is also stressful to have to be in the position of tackling my neighbour about the issue and* ***having to monitor the smoke from his chimney*** *lest he lapse in his operation of his wood heater. The equivalent situation would be if managed tobacco smoking in restaurants by simply relying on smokers to be considerate. And if there was the odd smoker who puffed away a little too much, we then put the onus on non-smokers to complain if they don't like it."*

(The report refers to "excessive smoke" and the fact is that the onus is on the person suffering to provide photographic proof of a significant prolonged smoke plume).

"I think the ***low public awareness about the health impacts of wood smoke pollution*** *plays a major role in being able to address the issue.* ***People have a right to know****.* ***They have a right to know they could be damaging their children's health by using a wood heater, that they could be exacerbating their own health problems and that they could be contributing to health problems in their neighbourhood.***
There needs to be a broader education campaign to ensure the health issues associated with woodsmoke becomes general knowledge."

"I ask the senate committee to consider the plight of direct and near neighbours of households who use wood heaters as their sole source of heating. I believe that my situation is far from isolated and is repeated many thousands of times over around the country. Many people don't know who to go to, or that anything can be done. Or they go to their local council and find the response inadequate. They attempt to seal up their homes, they buy air filters, or they end up having to move. Or like me they
make submissions to government enquiries. Or perhaps they ***assume like many people that the smoke is harmless because it comes from a natural source****. So they simply live with it, unaware of the potential long term damage to their health.*

My children should have the ***right to clean air in their own home****. Even at their school I have noticed a house close by with a wood heater that blows smoke over the playground where the children run around and play. Attempting to deal with the smoke from our neighbour's wood heater has caused us considerable stress. It has aggravated relations with my two neighbours and has cost us a great deal of money and time. But worst of all it has had a detrimental impact on our children's health. I find it very distressing to feel so* ***powerless to protect my children's lung health****. In addition I have learnt not to talk to people about the issue. Because the health impacts of wood smoke is not general knowledge people are quick to think you must be a 'health nut', or an over anxious parent. I have approached all the authorities, but have found that* ***the options available to reduce the risk of particle pollution from wood heaters for myself and my children are totally inadequate****."*

http://webcache.googleusercontent.com/search?q=cache:GoToAJRSz0MJ:https://senate.aph.gov.au/submissions/comittees/viewdocument.aspx%3Fid%3Db5699e32-ad4b-4155-8ed3-938e709e5024+&cd=6&hl=en&ct=clnk&gl=au

My conclusion

So what is the problem with wood smoke?
Is it a problem of pollution in the air that gets into people's lungs, or is it an issue with wood heaters not being clean enough?
If I was in charge, I would treat the health problem as what it is - a **health problem**.
If people are at risk of exposure to asbestos, we remove the source of contamination, we don't tell the owner of the property containing asbestos dust to reduce the dust if they feel in the mood to do so, because it isn't nice.
If a smoker gets pneumonia, we don't tell them to continue smoking but to use light cigarettes, or inhale less.

"No safe exposure level for fine particulates" means aiming for zero exposure wherever possible.
It means carefully monitoring particulate levels widely and frequently throughout the day, and publishing online with high quality, easily-accessed archives.
It means setting goals to **phase out all sources of fine particles** that are possible to phase out.
Phasing out wood fires will not be popular with the wood burner or firewood industries, nor with some operators of fires. But wherever there are heating alternatives, this must be given a high priority. The people whose livelihoods are affected will find new employment, just as did the operators of drive-in theatres and the manufacturers of domestic backyard incinerators.
Education on correct heater use and on the health dangers of smoke pollution should be interim measures only, while the sources of smoke are still present. They should be carried out intensively initially, to raise awareness that would then have a flow-on effect to create demand for buy-back programs and similar.
Banning burning during daylight hours initially, would be the perfect companion to the health-effects education program, and would bring immediate improvements in air quality to all who breathe during the day.

Appendix 1

I visited a discussion forum headed with a letter from someone in Penrith grumbling about wood smoke around his home.
Source: http://councilgripe.com/content/wood-fireplaces-and-selfish-homeowner

Answers from respondents included the following:

"I think you should harden up you sook. Oh runny nose and sore eyes.....boo hoo. Get a life and turn off your air con during summer."

"I will keep on lighting a fire cause that's natural....."

"My housemates and I have been using a fire place this winter for fear of the electricity bill from an electrical heater."

"As for the smell bothering you outside, that's a personal preference, I used to love how the outdoors smelled in winter when other houses used their chimneys... As for the carcinogens caused by wood smoke, nearly every thing around nowadays is carcinogenic. ."

"Wood smoke is a natural occurrence so it doesn't make much sense to deprive everyone of a slow combustion fireplace only to be confronted by our annual round of national park fires in summer."

And some of the few replies in favour of wood smoke controls:

"I know exactly how you feel. And I hate to say that there appears no way to stop this pollution. The councils do not listen. Everybody ignores your complaints including the neighbours.
As I reply to your post feeling congested, coughing and spluttering from my neighbours constant smoke that manages to seep through thickly into our house also. I feel the only course of action is to start an action group to stop this appalling practice of polluting a person's air.
The laws for noise pollution and lights shining into peoples houses, overshadowing someone's house with your tree are enforced by a council even though these problems do not effect a persons health and you can do something about it. But polluting someone's air source which that person has no control over it is just too bad. My sympathy goes out to you, but just know you're not alone."

"When you have a neighbour who appears all concerned but feels there is little they can do it is near impossible to resolve."

I realize the above is not an accurate or representative survey, but the quotes do indicate a variety of reasons why people will be reluctant to do anything about the emissions from their wood fire... apart from the fact that chopping and lugging the wood and lighting the fire is quite enough for people to do – expecting them to check outside for smoke and adjust their burning behaviour accordingly, is just to much to ask.