cleanairtas

Submission to Senate Standing Committees
Community Affairs

Inquiry into the impacts on health of air quality in Australia.

Community Affairs References Committee
PO Box 6100, Parliament House Canberra ACT 2600
community.affairs.sen@aph.gov.au

Dear Committee Members,
Thank you for the opportunity to make a submission in relation to
(a) particulate matter, its sources and effects;
(b) those populations most at risk and the causes that put those populations at risk;
(c) the standards, monitoring and regulation of air quality at all levels of government; and
(d) any other related matters..

"Particulate pollution is the most important contaminant in our air…
We know that when particle levels go up, people die." – Joel Schwartz, Ph.D., Harvard School of Public Health, E. Magazine, Sept./Oct. 2002.
Well I almost did and there were many days that I wished I had!

Deliberate pollution has been going on in Tasmania for the last 50+ years when forestry started burning but take 2008 for example. Pernicious smoke covered the island and I ended up with severe asthma whilst it continued despite being on life-support oxygen and other prescription medications. The particulate matter caused blood clotting, below the knee DVT, and I was in accident and emergency department with pulmonary emboli.
Deliberate polluting acts like this continue to go on today.

My life will never be the same even if the air clears tomorrow. However, others would not have to go through what I have been through and I am working at not going through it again either.

You can read my account of how air quality impacts on my health
at http://www.cleanairtas.com
And I am only one.

About cleanairtas
After working in state health for a number of years and hearing others were experiencing very poor health outcomes as a result of raised particulate levels, a website http://www.cleanairtas.com was set up in 2008. It was quickly linked worldwide by other respected sites which provide public education about the medical hazards of exposure to wood smoke and other fine particulate pollution, e.g. http://burningissues.org/car-www/index.html and http://woodburnersmoke.net/

Cleanairtas website is going through a major revamp and will be updated later in 2013

(a) Particulate matter, its sources and effects;
For many years in Tasmania we have ridden on the back of what the CSIRO have told us, “Cape Grim has the cleanest air in the world” which loosely became translated into, “Tasmania has the cleanest air in the world”.

I can attest to the fact that Tasmania does not have the cleanest air in the world. At times we have some of the filthiest air in the world and mostly it is deliberately caused.

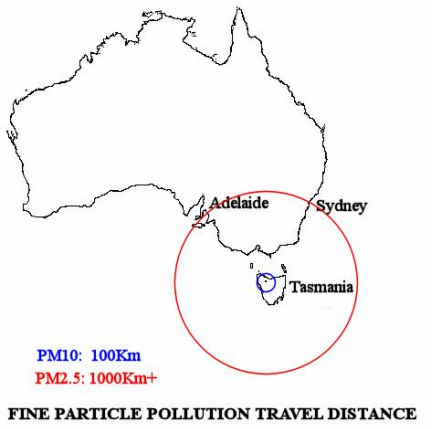
Here is a picture taken on the 20/5/2011. It shows the township of Exeter, close to where I live, covered in PM2.5 particulate matter. This is what I have to breathe when I go to see my doctor to get life-saving prescription medication because I cannot breathe.
Visibility was reduced to below 1Km. At this level it is harmful to all groups. The PM was at breathing height. (Save the picture, or click and drag to view larger).

Cape Grim Base-Line Air Monitoring Station can rightly claim it has some of the cleanest air in the world because it only measures air coming into one quadrant from across the Southern Ocean. PM monitoring is switched off at other times. See below.

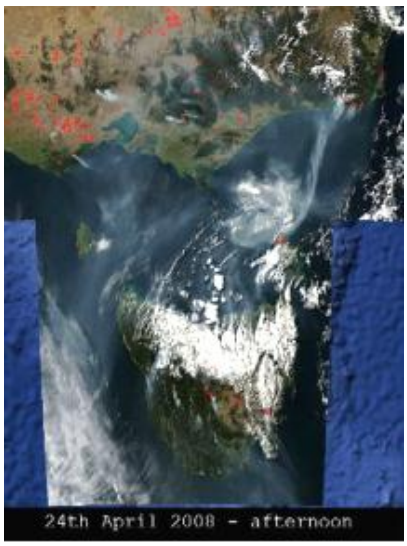
EPA air quality monitors regularly show degraded air quality a short distance away from Cape Grim.

The PM measuring segment at Cape Grim.

Tasmanians are not only effected by particle pollution being generated from within their own state, they are subjected to smoke and sand storms coming in from mainland Australia.
Pm10 can travel 100 Km and stay airborne for up to a day.
PM2.5 can travel 1000Kms+ and remain airborne for up to a week.

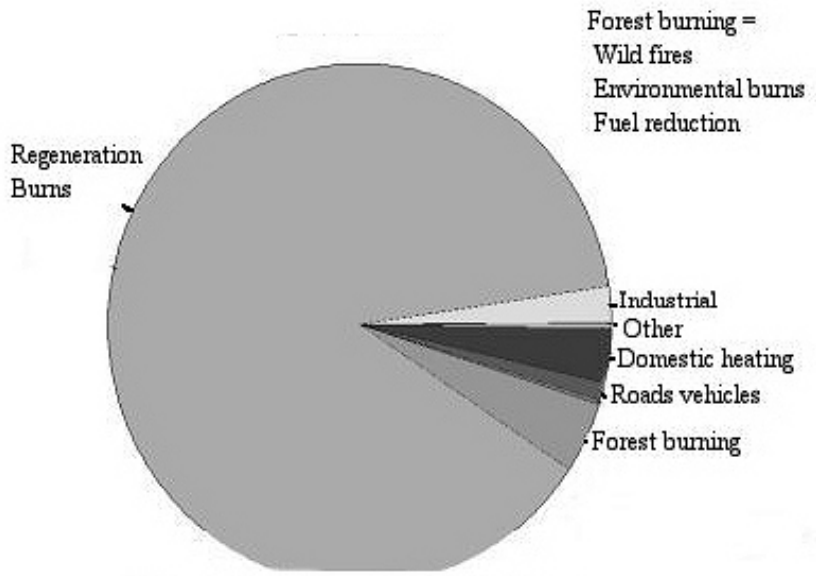


FINE PARTICLE POLLUTION TRAVEL DISTANCE



EPA Tasmania - Air Technical Report #9 shows smoke coming into Tasmania from Victoria.

In 2008 EPA Tasmania revised the National Pollution Inventory figures to show a true estimate of particle emissions to the Tasmanian airshed.



Revised pie chart on 2008 figures

This is an estimate of particle emissions to the Tasmanian airshed for 2008.
The figures will vary from year to year for a number of reasons.
The full EPA report can be found here

The greatest component of wood burning 'smoke' is the harmful PM2.5 fraction. PM2.5's can travel deep into the lungs and stop there. Gaseous toxins can attach themselves to this particulate matter and cross-over into the blood stream. Particulate matter can set up an inflammatory response in susceptible groups, i.e. the young, the elderly, those with respiratory disease and those with cardiac disease to name a few. Asthma and COPD attacks can be brought on; the blood can thicken causing cardiac arrest in some people, or below the knee clots which can result in pulmonary emboli in others.
Particulate matter shortens lives. *"The elderly, newborns, children, adults who exercise rigorously and those with existing heart and lung disease are most at risk for premature death due to particle pollution exposure."* (American Lung Association, "The Perils of Particulates")
Go here for more details of referenced harmful effects of wood smoke. Additional peer reviewed studies are being released at a frequent rate showing negative health effects of increases in PM.

In Tasmania the main sources of PM known to effect people are forestry burns (regeneration burns and, fuel reduction burns), land clearing, domestic heating. The main burners are the forest industries (both government and private), Tasmania Fire Service, Parks and Wild life, Councils, farmers and other land occupiers.

"So it means that even though we generate smoke, we can't absolutely guarantee that there will be a direct benefit as a result of it."- Tony Blanks (Forestry Tasmania) ABC Stateline 20/8/2010

Domestic heating is responsible for raised levels of fine particle pollution in locations such as Launceston and Geeveston. It has a lot to do with the number of heaters and temperature inversion layers.
A recent study undertaken by the CSIRO for Forestry Tasmania shows this fact, but it should be remembered that other towns in the same Huon district showed much better air quality. The wood smoke pollution was 'highly specific" to one location. This study should not be generally interpreted, as it was in some of the media, that wood heater smoke is worse/greater than forestry smoke in Tasmania.

(b) those populations most at risk and the causes that put those populations at risk;

Smoke from interstate: Capable of adding significant amounts of PM to our airsheds. Most at risk are susceptible groups, i.e. the young, the elderly, those with respiratory disease, and those with cardiac disease. Others at risk can be found here.

Smoke from large scale burning: Forest industries smoke from over 50 years of deliberate burning has put large sections of the Tasmanian population at risk, not just susceptible groups.
The risk will continue for years as people do not just get better when the smoke stops.

Smoke from back yard burning: On block sizes of 2000 square meters or more, a burner is free to burn smoky green waste. One such burn can smoke out a whole community.

Domestic wood heaters: Smoke can be site specific as previously mentioned and cause harm to a great many people.

Dust storms from interstate: Can affect a large numbers of Tasmanians.
Affects susceptible groups first and even healthy people after minimal exposure.

Wild fires: PM can affect susceptible groups. Toxic chemicals applied to the ground in previous times can be released during burns and attach themselves to the smoke particles that people in far distance places can breathe, and these chemicals can contaminate their lands. The same applies with dust storms or forestry burns.

Diesel vehicles: Diesel fumes can cause instant breathing problems for susceptible groups. Any exposed people forced to travel on the same route are put at risk eg, walkers, cyclists, joggers.
Canada has fitted catalytic converters and idling devices to successfully lower emissions from diesel vehicles.

(c) The standards, monitoring and regulation of air quality at all levels of government;

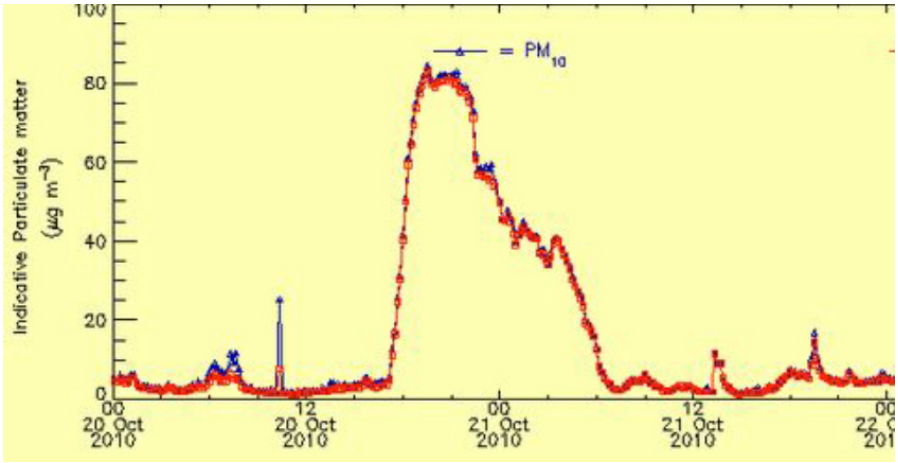
c.i) Standards/Acts/regulations/goals:

National Standard
At present we have the Ambient Air Quality National Environment Protection Measure (AAQ-NEPM). http://www.comlaw.gov.au/Details/C2004H03935

Ambient Air Quality NEPM Goal:
To achieve National Environment Protection Standards as assessed in accordance with (set) monitoring protocol.
Desired Environmental Outcomes:
Ambient air quality that allows for the adequate protection of human health and well-being.

If the Protection Standards are generally being met in accordance with (set) monitoring protocol, as they are in Tasmania, then why are the desired environmental outcomes NOT being met?

In Tasmania we do not at times have *Ambient air quality that allows for the adequate protection of human health and well-being.*
At present the PM10 Standard is a 24 hour average based standard.
The PM2.5 "standard" is only a reporting standard.
Burning practices are being carried out to fit in with the NEPM Standard which means people can be inhaling toxic smoke for many hours of the day and night, day after day.



The 24 hour average runs from midnight to midnight (00 on this EPA graph)
Spreading the readings over two days does not alter what people breathe.
A 1 hour PM Standard is required to prevent these prolonged high levels of air pollution.

Schedule 2 Standards and Goal

Table 1: Standards and Goal for Pollutants other than Particles as $PM_{2.5}$

Column 1 Item	Column 2 Pollutant	Column 3 Averaging period	Column 4 Maximum concentration	Column 5 Goal within 10 years Maximum allowable exceedences
1	Carbon monoxide	8 hours	9.0 ppm	1 day a year
2	Nitrogen dioxide	1 hour	0.12 ppm	1 day a year
		1 year	0.03 ppm	none
3	Photochemical oxidants (as ozone)	1 hour	0.10 ppm	1 day a year
		4 hours	0.08 ppm	1 day a year
4	Sulfur dioxide	1 hour	0.20 ppm	1 day a year
		1 day	0.08 ppm	1 day a year
		1 year	0.02 ppm	none
5	Lead	1 year	0.50 µg/m^3	none
6	Particles as PM_{10}	1 day	50 µg/m^3	5 days a year

Table 2: Advisory Reporting Standards and Goal for Particles as $PM_{2.5}$

Column 1 Pollutant	Column 2 Averaging Period	Column 3 Maximum Concentration	Column 4 Goal
Particles as $PM_{2.5}$	1 day	25 µg/m^3	Goal is to gather sufficient data nationally to facilitate a review of the Advisory Reporting Standards as part of the review of this Measure scheduled to commence in 2005
	1 year	8 µg/m^3	

For the purposes of this Measure the following definitions shall apply:

(1) Lead sampling must be carried out for a period of 24 hours at least every sixth day.

(2) Measurement of lead must be carried out on Total Suspended Particles (TSP) or its equivalent.

(3) In Column 3, the averaging periods are defined as follows:
- 1 hour clock hour average
- 4 hour rolling 4 hour average based on 1 hour averages
- 8 hour rolling 8 hour average based on 1 hour averages
- 1 day calendar day average
- 1 year calendar year average

To give *adequate protection of human health and well-being:*

i) ***Rather than just a national reporting standard, a full PM2.5 compliance Standard needs to be created alongside the PM10 Standard, and***

ii) ***There needs to be a 1 hour Standard created for both PM10 and PM2.5, and***

iii) ***Be enforceable in every State and Territory.***

iv) ***Gravimetric air monitors are required to be used at present. The Standard needs to be altered to allow near real-time particle counter type air monitors to be used.***

This roller-coaster ride of unacceptable PM levels that just duck down to fit in with a 24 hour daily average needs to be covered in a national 1 hour standard.

NEPMs in Tasmania
In Tasmania, NEPMs are State Policies in accordance with section 12A of the *State Policies and Projects Act 1993*. **They are generally not directly enforceable** and are implemented using a variety of mechanisms and approaches depending on the particular contents of each NEPM.

TASMANIAN LEGISLATION:

Environmental Management and Pollution Control Act 1994 (EMPCA).
The key legislation in respect of air quality is the *Environmental Management and Pollution Control Act 1994*. http://epa.tas.gov.au/policy/empca

The fundamental basis of EMPCA is the **prevention, reduction and remediation of environmental harm.**

While this is defined very broadly in section 5 of the Act as:

> *"any adverse effect on the environment (of whatever degree or duration) and includes an environmental nuisance" (the latter is defined as 'the emission of a pollutant that unreasonably interferes with, or is likely to interfere with, a person's enjoyment of the environment')".*

Section 53A of the EMPCA states:
53A. Evidentiary provision for environmental nuisance **.**
If, in a proceeding for an offence against section 53(1) or (2), an authorized officer or a council officer gives evidence, based on the officer's own senses, that noise, smoke, dust, fumes or odour was emitted from a place occupied by the defendant and travelled to, or was, or was likely to be, detectable at, a place occupied by another person, that evidence is prima facie evidence of the matters so stated.

Environment Protection Policy (Air Quality) 2004.
The Environment Protection Policy (Air Quality) 2004 provides a framework for the management and regulation of both point and diffuse sources of emissions to air for pollutants with the potential to cause environmental harm.

The Environment Protection Policy (Air Quality) 2004 provides a framework for the management and regulation of both point and diffuse sources of emissions to air for pollutants with the potential to cause environmental harm. The Policy was made on 13 December 2004 and came into effect on 1 June 2005.
The environmental values to be protected under the Air Quality Policy are:
the life, health and well-being of humans
the life, health and well-being of other forms of life
visual amenity.

Compliance and enforcement provisions.
http://epa.tas.gov.au/policy/compliance-policies
The bodies charged with administering compliance regulation also need to be looked at. This matter is covered in more detail further on in this submission.

Solid Fuel Heater and Backyard Burning Regulations.
The *Environment Management and Pollution Control (Distributed Atmospheric Emissions) Regulations 2007* prescribe a number of requirements relating to the manufacture, importation, sale and operation of solid fuel heaters, as well as restrictions on backyard burning.

Backyard burning can last for days when it is continually fed with green waste or left to smolder. This PM does not usually record on any air-quality monitors.
(Save the picture or click and drag to view larger).

C.ii) Monitoring and Regulation of Air quality:
EPA Tasmania possibly does the best in the whole of Australia in relation to air quality monitoring.
Go here to view EPA Tasmania – Air monitoring.
Note: BLANkET real-time air quality readings are only indicative because gravimetric methods were not used.

Compliance and interpretation of the Tasmanian regulations seems to be the biggest problem at State level and at Local Government level:-

Backyard burning on blocks over 2000 square meters:
Attachment #1 was handed to the state Minister for Environment, Parks and Heritage (Brian Wightman MP) in Launceston on the 15/6/2012.
It highlights significant problems affecting our air quality in this state.

After stating he understood the problems and would look into them, despite numerous contacts with his electoral office, Minister Wightman has chosen not to respond to us since June 2012. I believe it is inexcusable for a person in this position to ignore people suffering further episodes of smoke inhalation.

The EPA and Councils have evidently received differing legal advice and as a result neither will administer any regulations when it comes to do with backyard burning on blocks greater than 2000 square meters.
A motion for a smoke bylaw was rejected by my council after they received advice saying it was inconsistent with the environmental laws we actually have in this state. Further, calls for help when people have been troubled by back yard burning have been refused by my council because they believe it is only their job to administer wood heating. To compound the problem the EPA has advised they will not act either because their legal advice differs to that of the council.

Below is a letter in part from Mr. Alex Schaap, Director, EPA Tasmania Nov.5.2012:-

"I have now had the opportunity to further consider the issues around the regulation of open burning and the smoke generated from that burning.
I have reviewed the advice provided to Council and taken further advice. It is clear to me that a Council is able to make bylaws regarding such burning and it is clear to me that it is open to Council to prosecute in the event that burning occurs in a way which causes nuisance.
Unfortunately this conclusion is at odds with the contrary legal advice provided to the Council and hence it feels unable to act…
Until this matter is settled, the most productive path in the short term may be for you to engage directly with those undertaking burning in your area and request them to desist or do so in a manner which does not cause smoke nuisance."
Why do we have environmental laws and an EPA?
This has the potential to put me at personal risk.

Despite asking, no time-frame has been given to sort this serious matter out.
Mr. Schaap replied to me in his capacity as EPA Director. The EPA Board has not acknowledged any of my correspondence.

ATTACHMENT #2: Go here to read the EPA's Distributed Atmospheric Emissions Regulations 2007 – Implementation Evaluation Report 2010
It clearly states:
Responsibilities
Local government is currently responsible for implementing the following aspects of the regulations (the 2008 survey of councils dealt only with these aspects):
- sale of second-hand heaters;
- modification of heaters in service;
- visible smoke emissions from heaters, fireplaces, etc.;
- backyard burning; and
- permitted fuels for heaters and backyard burning.

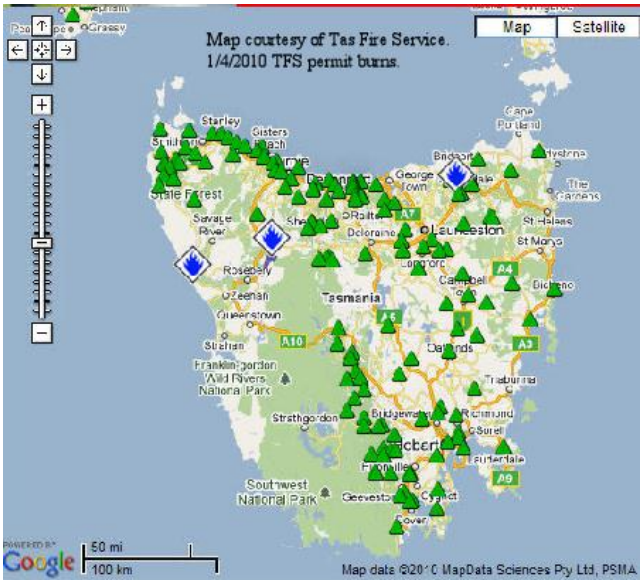
Then we have Local government's response….
All councils (including those that did not respond to the survey) and the LGAT were provided with a copy of the report and the LGAT was asked to provide a combined response. A response was received in August 2009, in which the LGAT advised as follows.
Councils generally do not have the resources to be proactive in this area. While they will respond to complaints, proactive implementation is a low priority.
- Councils do not see it as their role to educate the public about the regulations.
- Council officers are likely to continue to use existing enforcement regimes under the EMPCA (in addition to, or instead of, the regulations).
- In relation to community public relations, councils are in an invidious situation while large scale burn-offs continue.

At this point in time, the EPA and councils refuse to answer calls for help with smoke being inhaled by Tasmanians from burns on blocks over 2000 square meters.

National environmental laws need to be enacted to prevent this kind of inaction going on between the EPA, local councils, and other agencies. Whilst it is allowed to continue, people's health is seriously being put at risk.

Tasmania's DHHS, Public and Environmental Health Department:
"Our role is to monitor the health of the Tasmanian population, and put in place programs to protect or promote health."
"We do not have any regulatory role in relation to environmental smoke."

Tasmania Fire Service:
The Tasmania Fire Service is only responsible for enforcement of the Fire Service Act 1979. -TFS Fire Management Planning Officer Dec.3 2010.
The other regulatory requirements the TFS refer to are the responsibility of the relevant department or council.
"…it is the responsibility of the other departments and councils to enforce regulations for which they are responsible."
TFS conducts burns and issues fire permits for land owners to conduct planned burns. TFS can issue any number of permits to burn.
Registered burns can be taking place whilst the airsheds are saturated with smoke from additional major burns.
"Permit officers are not required to consider other burns in the State and there is no mechanism which could allow them to do so"
Outside the Fire Permit Period it is open slater burning. Registration is not compulsory with the TFS.
Like our DHHS Environmental Health Department, TFS only participates in the FPA's Coordinated Smoke Management Strategy as an observer.



Tasmania Fire Service permit burns.
http://www.fire.tas.gov.au/Show?pageId=colGMapBushfires
(Save the picture or click and drag to view larger)

(d) Any other related matters.

With all the written Regulation it would appear we should have good environmental protection in relation to particulate matter in Tasmania. However, the facts are it simply does not 'fit the bill' in many situations and people are suffering, and will continue to suffer into the future, whilst there is no let-up from people being forced to breathe large amounts of deliberate air pollution.

No burn, no matter how it is started, should be allowed to just burn itself out. This smouldering can go on for very lengthy periods of time; days, weeks, months in some circumstances. The burns should be blacked out as quickly as possible to mitigate smoke.

Population health must become #1, in addition to protecting property and assets. Property and assets can be replaced our health cannot.

Agencies such as forestry, TFS, Parks, councils, etc. should primarily act as fire extinguishers, not fire lighters.

In many situations there is absolutely no need to burn and cause toxic particulate matter. Other proven and cost effective alternatives are available and should be used. http://cleanairtas.com/alternat.htm

Coordinated Smoke Management Strategy:

In Tasmania we have a Coordinated Smoke Management Strategy (CSMS) run by the Forest Practices Authority.

It is absurd that the formula for lighting large scale planned burns in this state is worked out around allowing the MAXIMUM amount of smoke to be released into an airshed.

When the calculations fail it all goes tragically wrong. http://www.abc.net.au/news/stories/2010/04/24/2881845.htm?site=hobart

Wood heaters:

Wood heaters are a problem in (parts of) Tasmania where there are temperature inversion layers.

Many of the older heaters in Launceston have been removed as a result of the heater buy-back program but in recent times anecdotal evidence would suggest wood heaters are being installed more often again rather than installing heat pumps for example. The reasons cited are the high cost of electricity, there is no alternative available, and because of the ambience of wood heating which local people have been brought up with.

We have a state of older and sicker people, where there is more unemployment and because of this people are confined to their homes and their heating requirements are greater. Cold and mold are asthma triggers so their homes need to be warm and dry.

Health wise, we are a small bit fortunate that the new wood heaters being installed have to meet lower emissions targets but this is still too high at 4g/Kg of wood burnt **and it needs to be lower than this; certainly within the 1 – 2 g/Kg range in urban areas.**

It is illegal to sell wood heaters that do not comply with current standards and yet I believe they are openly being advertised for sale.

The EPA says, Local government is currently responsible for implementing the following aspects of the Regulations:

- sale of second-hand heaters.

Many people do not understand wood heater emission and efficiency standards and are happy to buy whatever looks good and will heat the area they require.
Heaters that do not comply with current standards should not be sold in Tasmania.

3 out of 4 people suffer from a chronic health condition:
Our governments have had years to fix this harmful pollution.
In Tasmania 3 out of 4 people suffer from a chronic health condition like cancer, cardiovascular disease, asthma, and diabetes **that prevents them from working.**-Health Minister Lara Gidding's statement to Damien Brown-Mercury 2/12/2009.
1 in 7 children are diagnosed with asthma -Asthma Foundation.
All these diseases have been linked to worldwide studies into particulate matter.

Susceptible people additionally affected:
Susceptible people affected by particle pollution in Tasmania are additionally affected by increased power charges.
Electricity costs have risen to run essential electrical medical equipment at home such as air purifiers, or medical equipment such as nebulizers and oxygen concentrator machines and yet the government rebate for life-support equipment was not raised at all this year.
The electricity rebate for life-support equipment needs to be raised immediately as it is becoming increasingly impossible to use this equipment in the manner prescribed by specialists.

Summary:

- My life has been changed because of particle pollution.
- Particulate pollution is the most important contaminant in our air…
  We know that when particle levels go up, people die.
- Tasmania does not have the cleanest air in the world.
- Particulate matter is generated in Tasmania and also comes across from the mainland.
- PM2.5 can travel over 1000km and be airborne for up to a week.
- Burns and dust storms can transport toxins great distances.
- Forestry can't guarantee a direct benefit after causing harmful smoke.
- Domestic heating is responsible for raised levels of fine particle pollution.
- Heaters that do not comply with current standards should not be sold.
- Wood heater emissions need to be 1-2g/Kg. 4g/Kg is too high.
- One backyard burn can smoke out a whole community.
- The EPA and Councils in Tasmania will not administer backyard burning regulations on blocks over 2000 square meters in size.
- Real-time air quality readings are only indicative.
- DHHS does not have any regulatory role in relation to environmental smoke.
- Tas Fire Service is only responsible for the Fire Service Act.
- Fire permit officers are not required to consider other burns in the State.
- Population health must become #1 priority, as well as protecting property and assets.
- The Coordinated Smoke Management Strategy allows for maximum smoke levels into an airshed.
- A PM2.5 compliance Standard needs to be created alongside the PM10 Standard.
- A 1 hour compliance Standard needs to be created for both PM10 and PM2.5
- The gravimetric standard for air monitoring needs to be changed to allow real-time AQ readings.
- In Tasmania 3 out of 4 people suffer from a chronic health condition that prevents them working.
- The electricity rebate for life-support equipment needs to be raised.

Acknowledgements:
EPA Tasmania - Air
NASA Modis satellite imaging.
Tasmania Fire Service
CSIRO/BoM

This submission should be read in conjunction with http://www.cleanairtas.com

As someone effected by particulate matter I would be happy to attend a public hearing in Launceston to answer any questions the Committee might have.