

**CONSULTATION REGULATION IMPACT STATEMENT FOR
REDUCING EMISSIONS FROM WOOD HEATERS**

Summary Report of Submissions

September 2013

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BACKGROUND

In 2008, the Environment Protection and Heritage Standing Committee agreed on the need for a nationally consistent approach to wood heater emissions management. The National Environment Protection and Heritage Council (EPHC) engaged a consultant to assess policy options to reduce emissions from wood heaters in Australia, and to prepare a consultation regulation impact statement (RIS).

The Australian Government has also identified air quality as a priority under the Standing Council on Environment and Water (the Council) and is working with states and territories to develop and implement a National Plan for Clean Air to improve air quality and community health and wellbeing. The Council has replaced the EPHC and first met in September 2011, where existing emissions reduction projects, including the wood heaters project, were brought under the work program for developing a National Plan for Clean Air.

The National Plan for Clean Air will bring together a strategy for responding to the review of the National Environment Protection (Ambient Air Quality) Measure, including the revision of air quality standards and development of an exposure reduction framework, and a robust framework for identifying cost effective actions and implementation arrangements to reduce air pollution. It will be delivered to COAG by the end of 2014.

The first stage of the plan focuses on particulate matter as an air pollutant. Particulate matter was chosen as a priority because of the potential size of health benefits to be gained, the current population exposure to particulates in the atmosphere and the range of cost-effective actions available to address particulate emissions. Further details of the plan can be found at www.scew.gov.au/strategic-priorities/national-plan-for-clean-air.html .

The RIS on the reduction of wood heater emissions was released for public consultation on 11 April 2013 and submissions closed on 15 July 2013. Fifty nine submissions were received from a cross section of stakeholders, including from government, industry, academic and community organisations and individuals. This document gives a summary of the submissions received.

PUBLIC CONSULTATION

Public meetings were held to provide an overview of the consultation RIS and the process for making a submission. The following communities were covered:

Tuggeranong, ACT - 21 May 2013	Armidale, NSW - 14 June 2013
Melbourne, Victoria - 30 May 2013	Wagga Wagga, NSW - 25 June 2013
Launceston, Tasmania - 11 June 2013	Perth, WA - 27 June 2013
Sydney, NSW - 13 June 2013	Adelaide, SA - 28 June 2013

Eighty people attended the public meetings. A number of submissions criticised the meeting promotion and venue choices in some cities, stating that the small turn-out was not an indication of the depth of feeling, or lack thereof, on the wood heater pollution issue.

In setting up the public meetings, the Commonwealth contacted an extensive list of stakeholders, advertised in newspapers, sought coverage in community websites and promoted the events as much as possible, including to community radio services where these were available. More details on the public meetings is available at Attachment C.

METHODOLOGY

Individual submissions were analysed to identify views on the nine options presented in the consultation RIS as well as the main issues of concern. The responses were classified according to the stakeholder group they represent to help analyse the broad range of positions and opinions expressed in the submissions. Analysis of the responses to the questions posed at the end of each chapter were also undertaken, although only 16 submissions responded to these questions. The stakeholder groups that made submissions are sorted into the following categories.

- state government agencies
- academic/research/professional organisation
- local government
- community organisations
- industry body/business
- individuals.

The main themes common across the submissions are sorted into the subject headings listed below. Aspects of each of the themes that are common across the submissions are highlighted in the topic headings below.

This report discusses the themes expressed in the submissions in the following categories:

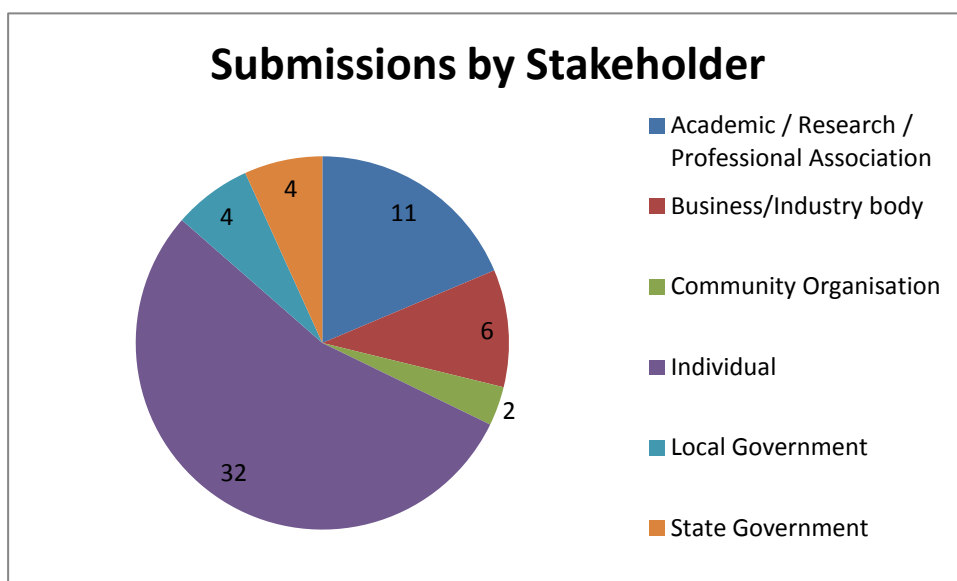
- In-Service Wood Heaters
- Data Issues
- Health Impacts
- Regulation
- Banning of Wood Heaters
- Other views

A list of public submissions is also presented at the end of this report, identifying the stakeholder categories to which the submissions belong. Access to the submissions can be found at <http://www.scew.gov.au/node/957>

SUMMARY

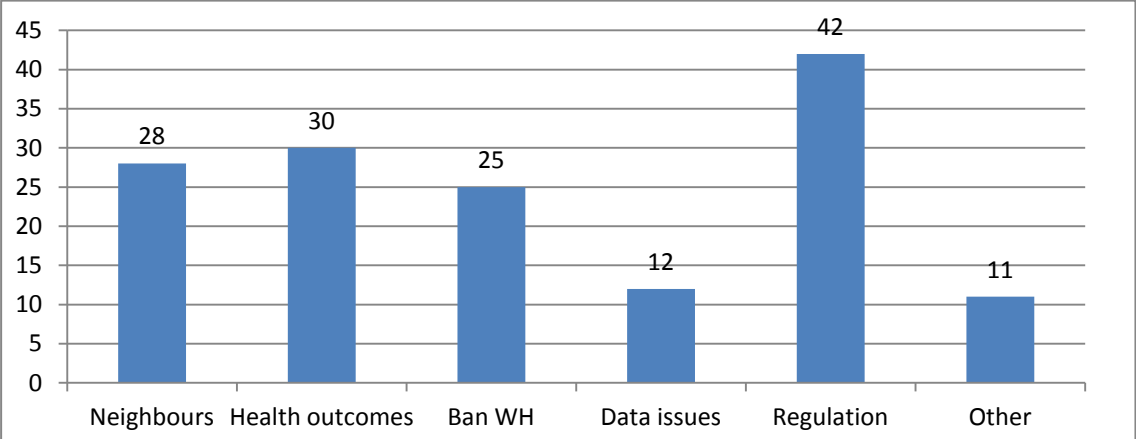
Of the 59 submissions received, a breakdown of the total against the stakeholder groups is listed in Figure 1.

Figure 1



The main themes that came through from all submissions reflect a common concern as well as general agreement that wood heater emissions are deleterious to human health and there is a need to act to bring about a reduction in emissions. Figure 2 shows the number of submissions that mentioned the main themes. The “other” theme notes submissions that mention greenhouse gas issues or the precautionary principle, amongst other issues.

Figure 2 - THEMES



Of the 59 submissions tendered, only 22 (37 percent) indicated a preference for any of the options included in the RIS. Option 9 was the one most cited (13 submissions – 22 percent) as the preferred regulatory avenue to adopt, although not all submissions gave an indication on the options offered. The other national regulation options (6 – 8) were also mentioned as approaches to take, but only ten submissions highlighted this direction (17 percent). Two submissions (3 percent) indicated support for the voluntary options (options 1 and 2).

There were no respondents raising explicit objections to government action being undertaken, but ten submissions (17 percent) were supportive of either the wood heater industry or wood heater use.

IN-SERVICE WOOD HEATERS

Of the total number of submissions, 28 submissions from individuals (47 percent) report on the difficulty they are experiencing in resolving the issue of emissions from neighbouring wood heaters. Twenty three (39 percent) of these report adverse health effects on their families often requiring increasing medicinal solutions, including steroid use for asthma diagnoses in children. Similar neighbourhood examples are also cited in submissions from other stakeholders, such as academic and community groups.

Twenty three respondents (39 percent) report on the failure of local government regulations to resolve the problem, citing statutes in some states that require measurement of smoke plumes over time and distance variables during periods when these are difficult or impossible to obtain (e.g. at night). These submissions note also that most local government authorities do not have the resources to attend to neighbour issues and when they do, are reluctant to impose penalties available to them under their by-laws. At every one of the public meetings there was at least one report from attendees on the issue of neighbouring wood heaters affecting their lives.

The majority of submissions from local governments acknowledge these difficulties and often report that their preference is to focus on educating recalcitrant wood heater users to the proper use of their appliances. However, other evidence reports that these efforts are often

not successful, with the neighbour continuing to improperly use his/her wood heater. Eighteen submissions (31 percent) from individuals report that, because of the failure of enforceable regulation and the continuing use of wood heaters in their neighbourhood, they are unable to use the outside amenities of their property (washing lines, gardens etc). Four respondents (7 percent) report having to sell their house and move to a new location.

Submissions under this theme call for workable regulations common across jurisdictions and the financial support of local governments to enable councils to act to curb emissions. Twenty five submissions (42 percent) call for the wood heaters to be banned in urban areas.

HEALTH IMPACTS

The overwhelming majority of submissions note the information on the toxicity of emissions from wood heaters. Twenty submissions (34 percent) cite both overseas and Australian sources as evidence of poor health outcomes and point to the cost/benefit analysis available in the RIS as clear evidence in arguing for prompt action to curb wood heater emissions. Fifteen respondents (25 percent) question government authorities as to why this pollution is allowed, making comparisons to other government actions to curb social practices where adverse health outcomes result; the most common action cited was government restrictions on tobacco sales.

Submissions from the wood heating industry also acknowledge this evidence and have pointed to their role in initiating reduced emission standards for new wood heater appliances. One submission juxtaposes adverse health outcomes via emissions compared to possible adverse health outcomes from poorly heated houses. It reasoned that this was predominantly applicable to those in poorer socio-economic demographics not having access to the cheaper heating available through the use of wood fuel.

Twenty five submissions (42 percent) argue that the RIS should have included an additional option to ban wood heaters because of the overwhelming evidence of the dangers to human health posed by wood heater emissions.

BAN WOOD HEATERS

As noted above, 25 submissions have called for a ban on wood heaters, either outright, or at the very least, in urban areas of higher population densities. Eight submissions (13 percent) call for a moratorium on wood heater installations until such time as more complete legislation can be enacted.

Submissions calling for a ban indicate that such a ban could be enforced through the removal of wood heaters on the sale of the property. Respondents also acknowledge the role that government sponsored replacement programs could play in reducing wood heater usage, citing the experience in Launceston during the buy-back program conducted in 2001-2004.

Industry submissions advocate that any buy-back programs should also include new, more efficient wood heaters as a replacement for old heaters, but other submissions rebut this argument, citing evidence that shows that even the new efficient wood heaters, when operated badly, will emit high emissions. A number of submissions however, acknowledged that pellet heaters could be included in such programs because of their minimal emission profile.

DATA ISSUES

The forward to the consultation RIS notes that the data contained in the RIS is somewhat dated, but that, in order to avoid any further delays to the release of the document, a decision was taken to issue the RIS to allow for public consultation on wood heater emissions. Eight submissions (13 percent) note the reliance on arguments within the RIS have been extrapolated from research that in some cases are a number of years old. These respondents therefore question the veracity of some of the conclusions claimed in the RIS.

An important element in many submissions relate to the number of wood heaters being used in Australia. The RIS has undertaken examinations based on ABS figures that show a gradual decline in usage, although the RIS forward notes the latest ABS survey (2011) shows a slight increase in usage. Many submissions provide anecdotal evidence that wood heater usage is on the increase in their regions and contends that such an increase can be attributed to the increase in electricity and gas prices. Indeed one submission from Launceston contends that all the good work undertaken during the government's buy-back scheme is now being unravelled because of the increased use of wood heaters in the region. This point was also made at the public meeting in Launceston.

The conclusion drawn in these arguments is that wood fuel is a cheaper form of heating, with wood sometimes being harvested for free in some of the larger regional communities. Arguments are also made on suggestions that those on lower incomes cannot afford to use existing electric or gas heating. Indeed they are resorting to restarting existing, older wood heaters to avoid higher heating costs.

Twelve submissions (20 percent), notably from industry or business advocates, but also from Mr Peter Thornton, argue that the available data does not support the view that the majority of particulate matter present in many airsheds is sourced from wood heater emissions. One submission from industry also suggested that National Pollution Inventory figures indicate that 90 percent of PM₁₀ emissions were from other sources.

Two submissions argue that the consumption of wood fuel is much lower than figures quoted in official sources, although they acknowledge the difficulty in estimating true figures. One submission contrasts the figures in the RIS with CSIRO data showing much lower consumption. Both argue that a lower consumption figure would lead to a lower than estimated emission factor being attributed to wood heaters.

REGULATION

Twenty four submissions (41 percent) have indicated a preference for national regulations, with Option 9 being the most favoured choice. As noted above, many submissions were critical that the RIS did not present an option requiring a ban on wood heaters, advocating that such an outcome could easily be implemented through removal of heaters at the sale of properties. Nineteen submissions (32 percent) commented on the application of regulations at the local government level, noting either that a uniform application of regulations should apply across all jurisdictions or, alternatively, that specific restrictions should be allowed in critical airsheds. The submissions from a number of local governments noted that any improvements they instigate in their shire can often be overcome by poor practices in neighbouring shires.

Eight submissions (13 percent) insisted that the standards governing wood heater emissions should be 'health based' standards, indicating that under such a system, wood heaters could be sold and operated providing it could be shown that there were no or minimal effects on human health. These submissions however, also noted that evidence cited in the RIS and

other sources states that "...there are no clear thresholds for adverse health effects from PM in the atmosphere, and that adverse effects can be experienced after both short-term and long-term exposures".

Five submissions (8 percent) noted the limited reference in the RIS to the quality of the wood fuel as a cause of concern with regard to emissions. One submission noted that all manner of changes can be made to the standards for wood heater design and construction to improve on emission output, but if the fuel used in that appliance is of poor quality or wet, then this would always result in excess smoke from the appliance. Respondents therefore advocate that regulation of wood fuel merchants is required to ensure that wood fuel is the most optimum available to users.

OTHER VIEWS

Five submissions (8 percent) have argued that wood heater usage is a sustainable practice with regard to greenhouse gas emissions, noting that wood fuel is a renewable resource. There is little evidence however, provided through the RIS consultations process that indicates there are significant wood plantations being established.

Four submissions (7 percent) have cited the 'precautionary principle' i.e. if there are serious doubts about the safety of an activity, it should not be permitted unless there are clear benefits outweighing the safety considerations. These respondents argue that the precautionary principle should be applied with regard to allowing wood heaters to continue operating, given the amount of evidence showing adverse human mortality and morbidity outcomes.

STANDARDS AUSTRALIA

A number of submissions make comment on the existing standards governing wood heater emissions and efficiency. The current Australian Standards that cover these elements are:

- AS/NZS4012:1999 Domestic Solid Fuel Burning Appliances – Method for determination of power output and efficiency
- AS/NZS4013:1999 Domestic Solid Fuel Burning Appliances – Method for determination of flue gas emissions

The current AS/NZS 4012 and 4013 standards are test methods that cover fuel loading, operating procedures and sampling methods. AS/NZS4013 has an emission criterion of 4 grams of particulate matter (PM₁₀) emitted per kilogram of fuel burnt (4g/kg). There is currently no efficiency criterion, but there is a requirement that the efficiency result be reported (along with other information) on a label permanently attached to the appliance.

In April 2012, the Australian Home Heating Association (AHHA) submitted an application to Standards Australia to update the standards applicable to emission and efficiency requirements for all new wood heaters offered for sale in Australia. The AHHA proposal specifically sought a revision of the emissions and efficiency criteria respectively to 2.5 grams of particulate matter (PM₁₀) emitted per kilogram of fuel burnt (2.5g/kg) and a new efficiency standard of 55 percent. Negotiations within the Standards Australia committee have also included additional improvements of 1.5g/kg and 60 percent efficiency, which are proposed for implementation within five years of publication of any new standard which is the subject of the current committee process.

Representatives from Commonwealth and state jurisdictions, along with industry and community stakeholders, are on the Standards Australia committee reviewing AHHA's proposal. The draft revised standards arising from this process were made available for public

comment on 5 September 2013, with submissions closing on 7 November 2013. Once submissions have been taken into account, the committee will vote to approve the final standards for publication.

The Standards Australia process is happening in parallel with, but is separate to, the regulation impact statement processes. Finalising the standard prior to concluding the current impact statement deliberations may have some bearing on other aspects of the regulatory impact analysis (e.g. the standards to which a policy or regulation will eventually refer). The regulatory impact analysis, however, assesses a variety of policy and regulatory options over the short- to medium-term that cannot be covered within the Standards Australia process, such as education programs, compliance processes, etc. These issues need to be considered within a national approach to reducing the harmful effects of wood heater pollution.

ATTACHMENT A

Response to Questions

Only 16 submissions provided specific responses to the questions at the end of the chapters in the RIS. The main points in these responses are set out below.

Chapter 2 – Australian Wood Heaters

1. *What is your view of the wood heater industry in Australia? Are there specific aspects of the industry that require attention? Please provide details.*

- The sale of wood fuel requires attention and/or regulation
- More research and development required on wood heater design and construction. This could be subsidised by government.
- AHHA's current proposal to reduce thresholds for emissions within Standards Australia do not go far enough. The proposal of 2.5g/kg for emissions equates to the performance of most wood heater models currently available on the market.
- Health based standards are required.
- There is a need for independent certification of wood heater units.
- Rejection of the claim in the RIS that wood heater sales and usage are declining, citing high gas and electricity costs for a return to wood heater usage.
- Wood heaters provide an alternative to gas or electricity, both of which contribute to greenhouse gas build up. Wood heaters can supply supplementary energy through water jackets and electricity generation.

2. *Can you provide evidence of new or different operational or marketing paradigms that would affect the stated view?*

- Increasing population and higher energy costs will lead to greater wood heater use.
- Health warning labels, along with taxes on wood heater use, are required.
- New Zealand example shows that industry can adapt to stricter standards.
- Compliance and audit processes are required.
- CSIRO data shows wood fuel consumption much lower than RIS data.
- EU has embraced biomass fuel as viable greenhouse friendly option.
- Funding required for research grants and buy-back programs.

Chapter 3 – Statement of the Problem

3. *Do you consider wood heater emissions to be a significant issue relative to other forms of air pollution?*

- Comparisons between wood heater emissions and tobacco smoke are made.
- Evidence and references are cited to show that wood heater emissions are a significant source of particulate matter in urban environments.
- "Dustrak" monitoring by one council shows wood heater emissions to be the most significant source of air pollution during winter in many regions in Australia (lack of resources prevents council maintaining accredited monitoring).
- "The government should explain under what circumstances (the high PM_{2.5} emissions and high health costs) for a new wood heater would not be considered significant".
- The RIS is flawed in its modelling and greatly overestimates the health impacts and costs.

- Temperature inversion traps all particulate matter, not just wood smoke.
- Rural areas often do not have wood heater emission issues.
- Wood heaters are carbon neutral.
- A balanced approach is required in assessing sources of air pollution. Respondent accepts that critical airsheds will have higher wood heater emissions, but argues that more research required.

4. *Do you agree with the conclusions provided in this section? If not, please provide reasons.*

- While domestic wood smoke may not be the biggest contributor to poor air quality across the nation, it is a problem in urban areas and it is important to apply the precautionary principle and aim for improved emissions and efficiency levels.
- PM_{2.5} reporting levels are exceeded far more frequently than the PM₁₀ limit, which needs to be taken into account.
- Individual human beings are impacted by wood smoke. Respondent expresses disappointment at a maximum of 18 percent reduction in emissions aimed at in the RIS (Option 9).
- Further improvements to the NEPM standards are required. Increased monitoring is required.
- All nine options still allow the installation of wood heaters, with the subsequent additional health costs.
- Evidence tendered shows there is no increase in particulate matter during the winter months in the greater metropolitan region around Sydney. Such evidence casts doubt on conclusions drawn in the RIS.
- Care is needed to ensure wood heaters continue to be the only renewable heating available.

5. *Are there other variables that have not been considered or not been attributed sufficient weight in the discussion?*

- "There is a question of who is responsible for respiratory disease caused by wood smoke pollution; governments that implement inadequate legislation and policies, or the owners and operators of wood heaters that emit the pollution?"
- Sufficient weight has not been given to health costs.
- Specific regulation for critical airsheds should be considered.
- Emission measurements should take into account light-up and refuelling.
- There is a lack of focus on PM_{2.5} in the RIS.
- There is no national definition of "excessive smoke".
- There is a requirement for better provision of accurate and regular pollution data, including source identification.
- There is a need to ensure that any improvements in emissions are not off-set by new wood heater instalments due to urban growth.
- The health of immediate neighbours adjacent to wood heaters is not covered in the RIS. A hot line and amended planning regulations which allow consultation with neighbours prior to installation of a wood heater are recommended.

- Sufficient weight has not been given to other toxins within wood smoke including benzo[α]pyrene, benzene, and formaldehyde.
- More attention is required on wood heaters being a cheaper alternative to gas/electric for lower income earners.

Chapter 4 – Rationale for Government Intervention

6. Do you agree that the current policy measures for the abatement of wood heater emissions are not successful in realising the policy objectives? Can you provide other evidence to support this?

- Local government has neither the expertise nor resources to meet policy objectives on wood heater emissions. They have a superficial authority which is usually ignored with no consequences. Repeated complaints over many years have not resulted in any change or improvement in most airsheds.
- Clarity is required on the responsibilities of the differing levels of government. Future programs need long timeframes, sufficient budgets and experts in communications, social sciences and environment.
- Agreement that the current policies are unsuccessful, citing as evidence a study showing more than 50 percent of in-service wood heaters as non-compliant, continuing breaches of the NEPM standards and the recent ABS survey showing an increase in wood heater usage.
- The health of the population is a responsibility of the federal government so the issue should be dealt with at the Commonwealth level.
- Education programs are ineffective.
- Some replacement programs and education campaigns have been successful – e.g. Launceston.
- There is no clear evidence that the current measures have not reduced wood heater emissions. Poor air quality can be attributed to a variety of sources. The “market failure” cited in the RIS is misguided and inaccurate.

7. Which policy delivery method do you believe should be adopted by government and why?

- There is a market failure due to the lack of regulation on the sale of wood fuel.
- A combination of national, state and local regulations is required. Respondent suggests a national regulatory approach led by NEPM-like process in conjunction with targeted campaigns combined with possible installation bans on heavily impacted areas by local government.
- A health based Australian standard is required, along with a pollution tax on non-compliant wood heaters.
- Any measures that can be implemented quickly. A moratorium on new wood heater installations should apply in the mean time to halt further pollution.
- Caution should be taken when applying rules to all of Australia where those rules need only apply to a few select areas.
- A national regulatory approach should be adopted with sufficient financial resources provided to local government and other agencies for compliance, education and research programs.
- A nationally agreed real-life test method is required.

- All options in the RIS are redundant because of new standards being implemented through Standards Australia. Industry should be given funding to carry out further research and development.

Chapter 5 – Identification of Feasible Policy Options

8. Do you agree that the policy measures listed for the abatement of wood heater emissions will be successful in realising the objectives? If not, please provide your reasons including supporting evidence.

- Respondent strongly disagrees with Option 9 on the basis of value for money, the length of time to achieve outcomes and the level of achieved reduction in PM, which is considered to be very modest.
- Respondent questions whether the nine policy options will reduce emissions. Recommends improved emission/efficiency limits, labelling, starter controls on wood heaters, national funding for audit and compliance, independent test and certification, replacement programs, controls on modification/ sale of second-hand wood heaters and removal of non-compliant units.
- Programs need to be targeted at changing behaviour based on well founded research and theory. Such programs will be more effective than community education campaigns.
- Non uniform regulation is required, with limits or bans in critical airsheds.
- Tighter regulation for “nuisance” wood heater operators along with better support for local governments.
- Agree that the measures could be adopted via a NEPM-like approach with local governments included for more radical solutions in areas that are heavily impacted.
- The only effective measures are ones focused on wood heater removals – e.g. Launceston.
- The proposed measures are redundant. New wood heater replacement programs are required that cover all heating options, not just gas or electric.

9. Do you believe that the “nudge” programs will be helpful in reducing wood heater emissions?

- Nudge programs are only effective for the period when the issue is being pursued with the community; the effect does not necessarily endure after the focus is removed.
- Thaler & Sunstein’s book "Nudge" 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.
- Any "nudge" programs run by government would be directly opposed by wood heater industry advertising.
- Education programs are only useful as a supplement to regulation.

10. Are there other measures that are not listed in the document that should be considered?

- Include measures to regulate the sale and use of wood as fuel as well as regulating against using other toxic materials for fuel. Ensure sufficient funding is made available to allow compliance and enforcement.
- Wood heaters tested on softwoods should not be allowed into Australia as the softwood/hardwood tests are different. Tighter regulations on wood fuel suppliers needed.

- Encourage homeowners to insulate their homes, which would reduce the need for overnight burns.
- If a wood heater NEPM were to be introduced it would be enforced by the states and have a positive benefit for local councils as they would be supported by federal standards and measures.
- Federal government should 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.
- Respondent does not support the view that imposing restrictions on households not directly experiencing air quality issues is irresponsible. Any disadvantaged neighbour, regardless of the airshed, should be considered. This could be addressed by giving neighbours a chance to object to a wood heater being installed based on the grounds of health effects.
- Several respondents recommended the phase out of wood heaters via the sale of the property, a ban on wood heater sales and licence fees for wood heater operators. Also PM_{2.5} should be set as a NEPM standard, the Standards Australia constitution should be reformed to remove industry veto options and the inaccuracies in the National Pollution Index should be corrected.
- Ban open fireplaces; ban wood heaters in critical airsheds; encourage pellet heaters and other low emission options and reinstate the energy efficiency programs for homes – e.g. insulation and sustainability programs.
- National technical assistance to be given to local governments. Ban wood heaters in airsheds where PM_{2.5} concentrations exceed 25µg/m³ (24 hour average) in winter.
- Nationally agreed real-life test methods are required.
- Wood heater standards should be altered to include softwood measurements as well as grams/hour to enable comparisons with overseas measurements. Governments should establish firewood growth forests to protect native habitat and facilitate renewable fuel.

Chapter 6 – Identification of Feasible Policy Combinations

11. Which of the listed policy combinations do you favour in addressing a reduction in wood heater emissions? Why do you favour these measures?

- Twenty three respondents favoured the national regulatory approach (Options 6-9).
- Option 9 was favoured coupled with investment in research and development.
- Option 7 was favoured because of the shorter phase-in period.
- A number of respondents indicated that the policy combinations listed in the RIS will not be effective. Instead they opted for the phase out of wood heaters via the sale of the property, a ban on wood heater sales and licence fees for wood heater operators.

12. Are there policy combinations that you would not support? Please provide reasons.

- Many respondents indicated that Options 1 – 5 should not be supported as they are no different to the existing approach which has been shown to be unsuccessful.
- A number of respondents stated that wood heaters should not be allowed where their emissions breached a health based standard.

Chapter 7 – Impact Analysis of Feasible Policy Options

13. Do you believe the base case has been correctly identified, or are there other variables that need to be considered?

- A number of respondents indicated that the base case was not clearly identified, citing increased wood heater usage.
- One respondent submitted that the NPI figure of 40,000 tonnes of particulate matter was overstated.
- A number of respondents tendered an alternative base case extrapolated from the NSW EPA report on wood heater emission options.

14. Have all health, environmental, economic and social impacts been identified? If not, please suggest others that need to be included. Has sufficient weight been given to these impacts within their relationship to the policy options being proposed?

- Health impacts, medical costs, loss of amenity and lifestyle changes of neighbours affected by wood heater emissions has not been considered in the RIS.
- There is an over emphasis on short term health impacts and not enough on long term health impacts from low level long term exposure.
- Health impacts have not been given sufficient weight in the RIS.
- The overall health costs from wood heater emissions have not been identified clearly.
- Two recent reports show improved morbidity outcomes in areas with reduced wood heater emissions.
- Green house gas issues need to be a factor as well as the affordability of wood fuel over alternative sources.
- The need to consider the establishment and support for firewood plantations.
- Non-compliance with correct wood fuel usage could be associated with socio-economic disadvantage.
- Responsible disposal of buy-back units.

15. Have all key assumptions been correctly identified and included in the analysis? If not, please suggest others that need to be included.

- The RIS fails to analyse the local impact on neighbours of in-service wood heater emissions.
- Criticism of the delay in introducing an emissions target of 1.5g/kg and 65 percent efficiency.
- Although not in the remit of the RIS, the indoor air issue remains a concern.
- With respect to key assumptions: (1) there is a need to consider whether setting more stringent emission and efficiency standards will drive innovation and increase competitiveness of Australian wood heaters on the international market. (2) Assess the impact of rural emissions on urban environments. (3) Consider heater replacement/ upgrades when selling the property, and (4) evaluate open fire-place use.
- Firewood production and sustainability of supply should be considered.
- The health costs claimed in the RIS may be lower due to inaccurate data assumptions.

Chapter 8 – Conclusions

16. Do you agree with the conclusions? If not, please provide reasons.

- Business as usual will not lead to an 18% reduction in wood heater emissions because of the new ABS figures showing increased usage. The 1.5g/kg limit could easily be met by manufacturers through the elimination of the slow burn option.
- Respondent does not think the current wood heater use pattern can be relied upon to accurately predict use to 2030. There has been a significant increase in the reliance on wood heaters in recent years in direct response to the increase in electricity prices.
- All policies cited in RIS have been tried in NZ. Respondents refer to the Otago council data showing stringent requirements but very little improvement.
- Respondent questions whether wood heaters are the main source of particulate matter in winter, given the evidence presented showing no significant rise in emissions.

17. Can other conclusions be made based on the outcomes of this analysis?

- Options 1 - 9 are inadequate and should be replaced with the NSW EPA findings – i.e. phase out wood heaters at the sale of a property; introduce a ban on wood heater sales; and the provision for licence fees on in-service wood heater users.
- "No safe exposure level for fine particulates" means aiming for zero exposure wherever possible.
- Greater intervention by governments is required.

ATTACHMENT B

List of Submissions

Submission number	Submitter Name	Stakeholder
1	Name withheld	Individual
2	Rick Banyard	Individual
3	Wayne Monfries	Individual
4	Pat Schultz	Individual
5	William Thomson	Individual
6	Malcolm Cowan	Individual
7	Hornsby Shire Council	Local government
8	Roger Shelton	Individual
9	Confidential Submission	Individual
10	Name withheld	Individual
11	Betty Velentzas	Individual
12	Emission Impossible	Academic / Research / Professional Association
12a	Emission Impossible addendum	Academic / Research / Professional Association
13	Tasmanian Department of Health and Human Services	State government
14	Robbie Johnston	Individual
15	Fiona Ewings	Individual
16	Confidential Submission	Individual
17	Confidential Submission	Business/industry body
18	Confidential Submission	Individual
19	Ned Icteton	Individual
20	John Todd	Academic / Research / Professional Association
21	WA Department of Environment Regulation	State government

22	Gason	Business/industry body
23	Firewood Association of Australia	Business/industry body
24	Pecan Engineering Pty Ltd & Adelaide Heating Technology	Academic / Research / Professional Association
25	Peter Cannon	Individual
26	Lung Foundation of Australia	Academic / Research / Professional Association
27	South Australia Environment Protection Authority and Department of Health and Ageing	State government
28	Alison Harvey and David Butler	Individual
29	Confidential Submission	Individual
30	Alan Joynt	Individual
31	Cleanairtas	Community organisation
32	Frank Callaghan	Individual
33	Alan Fisher	Individual
34	Robyn Handrek	Individual
35	Camden Council	Local government
36	Fluecube Australia	Business/industry body
37	Name withheld	Individual
38	Simonne Walle	Individual
39	Centre for Air Quality Health Research and Evaluation	Academic / Research / Professional Association
40	Australian Air Quality Group	Academic / Research / Professional Association
41	Name withheld	Individual

42	Clean Air Society of Australia and New Zealand	Academic / Research / Professional Association
43	Confidential Submission	Business/industry body
44	Environmental Health Australia (NSW)	Academic / Research / Professional Association
45	Dragon Wholesaling Pty Ltd	Business/industry body
46	Kevin Parton	Academic / Research / Professional Association
46a	Kevin Parton addendum	Academic / Research / Professional Association
47	Name withheld	Individual
48	Armidale Dumaresqu Council	Local government
49	Asthma Foundation NSW	Academic / Research / Professional Association
50	Carolyn Oliff	Individual
51	New England Greens	Community organisation
52	City of Swan (WA)	Local government
53	Mark & Tracey Corrigan	Individual
54	Ed Campbell	Individual
55	Jeff Dunn	Individual
56	Dr James Markos	Academic / Research / Professional Association
57	Confidential Submission	Individual
58	Peter Thornton	Individual
59	NSW Department of Health	State government

ATTACHMENT C

Public Information Sessions

Details on the public information meetings are as follows:

Community	Time	Date	Venue	Attendance
Tuggeranong, ACT	4.00pm - 6.00pm	Tuesday, 21 May 2013	Tuggeranong Southern Cross Club	10
Melbourne, Victoria	4.30pm - 6.00pm	Thursday, 30 May 2013	The Centre, Ivanhoe 275 Upper Heidelberg Rd Ivanhoe VIC 3079	8
Launceston, Tasmania	1.00pm - 3.00pm	Tuesday, 11 June 2013	Silverdome Auditorium 55 Oakden Rd, Prospect, TAS 7250	10
Sydney, NSW	5.30pm - 7.30pm	Thursday, 13 June 2013	Sydney Masonic Centre, 66 Goulburn Street, Sydney, NSW, 2000	6
Armidale, NSW	1.00pm - 3.00pm	Friday, 14 June 2013	Council Chambers, Armidale Dumeresq Council Offices, 135 Rusden Street, Armidale, NSW, 2350	11
Wagga Wagga, NSW	1.00pm - 3.00pm	Tuesday, 25 June 2013	Council meeting room, Civic Centre, Corner Baylis and Morrow Streets, Wagga Wagga, NSW, 2650	9
Perth, WA	1.00pm - 3.00pm	Thursday, 27 June 2013	Rothschild's Function Room, Perth Zoo, 20 Labouchere Road, South Perth, WA, 6151	10
Adelaide, SA	9.30am - 11.00am	Friday, 28 June 2013	Charles Sturt Room, Rydges South Park, 1 South Terrace, Adelaide, SA, 5000	16