

Statement of evidence of **Gillian Ensor**

Submitter ID: 62753

for the public hearing on the

Proposed Canterbury Air Regional Plan

18 September 2015

Introduction

1. I live within the Christchurch Clean Air Zone in a 1920's 100 m² weatherboard house. I heat my home with a low emitting enclosed burner that was installed in January 2007.
2. I oppose the space heating rules for the Christchurch Clean Air Zone, specifically Rule 7.87, as it unnecessarily restricts me from continuing to use my cost effective, efficient, existing, lawfully operable low emitting enclosed burner to heat my home as a permitted activity.
3. I have prepared this evidence to support my submission as a resident living within the Christchurch Clean Air Zone, not in my professional capacity having experience working in resource consents and plan development. However, given the nature of my evidence I consider that it is appropriate to submit it for the Hearing Panel to read in advance of the hearing as set out in Minute 1 of the Hearing Commissioners (7 August 2015).
4. In preparing my submission and evidence I have read the following documents:
 - a. Proposed Canterbury Air Regional Plan (March 2015) (Proposed Air Plan)
 - b. Proposed Canterbury Air Regional Plan: Section 32 Report (March 2015)
 - c. Health Impact Assessment: Review of Canterbury's Air Plan – Potential effects of wood burner restrictions on wood burning households in Christchurch (September 2014)
 - d. Proposed Canterbury Air Regional Plan: Section 42A Report (August 2015)
 - e. Canterbury Natural Resources Regional Plan: Chapter 3 – Air Quality (operative Air Plan)
 - f. Air Plan Review – discussion document for consultation (June 2014)
5. I attended a public consultation workshop in Christchurch in June 2014.

Relevance of the Proposed Air Plan

6. Under the Proposed Air Plan, within the Christchurch Clean Air Zone, the discharge of contaminants into air from a low emitting enclosed burner is authorised by Rule 7.87 as a permitted activity.
7. Rule 7.87 establishes a 15 year phase out period commencing 1 January 2019 for low emitting enclosed burners to create space in the airshed for industry and essential services that discharge contaminants into air (s32 report, page 4-61). After this period (which could be after 1 January 2034), the discharge of contaminants into air from a low emitting enclosed burner will be a prohibited activity under Rule 7.84.

8. The 15 year phase out period is discussed in the section 32 report which states the phase out period will:
 - a. Allow communities time to prepare for change, and to reduce the cost burden on households in replacing appliances; and
 - b. Allow industry to further develop alternative cost effective space heating solutions for households.

Time to prepare for change and reducing the cost burden on households

9. Because my low emitting enclosed burner was installed in January 2007, Rule 7.87 allows me to discharge contaminants into air as a permitted activity for 15 years from the date of installation (until 17 January 2022), after which, it will be a prohibited activity under Rule 7.84 and I will have to install an alternative space heating appliance(s) in my home.
10. Unfortunately, I will not benefit from changes in technology over a 15 year time period, nor will I have 15 years to prepare for and financially plan to change my low emitting enclosed burner as anticipated by the 15 year phase out period established in the Proposed Air Plan and outlined in the section 32 report. Fifteen years from the date of installation of my appliance is January 2022. I therefore have 7 years from the date that the Proposed Air Plan was notified (28 February 2015) to prepare to change my appliance. This is **not** 15 years which is the basis for the section 32 assessment of the costs and benefits of the space heating objectives, policies and rules.
11. The Proposed Air Plan does acknowledge this matter by way of including Clause 4 in Rule 7.87 which will allow me to replace my low emitting enclosed burner with a new low emitting enclosed burner, if installed after 28 February 2015 (the date that the Proposed Air Plan was publicly notified) but before 1 January 2019 (the date that the 15 year phase out period commences) provided that my home has a building consent issued prior to 2003 and the existing low emitting enclosed burner was lawfully operable within the entire 12 months immediately prior to its replacement. I can discharge contaminants into air from that burner for 15 years from the date of installation. If I do this, I will then benefit from the 15 year phase out period for low emitting enclosed burners.
12. There is no discussion in the section 32 report about the reasons for clause 4 of this rule as it applies to low emitting enclosed burners, and in my view the section 32 report is deficient in assessing the total costs of the space heating rules in the Christchurch Clean Air Zone with regards to this matter.

13. As a home owner, I must therefore consider the following two options that the proposed Air Plan provides me:

- a. Option A is to replace my low emitting enclosed burner 15 years from the date of installation (January 2022) with an alternative heat source. This could be an ultra-low emitting enclosed burner or a domestic liquid or gas fuel burning device, or an appliance that does not discharge contaminants into air (i.e. heat pump or similar). I will have 7 years from the date that the Proposed Air Plan was publicly notified to prepare for this change.
- b. Option B is to replace my low emitting enclosed burner 12 years from the date of installation (prior to 1 January 2019) with another low emitting enclosed burner and use that burner for 15 years from the date of installation (until approximately January 2034). I will have 4 years from the date that the Proposed Air Plan was publicly notified to prepare for this change.

14. The option that is the most attractive to me at the moment, is to replace my low emitting enclosed burner with exactly the same one prior to 1 January 2019, for the following reasons:

- a. At the moment, the cost of a low emitting enclosed burner is significantly less than an ultra-low emitting enclosed burner (the three that are currently on the market); and
- b. If I install the same low emitting enclosed burner, I don't have costs associated with changing the size of the hearth, moving the holes in the ceiling and roof for the chimney, or changing the plumbing to my hot water cylinder; and
- c. My low emitting enclosed burner has a greater heating capacity than any of the ultra-low emitting enclosed burners that are currently on the market. I know that my existing low emitting enclosed burner effectively heats my entire home; and
- d. I can heat my home during a power cut; and
- e. I will benefit from the anticipated 15 year phase out period and will be able to use my new low emitting enclosed burner until approximately 2034.

15. The 15 year phase out period as discussed in the section 32 report (pg 3-7) and section 42A report (pf 3-27) states:

"The pCARP response to reducing home heating emissions relies mostly on technology upgrades within polluted airsheds. This will necessarily occur over a longer time frame (15-19 years) to provide time for people to get reasonable use from technology they have invested in and ensure time enough to cover the costs of upgrade."

16. It is clear that a phase out period of up to 19 years is anticipated and was considered as part of the section 32 assessment, yet this is not reflected in Rule 7.87(4). Nineteen years is the period from when the Proposed Air Plan was notified (February 2015) until the end of the 15 year phase out period which commences on 1 January 2019 (2034). For my situation, where I currently have a low emitting enclosed burner, a phase out period of 19 years would mean that I do not have to replace my low emitting enclosed burner with the exact same low emitting enclosed burner unnecessarily.

17. The efficiency assessment in the section 32 report that sets out the costs of the policies and rules for space-heating in the Christchurch Clean Air Zone (pg 4-68) does not discuss the costs of Rule 7.87(4) with regards to replacing a compliant low emitting enclosed burner with a new compliant one. It only discusses the costs associated with replacing a non-compliant burner with a compliant one. With regards to the economic costs associated with the 15 year phase out period for low emission enclosed burners, it states that:

"The 15 year phase out period of the use of 1 gram wood burners proposed under the pCARP allows the householder to align their introduction of a compliant wood burner including an ultra-low emission wood burner, with normal appliance replacement cycle which substantially reduces or eliminates the capital costs."

18. It is clear from this that the 15 year phase out period is associated with enabling the 'introduction' of a compliant wood burner into a house. In my situation, I already have a compliant wood burner in my house.

19. It is also clear that 15 years is considered to be the expected life of an enclosed burner, therefore requiring an enclosed burners' replacement after 15 years of use means that the capital costs associated with an appliances replacement can be substantially reduced or eliminated. In my case, and I'm sure many other cases, Rule 7.87(4) anticipates than an appliance can be replaced in less than 15 years. It is not clear in the section 32 assessment how these costs have been considered.

20. The response to submissions in the section 42A report that discusses the 15 year phase out period on page 15-19 does not respond to the effect on households of enabling low emitting enclosed burners to be replaced with new low emitting enclosed burners. It states the following:

"...The pCARP now requires all wood burners (either older-style or low emitting) to be replaced after 15 years of use. A period of 15 years provides for a reasonable return on investment in an appliance, and ensures that new, lower emitting appliances are being used in the airsheds."

21. In my view this clearly shows that the whole point of Rule 7.87 is to ensure that technology is upgraded and that existing non-compliant enclosed burners are replaced with lower emitting appliances, and that after 15 years of use these low emitting appliances are phased out. Clause 4 (Rule 7.87(4)), as it applies in my situation, does not ensure that new, lower

emitting appliances are being used, it only ensures that new appliances are being used, not lower emitting appliances.

22. It is my opinion that Rule 7.87 must be amended for the following reasons;

- a. A 19 year phase out period is anticipated in the section 32 assessment and also discussed in the section 42A report as quoted in paragraph 15, yet this not reflected in the rule; and
- b. A phase out period of less than 15 years does not give households the anticipated time period to prepare for change. For me I have a period of 4 years to prepare for change if I choose Option B or 7 years if I choose Option A set out in my paragraph 13; and
- c. The cost burden to households is not reduced by this provision, because a low emitting enclosed burner is unnecessarily replaced prior to its normal replacement cycle of 15 years as discussed in paragraph 19 above; and
- d. There is no technology upgrade gained from this provision as set out in paragraph 21 above; and
- e. There will be no decrease in emissions into the Christchurch airshed, so there is no environmental benefit resulting from this provision.

23. Overall, I consider that the section 32 efficiency evaluation of the economic costs and benefits of the space heating provisions is inadequate as it does not fully assess the true costs associated with replacing a compliant low emitting enclosed burner with a new compliant low emitting enclosed burner as provided for by Rule 7.87(4).

24. Rule 7.87 must be amended to allow the discharge of contaminants into air from a low emitting enclosed burner as a permitted activity for 19 years until 1 January 2034, without requiring homeowners to replace their low emitting enclosed burner with a new low emitting enclosed burner prior to 1 January 2019 in order to benefit from the 15 year phase out period anticipated by the Proposed Air Plan.

Alternative Cost Effective Space Heating Solutions

25. As set out in paragraph 8 above, one of the reasons for the 15 year phase out period for low emitting enclosed burners is to allow industry time to further develop alternative cost effective space heating solutions for households.

26. After 15 years from the date of installation of my low emitting enclosed burner, if I wish to continue to use an enclosed burner to heat my home, my only option is to install an ultra-low emitting enclosed burner. There are currently three on the market with varying heating

capacities and costs. The costs are in the range of approximately \$7,000 to \$11,000 (excluding installation). The Jayline Waltherm which has the highest heating capacity has a fan, so it requires electricity (another cost).

27. I live in a 1920's weatherboard home. As stated in my submission, I have extensively renovated my home to make it as warm as possible. This has included insulating all external walls, upgrading insulation in the ceiling, installing double glazing and a heat transfer system, as well as replacing curtains. It is definitely better insulated, less drafty and much warmer than when I purchased it in 2006. As with many older homes, it was not designed to receive maximum solar gain. In winter, two of the bedrooms do not receive any sun. A new home, built to the existing building standards, would be well insulated and should receive maximum benefit from the sun in terms of free heat.
28. The heating requirements of different homes is discussed in the technical reports that support the section 32 assessment¹. Table 2-3 of Appendix 4 shows that a pre-1973 house with retrofit ceiling, underfloor and wall insulation has a similar heating requirement per square meter to a house built between 2003 – 2013 (66 kWh m² and 52 kWh m², respectively).
29. From my experience living in a 95 year old home and visiting friends who live in new homes, the heating requirements of my home are not similar to theirs. I am therefore concerned that this heating requirement information has been used for the basis of the section 32 assessment of the costs of the space heating provisions.
30. It may be the case that a new well insulated home could be adequately heated with a single heating appliance such as an ultra-low emitting enclosed burner. But for a home such as mine, I am concerned that this will not be the case. The reason for this concern, is that my existing low emitting enclosed burner has a 21 kw heating capacity and combined with my heat transfer system, adequately heats my entire home. I do not need any supplementary heat sources in the remainder of my house. The ultra-low emitting enclosed burners that are currently on the market, have a significantly lower heat output (4 – 14 kw) than my existing burner. I do not consider that any of the existing ultra-low emitting enclosed burners currently on the market will adequately heat my home and I will therefore need to install a supplementary heat source(s) in other parts of my house.
31. This will mean that I will not only be looking at costs in the order of \$7,000 to \$11,000 to purchase an ultra-low emitting enclosed burner (excluding installation costs), but I will also need to factor in additional costs for other heating appliances in the remainder of my house. This is a significant capital cost outlay.

¹ Health Impact Assessment: Review of Environment Canterbury's Air Plan – Potential effects of wood burner restrictions on wood burning households in Christchurch – Report and Recommendations. Appendix 4 page 11 (September 2014).

32. The efficiency assessment in the section 32 report sets out the social costs of the policies and rules for space-heating in the Christchurch Clean Air Zone with regards to the operational costs of different appliances (page 4-69) as follows:

“Operation costs of a heat pump, ultra-low emission wood burner and conventional wood burner are the same where wood is purchased, resulting in a low social impact on these households.”

33. It is my view that this assessment assumes that a cost effective alternative space heating solution can be obtained by replacing one heating appliance with another and therefore concludes that there are low social impacts on these households. I consider that this assessment must look at the true costs associated with heating houses of different ages which should include both the capital and running costs of replacing one space heating appliance with multiple appliances.

34. The Proposed Air Plan provides me with no certainty that by the end of the 15 year phase out period established by Rule 7.87 there will be a comparable cost effective alternative space heating solution for older homes such as mine.

35. For the above reasons it is my view that a 15 year phase out period for low emitting enclosed burners should not apply to older houses that were built before 1978. I have chosen this date because 1978 is the year used in the age classification assessment used to determine heating requirements of houses of differing ages in the technical report that supports the plan development².

Relief Sought

36. In my submission I sought that Rule 7.87 be amended to ensure that the discharge of contaminants into air from my low emitting enclosed burner is a permitted activity with no phase out period. I still consider this to be the case, especially for houses that are built before 1978 that have different heating requirements to newer homes.

37. A new rule as set out below should be inserted into the Proposed Air Plan which permits the discharge of contaminants into air from a low emitting enclosed burner installed into a house that was built before 1978 if it replaces a non-compliant burner and is installed prior to 1 January 2019. The rule should also provide for the replacement of a low emitting enclosed burner if it is damaged or requires replacement for another reason.

Within the Christchurch Clean Air Zone the discharge of contaminants into air from a low emitting enclosed burner that is located in a dwelling for which building consent was issued prior to 1 January 1978, is a permitted activity, provided that the following conditions are met:

²² Health Impact Assessment: Review of Environment Canterbury’s Air Plan – Potential effects of wood burner restriction on wood burning households in Christchurch – Report and Recommendations, Appendix 4 Chapter 2.

1. The low emitting enclosed burner replaces an open fire or older style enclosed burner that was lawfully operable within the entire 12 months immediately prior to the installation of the low emitting enclosed burner and is installed before 1 January 2019; or
2. The low emitting enclosed burner replaces a low emitting enclosed burner that was lawfully operable within the entire 12 months immediately prior to the installation of the low emitting enclosed burner.

38. If the Hearing Panel are not satisfied that a phase out period for low emitting enclosed burners in older homes should be removed as set out above, at the very least, Rule 7.87 must be amended as set out below to ensure that the discharge of contaminants into air from a low emitting enclosed burner is a permitted activity until 1 January 2034, with no unnecessary replacement of an appliance. Open fire, or older style enclosed burners will still be able to be replaced with a low emitting enclosed burner between 28 February 2015 and 1 January 2019.

Within the Christchurch Clean Air Zone the discharge of contaminants into air from a low emitting enclosed burner is a permitted activity provided the following conditions are met:

1. The low emitting enclosed burner is located on a site that is 2ha or greater in area; or
2. The low emitting enclosed burner is not installed after 1 January 2019; and
3. The discharge is not from a low emitting enclosed burner after:
 - a. ~~15 years from the date of installation of that burner; or~~
 - b. ~~1 January 2019~~

which ever is the later 1 January 2034; and
4. If installed after 28 February 2015 but before 1 January 2019, the low emitting enclosed burner is located in:
 - a. A dwelling, including an extension or alteration to that dwelling, for which building consent was issued prior to 1 January 2003; and
 - b. An existing dwelling to replace an open fire, or older style ~~or low emitting~~ enclosed burner that was lawfully operable within the entire 12 months immediately prior to the installation of the low emitting enclosed burner.

Conclusion

39. It is my view that the section 32 assessment of the costs and benefits of the policies and rules for space heating in the Christchurch Clean Air Zone does not adequately assess the true costs of Rule 7.87.

40. The Proposed Air Plan does not provide me with a comparable cost effective alternative space heating solution for my 95 year old house. A new rule should be inserted that removes the phase out period for low emitting enclosed burners installed into homes that were built

before 1978. This will ensure that I can continue to discharge contaminants into air from my lawfully operable low emitting enclosed burner as a permitted activity.

41. Rule 7.87(4) as it applies to existing low emitting enclosed burners requires the unnecessary replacement of a compliant burner with a new one in order to benefit from the 15 year phase out period that the rule establishes. This will result in no technology upgrade and no reduction in emissions into the Christchurch airshed and is an unnecessary cost to households. It is my view that the benefits and costs associated with this provision have not been adequately assessed in the section 32 assessment and therefore this provision must be removed from the Proposed Air Plan.

Gillian Ensor

18 September 2015