

24 July 2020

Air Quality NES consultation
Ministry for the Environment
PO Box 10362
Wellington 6143

Attention: AirQualityNESsubmissions@mfe.govt.nz

Subject: Proposed amendments to the National Environmental Standards for Air Quality: particulate matter and mercury emissions

Submission from:

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Submitter type	Other Organisation
Overall position	Support in Part

The Bioenergy Association is pleased to make this submission as the National Environmental Standards for Air Quality (NESAQ) are important to the association's members optimal performance of the biomass fuelled heating equipment which they install and operate.

The association is disappointed that the NESAQ are not having a wider review as the association believes that there are some wider matters than are being addressed in this consultation which the Minister should be considering.

The focus of the NESAQ must be health but in many ways the current form of the standards and some of the principals on which it is built are long outdated and does not follow best international practice.

International best practice puts a greater emphasis on guidance rather than regulation on particulate levels as it is often how equipment is used, rather than the quality of the equipment, that determines the amount of particulate emissions to air. An example is with regard to residential heating where poor quality solid wood fuel into a compliant heater can create pollution.

The other main point which needs to be made is that this review is desperately narrow, concentrating on a change in emphasis from PM10 to PM2.5, and wood burners. Issues surrounding how airsheds are defined in the first place are left unasked, (and if you look at the different sizes and shapes, it's clear that these are not fit for purpose), arising from the use of the unrepresentative and atypical results that are coming from the selected monitoring points, (NIWA made this very point some years back, but nothing has been done), and the whole issue of commercial emissions and consenting needs addressing.

The Bioenergy Association is happy to discuss these wider issues with the Ministry.

The association supports the details in the submission from The Association for Independent Research Inc (Copy attached) and wishes to make the following additional points.

Introduce PM2.5 as the primary regulatory tool to manage particulate matter pollution

1. Do you agree the proposed PM2.5 standards should replace the PM10 standard as the primary standard for managing particulate matter?

Position (Not specified) Yes No

Notes

2. Do you agreed we should include both a daily and an annual standard for PM2.5?

Position (Not specified) Yes No

Notes

The standards proposed seem consistent with international best practice.

3. Do you agree the standards should reflect the WHO guidelines?

Position (Not specified) Yes No

Notes

The proposed ambient PM2.5 standards are the same values that were adopted as air quality guidelines by the World Health Organization in 2006.

4. Do you consider that your airshed would meet the proposed PM2.5 standards? If not, what emissions sources do you expect to be most problematic?

Position (Not specified) Yes No

Notes

Many airsheds do not have enough collected data to be able to answer this question.

Given the implications of the new standards on current and future activities, further investigations are required to understand the full impact of the proposed amendments – particularly in terms of the cumulative effects and the costs on existing resource users.

Amend the transitional provision to require that where there is insufficient PM2.5 data available a minimum five years of monitoring data should be collected before an airshed is determined to be polluted under the PM2.5 standard

Retain the PM10 standard with reduced mitigation requirements

5. Do you agree councils should be required to keep monitoring PM10?

Position (Not specified) Yes No

Notes:

The PM10 dataset provides valuable information and discontinuing monitoring and management would be premature. It continues to provide an understanding of the effectiveness of airshed measures that have already been implemented. It will allow trends to be monitored.

6. What would be the additional costs involved in retaining PM10 monitoring alongside PM2.5 monitoring, versus the potential loss of valuable monitoring information?

Notes:

Only Councils could answer this question.

Polluted airsheds

7. Do you agree an airshed should be deemed polluted if it exceeds either the annual or the daily PM2.5 standard?

Position (Not specified) Yes No

Notes:

Exceedances of either the proposed annual and daily standards for PM2.5 are appropriate criteria for determining if an airshed is polluted (or not).

Considering the large opportunity for variability in the data because of climatic effects and that data is only collected at specific locations, with extrapolation to the wider airshed, the proposed increase to three allowable exceedances is more practicable than the current situation and is supported.

In addition there should be a permissive capability for exceedances to be different than the standard in some localities with specific airshed characteristics.

8. If all new resource consent application to discharge PM2.5 into a polluted airshed must be offset or declined, how would this affect your activities, or activities in your region?

Notes

If a region was deemed to be polluted and heat plant operators are required to obtain resource consents based on offset this would add considerable cost for small heating plant which can not be supported by the science. The offsetting should be required only for point emissions above a threshold. Offsetting of small emissions was trialed in the early 2000s in Canterbury and residential heating equipment retailers had to apply for a global resource consent to install pellet fires. They then had to keep records of how many pellet fires went in as replacements for wood fires and how many went into homes without any fire. It would have a detrimental effect on small residential heating businesses if resource consents were required for each pellet fire heater installed. We would suggest that there should be categories of Solid Fuel Heaters. This was how ECAN managed it.

Amend as follows:

- Amend to provide that only new resource consent applications (ie discharges not consented at the date the amendments come into legal effect) for activities that discharge more than $25\mu\text{g}/\text{m}^3$ within the polluted airshed can be declined unless the applicant will offset the discharge within the same airshed (regulation 17).
- Develop clear guidance to help consent applicants and decisions-makers determine what would be appropriate offsetting within this context.

9. Can you identify a more appropriate, measurable threshold for controlling consented discharges in a PM2.5 context?

Position (Not specified) No Yes

Notes:

In the consultation document, the MfE acknowledges that a value of 5% of the proposed PM2.5 standard, or $1.25\mu\text{g}/\text{m}^3$ (24-hour average), might not be a practical significance threshold to implement. We agree that this value is impractical as it implies an unrealistically high level of precision in dispersion modelling and the stack emission

testing that is used to characterise the emissions. **We suggest that a threshold of 10% of the PM2.5 standard, or 2.5 µg/m³ (24-hour average)** would be a more realistic basis. In addition, we consider a higher relative threshold (i.e. 10% rather than 5% of the standard) will help to avoid the current situation where small-scale activities with only very localised effects are often deemed “significant” because they have relatively short stacks or the emissions are subject to building downwash.

10. Do you agree that if councils do not have adequate PM2.5 data, the airshed’s classification under the PM10 standards should apply?

Position (Not specified) No Yes

Notes

There should be adequate time for councils and emitters to collect appropriate data and to evaluate airshed classification. A simple grandfathering of existing classifications is unscientific and likely to lead to results significantly adversely affecting both the communities and industry. It would be practicable (1) to continue classifying airsheds under the current PM10 standard, and (2) define a suitable period (ie five years) within which PM2.5 data would be collected before an airshed could be classified ‘polluted’ under the amended standard..

Domestic solid-fuel burner emissions standard

11. Do you agree with the proposal to reduce the emissions standard to no more than 1.0g/kg? If not, what do you think the standard should be?

Position (Not specified) Yes No

Notes

Most of the solid fuel heating technology being developed in NZ is already under 1.0g/kg. For some time heating suppliers have been encouraged to develop product with lower emissions so there is little point in maintaining the 1.5g/kg option. This means that NZ and overseas equipment manufacturers have a clear emissions target when producing new product. Ideally the NZ figure would be relatable to international emissions targets for Europe who are also focusing heavily on reducing emissions.

However reducing emission standards without considering fuel will not produce the results desired. Poor quality fuel into compliant equipment will result in continued pollution.

12. Are there areas where a lower (more stringent) standard could be applied?

Position (Not specified) Yes No

Notes

There already are Clean Air Sheds that can’t meet their Clean Air requirements that have more stringent standards –one of those more stringent clear air sheds is Christchurch.

All domestic solid-fuel burners covered

13. Do you agree the new emissions standard should apply to all new domestic solid-fuel burners newly installed on properties less than two hectares in size?

Position (Not specified) Yes No

Notes

As long as functional equivalency is available for heater products that cannot currently be tested.

The new emissions standard should be coupled with making it illegal to use wet solid wood fuel as wet wood pollutes regardless of the quality of the solid fuel burner.

14. Do the current methods to measure emissions and thermal efficiency need updating or changing? For example, to address any trade-off between thermal efficiency and emissions, or to test other types of burners or burner modifications that seek to reduce emissions?

Position (Not specified) Yes No

Notes

With the convergence of international standards for PM2.5 emissions and real life testing the overseas testing of equipment manufactured overseas should be accepted in New Zealand. There is no need for emissions and thermal efficiency standards in New Zealand to be different from those applying in Europe or internationally. That then allows for testing to be able to be done in any country provided it is to the appropriate standard. An overseas test must be performed by an ILAC accredited laboratory to an equivalent standard to that applying in New Zealand. Any cost in NZ should just be converting those overseas testing results so they are functionally equivalent. There should not be duplication costs of testing to a stand alone AS/NZS standard. The current methodology fails to recognise the small heating equipment market that NZ is and the disproportional costs because overseas testing is ignored. We want to find a way to encourage new efficient technologies recognising that economies of scale will often mean that they are produced overseas and tested to international standards.

The emissions and thermal performance of biomass fuelled heaters is dependent on the quality of the fuel used by home owners. Currently focus is on the testing of the equipment but greater effort should be going in “regulating”/educating owners on the quality of fuel used. The lack of accreditation of solid wood fuel suppliers encourages any quality of fuel to be sold and used. Bioenergy Association members who supply firewood are working to become accredited under the Association’s accreditation scheme but this is an area where more support is required. Councils have a major role in this regard alongside permitting of the heating equipment.

Wood pellet heaters are fully controlled heat sources provided they are consistently using specified pellets. Currently in New Zealand there is no regulatory standard for wood pellets to be manufactured to, yet those Councils may allow installation of wood pellet heaters to be a permitted activity. There is evidence to suggest the PM2.5 emissions from a pellet fire are considerably less than alternative solid fuel options and as a controlled heat source it is appropriate that installation of wood pellet heaters be a permitted activity.

Because there is no standard in New Zealand for manufacture of wood pellets a residential heater owner may use pellets for which the heater has not been designed. This would result in pollution. For optimal emissions performance wood pellet heaters should be properly tuned for the fuel being used.

Information on emissions and biomass combustion are well set out in the report from the UK Air Quality Expert Group

<https://uk->

[air.defra.gov.uk/assets/documents/reports/cat11/1708081027_170807_AQEG_Biomass_report.pdf](https://uk-air.defra.gov.uk/assets/documents/reports/cat11/1708081027_170807_AQEG_Biomass_report.pdf)

Mercury emissions

15. Do you support the proposed amendments to the NESAQ to support ratification of the Minamata Convention on Mercury?

Position (Not specified) Yes No

Notes:

Bioenergy Association supports the Government's proposal to implement the use of best available techniques (BAT) and best environmental practices (BEP) to control mercury emissions from relevant sources (Article 8(5)(c) of the Minamata Convention.

16. Do you agree with how these amendments will affect industry?

Position (Not specified) Yes No

Notes

Bioenergy Association does not agree with the Government's proposal to apply the BAT/BEP method to existing Annex D point source emissions of mercury.

It is recommended that Government:

1. Endorse the existing BPO framework in the RMA as the measure to achieve the intent of Article 8(5) of the Minamata Convention and therefore New Zealand's commitment to reducing mercury emissions.
2. Restrict 'mandatory consideration' of international best practice guidance (ie UNEP Guidance) in accordance with Article 8(8)(a) to new Annex D sources only.

17. What guidance do you think will be needed to support implementation of the proposed amendments? Will industry need help to interpret the best practice guidance for the New Zealand context?

Notes:.

N/A

18. Do you use any of the manufacturing processes listed in Proposal 9? If so, does this process use mercury?

Position (Not specified) Yes No

Notes

N/A

19. Do you agree with the Government's proposed approach to regulate the source categories in Proposal 10? If not, why not?

Position (Not specified) Yes No

Notes.

20. What air pollution control technologies are currently required for existing source categories listed in Proposal 10?

Notes

Bioenergy Association recommends that Government endorse the existing BPO framework in the RMA as the framework for determining the best method to minimise or prevent the adverse effects of mercury discharges on the environment.

Timing, implementation and transitional provisions

21. Do you agree that lead-in times are required for starting to monitor PM2.5 and for burners that will no longer be compliant? What lead-in times do you suggest and why?

Position (Not specified) Yes No

Notes

Bioenergy Association agrees that transitional provisions are required for regional councils (and unitary authorities) to start monitoring PM2.5 if they are not already doing so. There is also need for adequate lead-in times for heat plant owners who will no longer comply with the emission requirements. The 12 months proposed in the Consultation Document is inadequate and five years will be more appropriate.

Business will require at least 5 years if they are to replace large non-compliant equipment.

Similarly, where there is no or little data to determine if an airshed would meet the proposed PM2.5 standards a minimum of five years data should be collected before an airshed is deemed to be polluted. The PM10 standard would continue to be used until there is adequate PM2.5 data.

For residential heating where testing of equipment may be required the lead-in time depends on whether duplication of testing to meet a New Zealand only standard is going to continue to be required. If international standards and testing is accepted then a shorter lead-in time can be set for residential and small scale heating equipment.

Retailers won't be bringing in proven low emissions equipment if they have to re-test. The current uncertainty around testing methodology and the NESAQ mean there is too much risk and little certainty around investment viability. Some international manufacturers are keen to be involved in the NZ residential heating market – but not until there is greater certainty around testing requirements and methodologies.

Residential heating is often not changed until building modification so the new provisions should apply only to new applications.

22. Are there any matters you think would require transitional provisions? If so, what?

Position (Not specified) Yes No

Notes

If a greater range of existing technology for residential heating gets ruled out by new standards then there would need to be a longer transition. Not dissimilar to the ECAN commissioners giving a 5 year extension on the 15 year LEB expiries. If there is good continuity of product availability and affordability for consumers then the transition would be less important.

What would the proposed amendments mean for Māori?

23. Does your whānau, hapū or iwi use a solid fuel burner for heating your kainga, whareniui or other buildings, for example, at the marae? What impact do you think the proposed amendments may have? How else do you think the proposed amendments to the NESAQ will impact your whānau, hapū and iwi?

Position (Not specified) No Yes

Notes

24. As the Government, we need to meet our treaty obligations. Regional councils will need to consider how they partner with iwi to implement the proposed amendments. Do the proposed amendments provide for this?

Position (Not specified) No Yes

Notes

25. The proposals will gradually reduce PM2.5 emissions from domestic solid-fuel burners by requiring newly-installed burners to meet stricter standards. Do you think this is the best approach?

Position (Not specified) No Yes

Notes

26. What else do you think the Government should consider in this process of amending the Air Quality Standards to increase the mauri of the air we breathe and decrease health effects associated with poor air quality?

Notes

Other comments

27. Do you have any other comments you wish to make?

Position (Not specified) Yes No

Notes

The health consequences of a more stringent particulate emissions standard needs to be balanced with the health requirements for a warm home that is affordable otherwise existing heating systems will not be replaced.

While the WHO air quality standards are ok there is a need for a total system rethink on the control of emissions to air. For example testing of residential solid wood burners is based on dry fuel but this is rarely used in practice.

The quality of regional rules is often very poor and districts adjacent to each other can have very different rules which often create unnecessary costs to achieve zero different effect. For example emission stack heights are often not based on any science. Many were just copied form original UK rules that are very inappropriate today.

The consenting of combustion plant is generally undertaken by many consent authorities as an art form rather than being based on science. There is a need for greater consistency across regions and better guidance provided to consenting officers.

Regards



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Bioenergy Association