



Proposed Amendment to the Protection of the Environment Operations (Clean Air) (POEO) Regulation 2010 Relating to Wood Heaters

Submission by: Clean Air Society of Australia and New Zealand

To: NSW Environment Protection Authority

Date: May 2015

SUMMARY

- CASANZ supports the proposed amendment to the regulations as an important step in improving air quality in NSW.
- CASANZ considers, however, that there is strong justification for the proposed draft regulations to go further than they do based on the potential health benefits of this and the favourable cost benefit analysis.
- CASANZ considers that local government areas where permitting by councils is required should be mandated at the state government level.
- CASANZ also recommends that councils be provided with adequate resources to enforce the regulations.
- CASANZ recommends that wood heater standards include the need for automatic controls of heater combustion to minimise smoke emissions.
- CASANZ recommends that the current test procedure be modified so that heater performance measured under test conditions more closely reflects actual operating performance.
- CASANZ recommends that proper consideration be given to extension of the natural gas reticulation network throughout regions of NSW with high numbers of heating degree days and where wood heater smoke is a significant issue.

INTRODUCTION

The Clean Air Society of Australia and New Zealand (CASANZ) is a non-government, non-profit organisation that brings together professionals working across a broad range of air quality management fields. Formed in 1966, the Society's members have been intimately involved with the evolving management of air quality in Australia and New Zealand. Various members of the Society have worked in all levels of government, conducted research in Universities, CSIRO and other agencies, and worked as air quality consultants. The Society performs important roles in information and technology transfer, and training.

CASANZ welcomes this opportunity to provide a submission on the proposed amendment to the POEO regulations on wood heaters. This submission includes the considered views of the Society. We have considered the proposed amendments as well as information in supporting documentation for the proposed amendments:

- Wood Smoke Control Measures, AECOM 2014 report to NSW EPA;
- Economic Appraisal of Wood Smoke Control Measures, AECOM 2011, final report to Department of Environment and Heritage; and
- Submissions to the Council of Australian Governments Standing Council on Environment and Water on the 2013 Consultation Regulation Impact Statement for Reducing Emissions from Wood Heaters.

PROPOSED AMENDMENT

CASANZ supports the proposed amendment to the regulations as an important step in improving air quality in NSW. The proposed amendment does this by:

- specifying reduced emissions and improved efficiency performance standards for wood heaters in NSW;
- enabling local councils to specify areas in which the installation of new wood heaters or new open fires is not allowed except with specific approval.

These measures to reduce the impacts of wood smoke pollution are justified by strong economic and social imperatives for action:

- smoke from wood heaters is a very significant contributor to winter time particle pollution (up to 60% in some areas);
- numerous studies link PM₁₀ and PM_{2.5} particle pollution to serious adverse health effects, including premature death, and there is no safe level for these effects;
- the cumulative health costs to 2030 from particle pollution from wood heaters in NSW under business as usual approach is \$8 billion (net present value).

STRONGER ACTION

CASANZ considers that there is strong justification for the proposed draft regulations to go further than they do based on the potential health benefits of this and the favourable cost benefit analysis.

Various options are explored in the two AECOM reports. The analysis shows that the most effective options by far are removal of heaters at the time of sale of the property, and prohibiting the installation of heaters and open fireplaces in new homes. Standards are relatively ineffective in achieving significant reductions and any improvement is very slow. Education programs on the proper operation of heaters on their own have likewise been shown to be slow and relatively ineffective in achieving air quality improvements. CASANZ's view is that action to ban domestic solid fuel burning for domestic heating should be seriously considered, particularly where the meteorology is such that people will be adversely affected.

CASANZ considers that local government areas where permitting by councils is required should be mandated at the state government level.

In addition to heater emissions performance, the adverse impact of wood heater smoke also varies with the neighbourhood where the heater is located as well as the positioning and height of the exhaust in relation to neighbours. Thus, for example, air quality impacts from heaters located in areas prone to inversions and pollutant build-up, as is the case in valleys, are much more pronounced than in well ventilated areas. Clearly the aggregate pollution from a number of heaters in a populated area greatly exacerbates the impacts of a single heater. However, even a single heater with a badly located exhaust can badly affect neighbours.

CASANZ also recommends that councils be provided with adequate resources to enforce the regulations.

WOOD HEATER CONTROL FEATURES

CASANZ recommends that wood heater standards include the need for automatic controls of heater combustion to minimise smoke emissions.

Wood heater emission performance is a function of the technology, how the heater is operated, and the quality of the fuel. This results in a wide variation in smoke emissions from heaters of the same design and construction. This is an issue even for heaters designed to the tightest standards. It would be beneficial for air quality if heaters were installed with automatic controls to minimise poor operation and reduce start-up and reloading emissions, e.g. automatic control of combustion air and combustion temperature.

UPDATE TEST PROCEDURE

CASANZ recommends that the current test procedure be modified so that heater performance measured under test conditions more closely reflects actual operating performance.

In relation to heater design standards, Australian and New Zealand standards specify test methods for determining the heater emission and energy efficiency performance under specified test conditions. Testing under real world operating conditions indicates that actual emissions are much higher than under test method conditions. This is quite apart from higher emissions from poor operations. This inconsistency makes it difficult to enforce compliance. It would therefore be desirable for a test method that more closely approximates emissions under operating conditions. More importantly, there does not appear to be any effective method of specifying and enforcing operating performance for wood heaters other than visible smoke rules.

EXTENSION OF NATURAL GAS RETICULATION NETWORK

CASANZ recommends that proper consideration be given to extension of the natural gas reticulation network throughout regions of NSW with high numbers of heating degree days and where wood heater smoke is a significant issue.

An important issue for users of wood heaters is the cost of other heating methods. The current gas reticulation network for natural gas does not include the northern or a large proportion of southern NSW, areas with highest number of heating degree days. Using bottled LPG for heating is much more expensive for consumers than natural gas. This lack of heating alternatives is further exacerbated by the fact that heat pump heating (through split-system and reverse-cycle air conditioning) is an inefficient heating source in very cold climates with temperatures less than 4°C.

WOOD HEATER STANDARDS

The draft regulations propose average efficiency and emissions standards of 55% and 2.5 g/kg of fuel respectively for heaters sold before 1 September 2019 and 60% and 1.5 g/kg for those sold after 1 September 2019.

It is noted that a number of current heater models already comply with the tighter standards. In New Zealand, a 1.5 g/kg emissions standard and 65% efficiency standard applies and, indeed, in some areas of New Zealand they must meet a 0.7 g/kg standard.

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