

REPORT

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Prepared for: Policy Committee
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Date: 18 November, 2003
Subject: Proposed National Environmental Standards for Air Quality

1. Précis

This month the Ministry for the Environment has proposed national standards for air quality and invites submissions by 5 December 2003. Once approved by the Cabinet, these standards have the force of regulation.

This report examines the proposed standards and provides a draft submission for the approval of the Committee.

2. Background

According to S43 of the Resource Management Act (RMA), the Governor-General may, by Order in Council, prescribe national environmental standards not limited to the following:

- contaminants,
- water quality, level, or flow,
- air quality,
- soil quality in relation to the discharge of contaminants,
- noise,
- monitoring requirements, standards or methods.

This month the Ministry for the Environment (MfE) has released its proposed national environmental standards inviting submissions by 5 December 2003.

The Regional Plan: Air for Otago has been operative from 1 January 2003. The objectives of this report are to assess the implications to the Air Plan and to provide a draft submission.

3. The need for national environmental standards

MfE states “... *the proposed national environmental standards aim to:*

- *create a level playing field across New Zealand;*
- *provide certainty and consistency;*
- *guarantee a level of protection for the health of all New Zealanders;*
- *drive effective regional and national policies to improve air quality ...”*

Industry interests have long argued for and favoured national standards over regional standards and hence the aims of the MfE would satisfy the industry request.

Whilst the national standards provide consistency, they may not necessarily resolve certain specific regional air or water quality issues. Therefore regional councils are still expected to address such issues on a regional basis.

The RMA allows such an approach without causing additional costly plan changes. Section 43B of the RMA allows that, if a regional rule is more restrictive than the national standard, the rule will prevail.

4. Proposed national environmental standard on air quality

There are three major categories proposed:

- a) ambient air quality standards;
- b) prohibited activities;
- c) emission standards for home heating appliances.

4.1 Ambient air quality standards

Table 1 shows a comparison between the proposed national environmental standards and the Regional Plan: Air for Otago's regional ambient air quality guidelines.

Table 1: Comparison between the Otago goal levels and proposed national environmental standards

Contaminant	Otago goal levels	Proposed national environmental standards	Averaging times
Particulate (PM ₁₀)	50 µg/m ³	50 µg/m ³	24 hours
		up to 120 µg/m ³ <5 days/year exceedance	24 hours
Sulphur dioxide	230 µg/m ³	350 µg/m ³	1 hour
		Up to 570 µg/m ³ (9 allowable exceedances)	1 hour
Carbon monoxide	6 µg/m ³	10 µg/m ³ (9 allowable exceedances)	8 hours
Ozone	No goal level	150 µg/m ³	1 hour
Nitrogen dioxide	200 µg/m ³	200 µg/m ³	1 hour
		up to 300 µg/m ³ (9 allowance exceedances)	1 hour

It is clear from the above table that Otago's ambient air quality goal levels are either the same as, or more stringent than, the proposed national environmental standards, except for ozone, for which the Region has no goal level. The MfE standards provide upper limits for exceedance and number of allowable exceedances.

4.2 Prohibited activities

Table 2 shows the activities MfE proposes to prohibit, and implications for the Regional Plan: Air.

The burning of certain materials is prohibited in the Regional Plan: Air and a list of these materials is in Appendix 1. The controlled incineration of the materials listed in Appendix 1 is a discretionary activity including the burning of waste oil in a frost pot or fuel burning equipment, according to Rule 16.3.3.2 in the Regional Plan: Air.

Table 2: Implications for Regional Plan: Air of proposed MfE prohibited activities

Proposed MfE prohibited activities	Implications for Regional Plan: Air
1. Open burning of tyres	Prohibited activity, hence no implications.
2. Road seal burning	Discretionary activity, however there will be few or no implications since such a practice is rarely carried out in Otago and no consent has been applied for to carry out such an activity in Otago.
3. Burning of oil in the open	<p>Prohibited activity to burn waste oil except for the burning of waste oil in a frost pot, which is a discretionary activity. To date there has been no application to burn waste oil in a frost pot and hence the MfE ban may have few or no implications.</p> <p>Clean oil burning is not a prohibited activity according to the Air Plan, hence the MfE ban may have implications for the orchardists who use frost pots to burn clean oil, which is permitted by Air Plan Rule 16.3.13.1(8). Most orchardists hold water permits to fight frost in Central Otago, therefore only a few orchardists may be affected by the MfE ban.</p>
4. Landfill fires	The Regional Plan: Waste restricts the burning of waste at landfills, therefore there are no implications. Landfill fires are not prohibited by the Air Plan. However, such fires are effectively banned by the Plan through restrictions on materials burnt according to Appendix 1, since any one of these materials is generally present in most landfills.
5. Waste incineration in schools and hospitals (by 2008)	If the waste material is dry and does not contain ORC's prohibited materials, it can be burnt in schools or hospitals provided the burning does not occur within 100 m of the boundary in Dunedin or Mosgiel, as defined by Schedule 1.2 map in Air Plan. For most such burning, failure to meet the above clearance distance means a resource consent is required to undertake it in Dunedin and Mosgiel, hence the MfE ban has few or no implications in the Dunedin and Mosgiel areas. The MfE ban may affect areas other than Dunedin and Mosgiel in Otago.
6. High temperature hazardous waste incineration	<p>The Air Plan allows incineration of hazardous waste material as a discretionary activity. The Regional Plan: Waste also requires special medical waste to be disposed of by high temperature incineration. There are no high temperature hazardous waste incinerators operative in Otago and hence the MfE ban will have no implications.</p> <p>With respect to crematoria:</p> <ul style="list-style-type: none"> • it is unlikely there will be any implications in Otago from this ban; • there is no reference to them in the New Zealand Waste List.
7. Coated wire burning	This activity is prohibited by the Air Plan, therefore no implications.

4.3 Emission standard for New Zealand home heating appliances

The proposed standard on the emission of home-heating appliances is 1.5 grams of particulate matter (PM₁₀) for every kilogram of fuel burnt. If regulated, this will supersede the Regional Plan: Air emission requirement of 4g/kg. When the Regional Plan: Air was proposed, the emission requirement

was 3g/kg, however, following appeals to the Environment Court, this requirement was relaxed to 4g/kg, which is also the current Australian-New Zealand standard.

The proposed emission standard will be regulated in “urban areas”. The definition for “urban areas” is yet to be introduced by MfE but may involve prescriptions of population density.

4.3.1 Advantages

4.3.1.1 Achievement of Air Plan's air quality objective

The 1999 Air Emissions Inventory showed that domestic discharges are the largest source of PM₁₀ in Otago's urban areas, contributing 67% of PM₁₀ emissions during winter, although contributions for individual urban areas range from 52% to 92%. Domestic emissions will exceed both industry and mobile sources in terms of their contribution to ambient PM₁₀ concentrations.

An emission standard of 1.5 g/kg PM₁₀ for burners was not considered in the PM₁₀ reduction projections presented in the Inventory and other documents supporting the Air Plan decisions. The only standards compared were 3, 4 and 5.5 g/kg, because they were under discussion through submissions, and later through references.

Two assumptions were made in 1999 and can continue to be safely made:

- All new households in the Schedule 1.2 areas, that will burn solid fuel, will have 'new appliances' installed that meet the new standard.
- All existing heating appliances are replaced by 'new appliances' after 15-25 years of service.

The following conclusions were drawn in 1999 from these projections:

- i. If no controls are implemented, domestic PM₁₀ emissions could reduce by 37% to 65% of present levels by 2008 and an additional 2% (to 61% of present levels) by 2018. This is a “baseline” prediction, where the trend is driven by attrition and the availability of new burners, etc.
- ii. On its own, the 3 g/kg emission standard could reduce domestic heating PM₁₀ emissions by a further 8% over the baseline, in 2008 and an additional 12% by 2018. Greater reductions may be possible in towns where open fire use is low.

One can continue to assume that reduction objectives will be met eventually even if left to attrition and technological changes alone. The 1999 inventory showed that, for both Dunedin and for all other towns, with a standard of 4 g/kg, the PM₁₀ in tonnes per year would be halved by just after 2018. It is predicted that PM₁₀ should be halved by 2010, if the standard of 1.5 g/kg is adopted in those urban areas. With halving of the PM₁₀ emissions from the sources which account for 67% of PM₁₀ emissions during winter, it can be assumed that the objective of no exceedences of 50 µg/m³ (24 hour average) should be attained several years earlier if the standard of 1.5 g/kg is adopted for all new burners installed in Otago towns.

4.3.2 Disadvantages

4.3.2.1 Availability of burners and coal use

Availability of burners that will comply

There are about 60 domestic heating appliances available from a range of manufacturers that comply with a 1.5 g/kg standard. There are about 170 known to the ORC currently as emitting less than 4 g/kg. Thus, more than a third of currently approved burners meet 1.5 g/kg, but several of these are pellet fires which depend on the continued availability of appropriate pellets.

Use of Coal

It is unlikely that any manufacturer can readily develop a domestic heating appliance rated at 1.5 g/kg or less, that burns coal, even a 50:50 mix of coal and wood. Therefore the proposed emission standard may effectively ban the use of coal as a solid fuel in all new appliances installed within the urban areas following the regulation.

4.3.2.2 Areas outside of Schedule 1.2

As stated before the MfE definition for "urban areas" is yet to be introduced. The Air Plan restricts emissions from heating appliances within specified Schedule 1.2 areas (i.e. Dunedin, Mosgiel, Oamaru, Wanaka, Arrowtown, Queenstown, Cromwell, Alexandra, Clyde, Balclutha and Milton). If MfE applies a population density criterion to define urban areas, the existing Schedule 1.2 areas are likely to differ in terms of size. This would mean new maps may have to be produced by ORC.

4.3.2.3 The exclusion of central heating, water heating and cooking appliances

Section 4.1 suggests that these solid fuel burners will be excluded from the need to meet the standard, based on the end use of the heat produced. This is principally because their emission rating cannot be tested under current AS/NZS 4013:1999 standard methodology.

5. The implementation of a national environmental standard

Within four years of the standard coming into force, regional councils will be required to play a role in developing and implementing strategies and monitoring programmes. It is expected that regional councils will manage emissions through regional planning and point source discharge management through consents. The above two mechanisms are already in place in Otago. In addition, public information campaigns, financial incentive schemes and monitoring in those areas where the Otago Goals are not met, should also be considered. Such measures are being implemented in Otago.

Regional councils will also be required to publicly notify exceedances of the standards. Such public notice should accompany information on main sources and actions taken to reduce emissions.

A potential enforcement action is also contemplated by MfE, against councils that are not making progress towards achieving the standard. Such proposal further states "... *Any action taken against a council will need to demonstrate that the main emission source is under the control of the council, and that the council is not doing enough to achieve the standards ...*". The proposal also states that the action would be similar to that which might be taken if any party is not fulfilling its function and duties under the RMA.

6. Recommendation

That this report be received and the attached submission approved.

Selva Selvarajah

Director Resource Management

Appendix 1

Air Plan list of prohibited materials (from Rule 16.3.3.1)

- a) Chlorinated organic chemicals including, but not limited to, dioxins, furans, polychlorinated biphenyls (PCB);
- b) Contaminated material from contaminated sites and buildings;
- c) Food waste;
- d) Materials containing heavy metals;
- e) Material associated with the recovery of metal from coated or covered cables;
- f) Motor vehicles and vehicle parts;
- g) Materials containing mineral fibres including but not limited to asbestos;
- h) Paint and other surface coatings;
- i) Pathological materials excluding animal carcasses on production land;
- j) Agrichemicals and agrichemical waste;
- k) All plastic, including, but not limited to, polyvinylchloride (PVC), polystyrene, nylon, styrofoam, but not including polyethylene;
- l) Tyres and other rubber;
- m) Timber treated with copper, chrome and arsenic (CCA) or organochlorine preservatives;
- n) Waste oil or other waste petroleum products; and
- o) Sewage sludge and associated solids, or solids derived from liquid-borne municipal, industrial or trade waste.

CL010/o

18 November 2003

Ministry for the Environment
PO Box 10-362
Wellington

Dear Sir

Submission on Proposed National Environmental Standards for Air Quality

On behalf of the Otago Regional Council, I make the enclosed submission proposed NES for Air Quality, released for submission in November 2003.

Yours faithfully

Selva Selvarajah

Director Resource Management

Submission on Proposed National Environmental Standards for Air Quality

To: Ministry for the Environment

Submission on: Proposed National Environmental Standards for Air Quality

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Signed

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Dated 18 November 2003

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Submissions on the Ministry for the Environment's November 2003 Proposed National Environmental Standards for Air Quality

Introductory Comments

The Otago Regional Council welcomes the opportunity to be involved in the development of the National Environmental Standards for Air Quality through the formal submission process.

The following submissions made by the Otago Regional Council are intended to provide positive and constructive assistance to aid in the further refinement of the Standards.

The Otago Regional Council is prepared to play its part in the implementation of the Standards once operative.

The Otago Regional Council has a fully operative Regional Plan: Air that requires all new domestic heating appliances in Otago's urban areas to meet a standard of 4 grams of PM₁₀/kg of fuel burnt. The Plan also bans the burning of a number of identified substances prohibited except in controlled incinerators. It sets specific "Otago Goal" standards for a number of contaminants.

The Otago community debated the full range of air issues, which resulted in the present shape and content of Otago's Air Plan. Having said that, the proposed National Environmental Standards may be considered acceptable to the majority of interested parties in Otago.

Submission Point 1

Page: 10 -15

Provision: 2.3 - 2.7, General

Intention of the Proposed Standards

Council supports the intent of the proposed standards for PM₁₀, NO₂, O₃, SO₂ and CO. There is no Otago Goal level for ozone, because this was not considered as an issue. However, the ozone level control may have significance to other cities in New Zealand.

Submission Point 2

Page: 6

Provision: 2.2.2, Regional planning

Potential enforcement action against councils not making progress

Council understands the intent of the statement in the sixth paragraph, but cannot support it, without Ministry for the Environment prescribing details and avoiding any ambiguity, and the Ministry itself should lead by example by effectively carrying out its functions, powers and duties under the RMA.

The Otago Regional Council requests that:

The document clarify precisely how the Ministry for the Environment will enforce councils to progress the achievement of the standards.

Submission Point 3

Page: 17-22

**Provision: 3.2, Implementation through prohibition
Prohibiting various burning activities**

Council supports the intent of the proposed prohibitions for burning of tyres, road-seal, coated wire, oil, landfill material, school and hospital waste, and high temperature hazardous wastes. Prohibition will assist to improve ambient air quality, as well as reducing local-scale problems that could result in adverse effects on public health. However, the banning of incineration of hospital and hazardous wastes may cause difficulties in disposing of such materials. The Ministry should consider the implications of this and other feasible disposal options.

Submission Point 4

Page: 17-22

**Provision: 3.2, Implementation through prohibition
Prohibiting burning of most plastics**

Council recognises the potential adverse effects of burning of many plastics, but acknowledges the difficulty of disposal of silage wrap, which is made of polyethylene. For this reason, Otago's Air Plan prohibits the burning of any plastic or nylon type compound, with the exception of polyethylene (implicitly in clean condition). Clean polyethylene does not result in hazardous air contaminants when burnt.

The Otago Regional Council suggests that:

Plastics, other than clean polyethylene, be considered for inclusion among the materials affected by the proposed prohibitions.

Submission Point 5

Page: 23 - 24

**Provision: 4, Emission Standard for New Home Heating Appliances
Proposed standard**

Council supports the intent of the proposed 1.5 g/kg standard, because of the expected improvement in ambient PM₁₀ levels. It is necessary only in urban areas, and Council has identified the areas of concern already, through its Air Plan process.

The Otago Regional Council supports.

The proposed emission standard for new appliances should be adopted, and Council supports that the existing identified urban areas as identified by the Regional Plan: Air for Otago be adopted for Otago.

Submission Point 6

Page: 23 - 24

Provision: 4, Emission Standard for New Home Heating Appliances

Meaning of “installed”

Council has had a number of requests to move an existing non-complying appliance within a building, and was asked if this constitutes a new "installation". At present Council believes it might and possibly should be a new installation, because effects on the immediate environment may change, but has made no firm decision. It will be important for the Ministry for the Environment to make a decision on this to avoid doubt elsewhere. It is understood that an appliance that does not meet the standard will be prohibited within those urban areas.

The Otago Regional Council suggests that:

The meaning of the word “installed” be carefully defined to avoid doubt, such as when an appliance is being shifted within a building.