

Chapter 13

AIR QUALITY

PREAMBLE

Air pollution is a form of waste disposal. Like the oceans, the atmosphere has often been treated as a bottomless sink into which pollutants can be poured. Because atmospheric air pollution knows no regional or national boundaries, it is appropriate to consider air pollution in a different category from other waste management problems. Even though interrelated, air pollution is discussed separately from other waste management concerns.

While the international issue of air quality is of considerable interest to the Regional Council, local issues which contribute to the problem are also important. The recent catch phrase "think global, act local" is of relevance here. It is now well substantiated that *greenhouse gases* such as carbon dioxide, are increasing in atmospheric concentrations. This, it is thought, may contribute to global warming. The effects of global warming on the West Coast region are not yet known with any precision but there may ultimately be some climate change and rise in sea level. Also of concern are substances, principally refrigerants, whose effect is depletion of the ozone layer. This layer screens out harmful ultra violet radiation. More immediately pressing air pollution problems stem from aerial drift of fertilisers or pesticides, smoke and dust.

Local effects arise on some winter days, when several West Coast towns have a smog problem. This may manifest itself in the higher incidence of respiratory disorders and poorer health for those at risk. At the same time, the carbon dioxide from domestic and industrial fires contributes to the greenhouse effect. There is a need to encourage a move towards use of more efficient solid fuel burners and use of energy generally. Each of these should result in less pollution.

ISSUE 13.1 The possible effects of greenhouse gas emissions on global climate.

Over the past thirty years it has been evident that the quantity of carbon dioxide and other "greenhouse" gases in the atmosphere has increased. There are a number of scientists who believe that global temperature will rise as a result of this.

The extent of the rise (and indeed its existence) is still being debated but most scientists in this field accept that a one to two degree temperature increase is inevitable. It is still not possible to predict with any certainty what the implications of this are. It is possible that such an increase in temperature may place many low-lying areas at risk from natural hazards such as coastal erosion and flooding. A precautionary approach to development in the coastal environment should therefore be adopted (see policy 10.4.5).

Therefore the possibility of needing to avoid further development in such

areas or to retreat from areas prone to such events should not be discounted. If the climate changes there could be an increase in the severity and frequency of such events. However it will be difficult to attribute these solely to greenhouse gas emissions. It is possible that natural processes such as volcanic activity and decaying vegetation in wetlands are significant contributions to greenhouse gas emissions.

The gases emitted from motor vehicles contribute to the greenhouse effect by changing the atmospheric chemistry in ways that either allow more of the sun's radiation to reach the surface of the earth or increase the ability of the atmosphere to retain heat.

The coal industry is vital to the West Coast economy and the Regional Council recognises its importance. The West Coast also has potential for further electricity generation, which can offset the use of fossil fuels such as coal.

OBJECTIVE 13.1 Avoidance or mitigation of natural hazards that may result from possible global warming.

AIR QUALITY POLICIES 13.1

POLICY 13.1.1 Stabilise greenhouse gas emissions from the region in line with national policy.

POLICY 13.1.2 Ensure that coastal planning decisions take into account the possibility of sea level change.

METHODS

13.1.1 Promote technologies and voluntary initiatives with industry which reduce the production of greenhouse gases, and encourage energy efficiency measures.

13.1.2 Any activity which requires a resource consent for the purpose of discharging contaminants into the air, may be required to limit or reduce such emissions.

13.1.3 Consider preparing an inventory of controllable West Coast greenhouse gas sources and sinks.

13.1.4 Consideration of methods in regional and district plans to limit development in the coastal environment and any other areas which may become vulnerable to flooding and erosion as a result of possible climate change.

EXPLANATION

New Zealand has ratified the international Framework Convention on Climate Change and accepted a commitment to reduce greenhouse gas emissions. The Government has made a commitment to stabilise net carbon dioxide emissions at 1990 levels by the year 2000. Policy 13.1.1 is intended to show that the Regional Council will support the Government in this area.

Cross reference policy 13.1.1
Habitat and Landscape policies 9.1 and 9.2; Coastal Environment policies 10.1.1, 10.1.2 and 10.1.4; Natural Hazards policies; Solid and Hazardous Waste policies 12.1.2 and 12.1.6 and Energy policy 14.3

Cross reference policy 13.1.2
Coastal Environment policies 10.4 and all Natural Hazards policies.

The Regional Council could then implement measures to bring about a reduction in carbon emissions, for example through performance standards in appropriate resource consents.

Policy 13.1.2 acknowledges that problems may arise from locating development in areas prone to sea level rise. It may become necessary to locate permanent development away from such areas.

Although there is little it can do to reduce global emissions of greenhouse gases, the Regional Council is obliged to support the directions of central government. These include reducing greenhouse gas emissions from the West Coast by performance standards on relevant resource consents. If the evidence for possible sea level rise becomes conclusive, methods of limiting development in areas vulnerable to coastal hazards will be implemented through regional rules.

ANTICIPATED ENVIRONMENTAL RESULTS

13.1 Reductions of carbon dioxide emissions.

ISSUE 13.2 Effects of emissions of particles, odour and gases (except greenhouse gases) on air quality, human health and the environment.

Particulate emissions include smoke, dust and debris, whilst unpleasant odours can be generated from sites such as pig farms, freezing works and landfills. Some gases can be directly toxic such as those emitted from rubbish fires or motor vehicle exhaust fumes. Others such as ozone depleting substances can, ultimately, have secondary health effects.

New Zealand has ratified an international agreement to reduce emission of these ozone depleting substances. The Ozone Layer Protection Act 1996 provides for the phasing out in New Zealand by the year 2000 of all but essential uses of *controlled substances* (such as chlorofluorocarbons (CFCs), halons, methyl chloroform and carbon tetrachloride). It calls for restrictions in the use of other, less common, ozone depleting substances.

Disposal of disused refrigerators, and to a lesser extent, air conditioning plant from domestic, industrial, commercial and mobile sources at landfills presents a particular problem with potential for release of ozone depleting substances to the atmosphere.

Three sources of potentially troublesome emissions are considered here.

Domestic area sources

Observations and monitoring of West Coast towns during calm winter weather indicate that emissions from domestic fires sometimes cause smoke to blanket urban areas, often drastically cutting down on visibility. This may be a contributing factor to the region's high incidence of hospitalisation due to respiratory disease. Differences in micro climate mean that the problem is likely to be worse in some West Coast towns than in others.

It is part of the West Coast tradition and lifestyle to use coal and wood for

home heating. Both fuels are cheap and readily available. Many homes have open fire places, which burn less efficiently and produce more smoke than enclosed burners.

Recent monitoring of air quality in Greymouth and Reefton indicates that in calm weather air quality is affected by smoke and sulphur dioxide pollution from wood and coal fires. Pollution, on some days, was at levels where adverse effects on people's health could be expected. Subject to the availability of funding, further air quality monitoring will be carried out by the Regional Council.

There is also the option of promoting greater use of electricity for heating. However, this is often perceived as being more expensive than heating by burning solid fuel. Although that view can be changed through a public education process, it may not be the best option in terms of energy conservation.

Backyard rubbish fires are an issue because they cause smoke and offensive odours. A large quantity of household rubbish is compostable or recyclable.

Non-domestic point sources

It is estimated that there are several hundred sources of industrial and other non-domestic sources of contaminant discharge into the air throughout the West Coast. On their own most of these are insignificant but on a cumulative basis they may be of concern. The larger of these have resource consents. There have been complaints arising from a number of activities. Most, but not all, of these are the result of the operation of coal-fired boilers. Other complaints relate to smoke from landfills and nuisance or adverse health effects from dust, offensive odours, spray painting and sand blasting.

Mobile sources

Motor vehicles, while a major cause of air pollution in cities, are unlikely to be a problem on the West Coast due to its low and scattered population. The exhausts of these vehicles emit carbon dioxide, carbon monoxide, hydrocarbons, nitrogen oxides and other toxic substances. New Zealand is one of the few developed countries that does not yet have emission standards for motor vehicles.

The Regional Council recognises the need to use agrichemicals. However their inappropriate use can cause spray drift away from target areas resulting in adverse effects elsewhere. Examples include water pollution, damage to indigenous habitats and the killing of bees and other non-target fauna and flora. Human health could be affected if drift occurs into areas frequented by the public. Some land owners want to keep their land free of agrichemical spraying. Procedures for achieving this may need to be developed.

Off target effects of spray drift can be prevented by various methods which include spraying only in appropriate weather conditions, using shelter belts to confine drift, using the correct equipment, ensuring that the target area is positively identified (for aerial spraying) and careful planning of target

locations. Spraying from aircraft and other motorised equipment needs to be carried out with particular care because of the greater volumes of spray and the increased potential for drift.

OBJECTIVE 13.2 Maintenance or improvement of air quality at or to levels that safeguard human health, environmental quality and amenity values.

AIR QUALITY POLICY 13.2

Standards in the Ambient Air Quality Guidelines will be used as the lowest allowable limit of air quality on the West Coast.

METHODS

- 13.2.1 Promote the need to maintain or improve air quality through education, publicity and displays.
- 13.2.2 Promote the use and correct operation of cleaner solid fuel burners in place of less efficient forms of heating, such as open fires.
- 13.2.3 Support any national guidelines or initiatives to limit emissions from motor vehicle exhausts.
- 13.2.4 Monitor ambient air quality. Preparation of inventories of area air pollution sources is also a possibility.
- 13.2.5 Consider the preparation of a register of areas sensitive to agrichemical spraying.
- 13.2.6 Manage air quality through rules in the *Regional Air Quality Management Plan* and encouraging compliance with selected codes of practice.
- 13.2.7 Promote the use of West Coast collection facilities for ozone-depleting refrigerants.
- 13.2.8 Support any national and international initiatives to limit emissions of ozone depleting substances.
- 13.2.9 Consider the use of economic instruments such as tradeable air discharge permits to ensure that the discharge of contaminants from multiple sources does not result in the lowering of air quality beyond a defined threshold.
- 13.2.10 Ensure that the emission of greenhouse gases caused by land transport are addressed in the Regional Land Transport Strategy.

EXPLANATION

Ambient air quality monitoring is important because it indicates the presence or absence of situations likely to adversely affect human and environmental health. Results can also be used to decide what measures, if

Cross reference policy 13.2.1
Habitat and Landscape policies 9.1, 9.2 and 9.4; Coastal Environment policies 11.1.1, 11.1.2 and 11.1.4; Solid and Hazardous Wastes policies 12.1.2 and 12.1.6 and Air Quality policies.

any, are needed to combat adverse effects. Policy 2.1 is intended to ensure that air quality meets national guidelines (Ministry for the Environment, 1994), which have been set mainly for the protection of human health.

Consideration will be given to the preparation of inventories of air pollution sources where air quality has been found to be low. Where problems are seen to exist, promotion, encouragement and education will be the preferred methods of improving air quality.

There is a public expectation that air quality needs to be maintained. Experience has shown that the full range of options, including regulation, needs to be available to the Regional Council. Resource users require clear policy directions on air quality management. An absence of policy would reduce decision making to an *ad hoc* basis.

Development of regional objectives and policies on ozone depletion in this RPS have been considered but this would result in duplication of provisions of the Ozone Layer Protection Act 1990. The Regional Council will direct those decommissioning air conditioning and refrigeration plants to make use of existing CFC recovery facilities in the region.

ANTICIPATED ENVIRONMENTAL RESULTS

13.2.1 Enhancement of urban air quality.

13.2.2 Increased numbers or increased frequency of use of regional CFC degassing facilities.

13.2.3 Maintenance of air quality at levels compatible with national guidelines.