IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010

AND

IN THE MATTER of the proposed Canterbury Air Regional Plan

REPORT AND RECOMMENDATIONS

OF THE

HEARING COMMISSIONERS

Hearing Commissioners:

Sir Graham Panckhurst

Ms Jenny Simpson

Ms Yvette Couch-Lewis

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Chapter 1

The Proposed Canterbury Air Regional Plan

1.1 Introduction

[1] The Proposed Canterbury Air Regional Plan (pCARP) is to replace Chapter 3 of the Canterbury Natural Resources Regional Plan entitled "Air Quality". This chapter governed air quality management in Canterbury from October 2009, when the chapter became partly operative, and fully operative from June 2011.

[2] The pCARP is not only a stand-alone document and plan but also introduces an approach to air quality management somewhat different to that adopted in the old Chapter 3. While the coverage and subject matter is similar, the style of the pCARP is quite different. The previous plan was much more expansive, in that the thinking and key reasons behind the Regional Council's decision making were set out and explained. The previous plan also contained an outline of the results anticipated from application of the plan provisions. In consequence Chapter 3 ran to over 300 pages inclusive of appendices, schedules, figures, tables and maps. The pCARP is shorter having less than half the pages of its first generation predecessor.

[3] Although submitters challenged numerous aspects of the pCARP, issue was not taken with the style and layout of the document. Rather, submissions were directed to the substantive provisions, including the content of the schedules and the various maps. The Panel considers that the revised format of the pCARP is generally fit for purpose, subject however to various substantive changes required to the plan provisions and supporting sections themselves. We think that acceptance of the revised plan format indicated a public appreciation that the new iteration builds upon the old, making it unnecessary to explain the thinking behind the plan provisions as was done previously.

[4] The Resource Management Act 1991 (the RMA), Schedule 1 in particular, prescribes the process to be followed in relation to the review of resource management plans. The Panel notes the following key milestone dates relevant to the pCARP:

2013	A review of the Canterbury Air Plan commenced
2014 – June	A draft pCARP was released for consultation
2015 - 19 February	The Canterbury Regional Council (the Council) adopted the pCARP and associated s.32 report
2015 - 28 February	The pCARP was publically notified
2015 - 1 May	The closing date for public submissions upon the pCARP
2015 - 13 June	A summary of decisions requested was released to submitters
2015 - 29 June	Closing date for further submissions
2015 - 28 August	Section 42A report released to submitters
2015 27-30 October 2-6 and 9, 11 and 12 November	Submitters heard at public hearings
2016 – 11 March	Section 42A Reply Report provided by the Council officers
2016 – 4 April	Reply hearing conducted

1.2 The Hearing Process

[5] On 25 June 2015, acting under Section 34A of the RMA, the Council appointed us as the Hearing Commissioners to make recommendations to the Council on the public submissions to the pCARP. To that end we were delegated all the powers, functions and duties of the Council needed to conduct the hearings and report our recommendations. For the avoidance of doubt we record that prior to our appointments we had no involvement in the preparation of the pCARP.

[6] A total of 312 submissions (and 62 further submissions) upon the pCARP were filed from a broad spectrum of submitters. The submitters included the Christchurch City Council and a number of District Councils, government departments, public and private companies, environmental interest groups and numerous individuals. Many contributors took advantage of the further submission process to agree with, or distance themselves from, the submissions of other submitters. In addition, over 80 entities or individuals made a request to be heard in person in support of their written submission.

[7] The public hearings occupied 12 days. The hearings were held at the Lincoln Event Centre, save for a half day hearing at Timaru at which a Council, two companies and a number of individual submitters were heard.

[8] Submitters were invited to speak to their filed submissions and were allocated speaking time based on an estimate they provided and the Panel's assessment of a fair time given the extent and content of the individual submissions. We endeavoured to conduct the hearings with a minimum of formality, but in a manner that encouraged constructive participation. Panel members questioned submitters, including with reference to submissions advanced by or on behalf of other participants.

[9] An audio record of the hearings was maintained and this was available to submitters on the Council's website on a day to day basis. This service was obviously well utilised as it became apparent to the Panel that many presentations included responses to discussions and questioning that had occurred on earlier hearing days. The audio record also enabled the Panel, and submitters on application, to receive a transcribed version of portions of the evidence considered to be of particular significance.

[10] Following the conclusion of the main hearings on 26 November 2015 the Panel issued a Minute on 2 December in which it identified various concerns, including as to the clarity and workability of the rule framework in the notified version of the plan and whether substantive changes were needed to several identified aspects of the pCARP.

[11] A further Minute dated 10 December also addressed to the Council officers responsible for the preparation of the pCARP sought the provision of redrafts of two policies, and two associated rules. The Section 42A Report had identified that these provisions (Policies 6.20 and 6.21 and Rules 7.18 and 7.19) needed to be recast, but this had not been achieved prior to the public hearings. The Panel required that redrafts be posted to the website by 18 December 2015 and allowed affected submitters until 12 February 2016 to respond to the redrafts. Twelve corporate submitters filed responses.

[12] The hearing process was completed after the Officers' Reply evidence was tabled on 11 March with a reply hearing conducted on 4 April 2016.

1.3 The Approach of the Panel

[13] **Submissions struck out:** Three of the original submissions filed by individual submitters did not relevantly address provisions of the plan, and were struck out pursuant to s.41C (7) of the RMA in advance of the hearings. Otherwise the submissions were relevant, constructive and sought changes to the pCARP for reasons explained by the submitters. We record our thanks to submitters for the time and effort they put into their submissions. Consultation and public participation are integral elements of the process for the development and review of resource management plans. We also acknowledge the significant benefit we gained from the submissions generally, and particularly from the input of those experts, counsel, witnesses and submitters from whom we heard at the public hearings.

[14] **No presumption either way:** We have conducted the hearings and considered the submissions, on the basis that there was no presumption in favour of the provisions as drafted in the notified version of the pCARP. Rather that our function was to consider all relevant material afresh and determine how the pCARP should be structured and drafted to best meet the purpose and principles of the RMA. There was no onus on the proponents to demonstrate the appropriateness of the plan provisions, nor onus upon submitters to demonstrate the reverse. Instead we, the Panel, have a responsibility to provide a report containing recommendations for such changes to the plan as we consider are needed in light of all that we have heard and read.

[15] **Scope:** The scope to make changes to the pCARP is governed by Schedule 1 to the RMA, in particular clauses 10 and 16. These must be read in the context of the Schedule as a whole. The Schedule requires that councils, following the preparation of a proposed plan, consult affected Ministers of the Crown, local authorities and iwi before public notification of the plan occurs. Then there is a public submission process and, ordinarily, a hearing followed by a decision on matters raised in the submissions. Clause 10(2) provides that the decision "must" provide reasons for accepting or rejecting the submissions; and that it "may" also contain "consequential alterations" and "any other matter" relevant to the plan "arising from the submissions". Clause 16(2) enables amendments to "alter any information of minor effect" and to "correct any minor errors".

[16] There is an obvious inter-relationship between the consultation requirements and the power to change provisions in the plan. Changes must arise from the submissions, so that when the plan becomes fully operative there are no surprises, or put another way the intricate consultation requirements are not thwarted. The Panel closely considered the relevant Schedule 1 provisions in order to settle our approach to making plan changes, particularly in relation to inclusion of "any other matter relevant to the proposed … plan arising from the submissions". The words "arising from" describe the gateway. They are everyday words, and not particularly confining. The wording implies that a submission must provide the impetus for an inclusion, but not necessarily the precise content. A submission raising concern about some feature of the plan may, therefore, prompt the inclusion of some matter relevant to addressing that concern. We also concluded it was appropriate to differentiate between the narrative sections of the plan, and the substantive provisions, being the definitions, objectives, policies, rules and the associated schedules and maps. The narrative sections (The Introduction, description of How the Plan Works and Issues of Significance to Ngāi Tahu) provide information for users of the plan, in particular for members of the public as opposed to resource management practitioners.

[17] We considered that it was appropriate to use Clause 10(2)(b)(ii) liberally to make changes to these sections on any matter of relevance arising from the submissions. In the result these sections have

been significantly revised to make them more succinct and easier for a member of the public to understand. On the other hand, we consider that resort to the "any other matter" provision is less apt in relation to the substantive provisions. A number of provisions were the subject of closely focussed submissions and argument concerning both their content and drafting. Recommended changes reflect our decisions on the merits of these submissions; being decisions that substantively affect the interpretation and requirements of the rules and thereby the obligations upon dischargers.

[18] **Section 32AA: Further Evaluation**: As required by the RMA, the pCARP (as notified) was supported by a separate report dated March 2015 by which the proposed provisions were the subject of a full evaluation under Section 32 of the Act. Likewise the Reply report prepared in March 2016 by the Council officers included a further evaluation in relation to substantive changes recommended at that point in light of evidence and developments arising as a result of the public hearings. Pursuant to Section 32AA we must provide a further evaluation, but only in relation to any recommendation in which we propose a substantive change to the Plan. Since we understand that this report will become part of the decision-making record[1], our evaluations have been undertaken at a level to comply with the requirements of Section 32(1) to (4) of the Act.

[19] We shall approach this evaluation obligation:

- by identifying any substantive change proposals in the course of narrative Chapters 4 to 8, and
- by providing an evaluation within the narrative at a level of detail that corresponds to the scale and significance of the recommended change.

[20] Changes to objectives will be evaluated with regard to whether they achieve sustainable management as defined in the RMA[2] and changes to policies and rules according to whether they are the most appropriate way to achieve the Plan objectives[3].

[21] The great majority of our recommendations do not propose a substantive change to a Plan provision, and do not therefore require an evaluation. Rather they seek to improve the layout and expression of the provisions, effect minor or consequential alterations or respond to other matters arising from the submissions. The narrative chapters include comments to indicate into which of these categories the numerous non-substantive changes fall.

[22] **Report division:** This report is divided into three parts:

- this introduction and the following chapter that sets out the legal context;
- a narrative in which we sequentially discuss and explain our conclusions and recommendations in relation to the plan provisions as a whole; and
- appendices which show the plan provisions as notified, and highlight the changes recommended by the Panel to the provisions.

[23] **The response to submissions:** Submissions from members of the public, whether bodies or individuals, must be "on" the plan and seek a "decision from the local authority" with regard to a specific provision, or provisions, of the plan. In turn, the local authority must give a decision on the

[1] s.32AA(1)(d)(ii): RMA
[2] s.32(1)(a): RMA
[3] s.32(1)(b): RMA

matters raised in the submissions. However, there is no obligation to provide a decision "that addresses each submission individually". Obviously, given the number of submissions, and further submissions, filed in relation to the pCARP, it is not practical to respond to every single submission point.

[24] Nonetheless, the report is written so that in effect it provides a response to all submissions. This is done through a combination of this introduction and the narrative discussions; and the response to submissions appendix. The former sets out and explains the Panel's conclusions upon challenged elements of the pCARP, while the submissions appendix notes in a shorthand manner whether a submission point has found acceptance, or not, as the case may be. Hence, read together, the report reasoning and the appendix respond to the submissions.

[25] **Abbreviations:** It is convenient to set out at this point a number of abbreviations used in the report.

Abbreviation	**Full Name / Designation**
AAAQS	Ambient Air Quality Standard set in the National Environmental Standards For Air Quality.
CAZ	Clean Air Zone, being an area surrounding and including an Airshed (as depicted in Schedule 9 Clean Air Zone Map Series).
The Council or CRC	Canterbury Regional Council.
pCARP or 'The Plan'	Proposed Canterbury Air Regional Plan.
LEB	Low emitting enclosed burner, being an enclosed solid fuel burning device meeting the emissions and efficiency standards specified in the pCARP.
NESAQ	National Environmental Standards For Air Quality
NRRP	The Canterbury Natural Resources Regional Plan
RMA	Resource Management Act 1991.
RPS	Canterbury Regional Policy Statement 2013.
S42A Report	Proposed Canterbury Air Regional Plan – Section 42A Report Report prepared by Canterbury Regional Council staff pursuant to Section 42A of the RMA.
S42A Recommendations	Tracked changes version of the pCARP provisions prepared by Canterbury Regional Council staff as part of the S42A Report
ULEB	Ultra-low emitting enclosed burner, being an enclosed solid fuel burning device meeting the emissions and efficiency standards specified in the pCARP.
WHO	World Health Organization.

Chapter 2

General Legal Context

2.1 The Regulation of Air Quality in New Zealand

[26] There is a statutory and regulatory framework applicable to the management of air quality in New Zealand. Readers of this report require at least a basic understanding of this framework in order to appreciate the structure of the pCARP and perhaps some aspects of the narrative discussion in the second part of the report. The framework is outlined in bare detail below.

2.2 Section 15 of the RMA

[27] This section provides for the discharge of contaminants into the environment. A contaminant is relevantly defined in Section 2 (1) as follows:

> *"...**Contaminant** includes any substance (including gases, odorous compounds, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat - …*
>
> > *(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged"*

[28] Section 15 (1) (c) relevantly provides:

> *No person may discharge any*
>
> > *(c) contaminant from any industrial or trade premises into air; or …*
>
> *…"unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent."*

[29] It is important to note that s.15(1) relates only to discharges from "industrial or trade premises", a term that is defined in the Plan definitions. This means that while industrial and trade discharges are prohibited unless otherwise expressly allowed; discharges from other sources are not. In other words discharges from all other sources are permitted as of right and without the need for a resource consent, unless a national environmental standard or a rule in an air plan stipulates controls applicable to discharges from the particular source. Obviously this important distinction affects the drafting of air plans. Provisions must be included to govern the raft of industrial and trade discharges occurring within a region of Canterbury's size, whereas discharges from other sources need only be included where it is determined that some level of control is required. Other sources include, for example, domestic discharges from heating appliances, residential outdoor burning and agricultural discharges not emanating from premises of some kind.

[30] Subsections (2) and (3) of s.15 enable the inclusion of provisions in regional air plans to control discharges from other sources. These subsections prohibit discharges occurring "in a manner" that contravenes a national environmental standard, on a regional rule, respectively; unless the discharge is expressly allowed by regulation, a resource consent, or as a permitted activity. Hence there are both national, and regional, pathways, for the control of discharges from all other sources. The

former pathway gave rise to the regulations considered next.

2.3 The Resource Management (National Environmental Standards for Air Quality) Regulations 2004

[31] These regulations, often abbreviated to NESAQ, established air quality standards relevant to the control of a range of contaminants throughout New Zealand. At this point we refer to some of the concepts and requirements, since they shape the contents of air plans nationally.

[32] The first part of the regulations restricts the burning of landfill waste, tyres, bitumen, coated wire and oil; save for some limited exceptions or where a resource consent is obtained.

[33] The next part imposes ambient air quality standards, or limits, for a range of contaminants in airsheds. Airsheds are designated areas within the region of a council where people will be exposed to contaminants. Schedule 1 defines the thresholds, or limits, for various contaminants namely: carbon monoxide, nitrogen dioxide, ozone, sulphur dioxide and PM_{10}. Regional councils must monitor the air quality in airsheds if breaches are likely and, in the event of their occurrence, provide public notice of the breach.

[34] PM_{10} receives particular attention. PM_{10} is particulate matter, being airborne dust-like matter less than 10 micrometres (microns) in diameter. A major source of PM_{10} is the burning of solid fuel in domestic heating appliances, for example wood burners. Meaningful PM_{10} data must be gathered in airsheds where the ambient air quality standard is likely to be exceeded and the number of exceedances per annum recorded by regional councils. The third part of the regulations governs the grant of resource consents for PM_{10} discharges. A council must decline a consent application if its grant would likely increase the PM_{10} concentration by more than 2.5 micrograms per cubic metre in any part of a polluted airshed. However, if the applicant can show that a reduction (or offset) in PM_{10} discharged is achievable from another source, or sources, in the airshed the consent may be granted.

[35] Another part of the regulations deals with wood burners. Discharges from older style wood burners are prohibited if the appliance does not meet a PM_{10} discharge limit per kilogram of dry wood burnt and also achieve a thermal efficiency standard. And, since 2011, if the PM_{10} standard within an airshed has been breached councils have been required to impose a ban on the use of new open fires installed in homes after the date of the breach.

[36] The final regulation in the NESAQ provides that a more stringent rule, resource consent, or by-law prevails over an NESAQ regulation. Hence the regulations impose minimum standards that regional councils may trump through the imposition of more stringent controls.

2.4 Section 44A(8) of the RMA

[37] Part 5 of the RMA includes a section on the prescription of national environmental standards and their contents and effect. Relevant for present purposes is s.44A(8) which provides:

> *"Every local authority and consent authority must enforce the observance of national environmental standards to the extent to which their powers enable them to do so"*

Regional councils fall within the definition of a local authority.

2.5 Regional Policy Statement

[38] Regional councils are required by the RMA to prepare and promulgate a regional policy statement. The purpose of a regional policy statement is defined in s.59:

> *"The purpose of a Regional Policy Statement is to achieve the purpose of the Act by providing an overview of the resource management issues of the region and policies and methods to achieve integrated management of the natural and physical resources of the whole region."*

[39] The Canterbury Regional Policy Statement 2013 is a revision of its predecessor. Chapter 14 is devoted to air quality. The chapter contains two objectives, namely:

> *"**Objective 14.2.1** - Maintain or improve ambient air quality so that it is not a danger to people's health and safety, and reduce the nuisance effects of low ambient air quality."*
>
> *"**Objective 14.2.2 -** Enable the discharges of contaminants into air provided there are no significant localised adverse effects on social, cultural and amenity values, flora and fauna, and other natural and physical resources."*

[40] These objectives are supported by policies, two related to objective one and three to objective two. In turn the policies are supported by methods whereby the Council indicates how it will implement each of the five policies and, thereby, seek to achieve the objectives.

[41] Important for present purposes is Section 67(3)(c) of the RMA. The section provides that the Council in reviewing the management of air quality in Canterbury "*must give effect to …any regional policy statement*". We shall refer to the content of the 2013 Regional Policy Statement as and when required to ensure that the pCARP does give effect to its terms.

2.6 Matters outside the scope of the pCARP

[42] A number of submitters advanced contentions that were beyond our jurisdiction as Commissioners in writing a report recommending changes to the pCARP. The various submissions sought changes to air quality related matters, but matters not within the control of regional councils and therefore not able to be changed in the review of an air quality plan. We shall briefly mention each of the areas raised by submitters.

2.6.1 *Climate Change (s.70A of the RMA)*

[43] Although a key defined function of regional councils is to control the discharge of contaminants into air (see s.30(i)(f) of the RMA), s.70A of the Act provides that in making rules for discharges of greenhouse gases, regional councils "must not have regard to the effects of such discharge(s) on climate change". Hence, generally, climate change issues remain within the domain of central government.

[44] There is one exception. In relation to the use and development of renewable energy regional council decision making may include whether the proposed activity will enable a reduction in the discharge of greenhouse gases (s.70A). Renewable energy is defined in the RMA, s.2, as "energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources". Therefore, the Plan could, for example, encourage the use of biomass burning in preference to non-renewable energy sources. Given the air quality issues in the Canterbury region associated with burning wood for domestic heating, the Plan does not make this distinction.

2.6.2 *Modification of the NESAQ Regulations*

[45] PM_{10} is a health hazard on account of the size of particulate matter. Being less than 10 microns PM_{10} is small enough to enter the tiniest recesses of the respiratory system. Natural sources of PM_{10} include dust and sea salt; while the significant man-made sources include home heating, vehicle emissions and some industrial processes.

[46] A significant number of submitters challenged aspects of the NESAQ provisions on the basis that they were misconceived and out of step with present day science. Two themes, in particular, were advanced:

(a) that the regulations should be refocussed upon $PM_{2.5}$, not PM_{10}, because medical science indicates that exposure to $PM_{2.5}$ causes more severe health effects, and
(b) the regulations are also wrongly focussed on short-term exposure to PM_{10} over a 24 hour period, when a better approach is an exceedance rule aimed at long-term exposure to the even finer $PM_{2.5}$ particles.

These themes were advanced on the basis of authoritative reports from the World Health Organisation and the New Zealand Parliamentary Commissioner for the Environment.

[47] We do not question the validity of the arguments. They were well framed and received authoritative recent support from respected local and overseas authorities. The key point from the Panel's perspective, and indeed from the Council's perspective, is that the NESAQ regulations remain in force in New Zealand. The Council is bound to enforce these national environmental standards (see section 2.3) as they exist, not as they might be refocussed in the future. We shall, however, return to this dilemma when considering the contentious rules applicable to space heating appliances, this being the aspect of the plan that most excited criticism of the NESAQ.

2.6.3 *Vehicle Emissions*

[48] Some submitters contended that the Council was remiss in not confronting the reality that motor vehicle emissions are a significant contributor to ambient air contamination from PM_{10}. There are two points to be made in response to this contention.

[49] First is the obvious point that the management of vehicle emissions is problematic. Other contaminant sources are static, being for example discharges from factories, private properties or farms. Controls can be imposed in relation to such sources and discharge levels can be monitored. Vehicles, by contrast, move from region to region putting them beyond the control of a single regional council.

[50] As a consequence the management of vehicle emissions is the domain of central government. To date improvements to fuel quality and stricter emission standards for vehicles have been the main initiatives employed by successive governments. We note that the Land Transport Rule: Vehicle Exhaust Emissions, 2007, is due for greater review this year.

[51] Second, the contribution of vehicle emissions to PM_{10} exceedances is overstated if described as "significant", with the exception of urban Christchurch. This is demonstrated by the Council's analysis that motor vehicle emissions contribute 20% of winter weekday PM_{10} emissions in Christchurch compared to 57% for home heating (based on 2013 data) whereas the comparable figures for Timaru are 7% for motor vehicle emissions and 88% for home heating.

[52] We heard evidence that in 2015 the Auckland Council rejected a proposed bylaw that would ban the use of open fires and older style woodburners in Auckland. However, it is our impression that the situation in Auckland is materially different to Christchurch. In particular, we note that the estimated contribution of motor vehicles to PM_{10} emissions in Auckland is relatively greater (49%) than home heating (42%)[4]. A focus on motor vehicle emissions would be clearly justified in the Auckland context, but we are not convinced that the same holds true in Canterbury where home heating emissions are clearly the dominant source of PM_{10} emissions.

2.6.4 *Airshed Boundaries*

[53] We have already referred to airsheds in the context of the NESAQ regulations (see paragraphs [33] to [35]). They are a creature of these regulations used to identify areas within a region where air quality is compromised and, therefore, subject to the monitoring and compliance regime established by the NESAQ. A number of submitters contested the appropriateness of the boundaries as drawn to define the eight airsheds within the Canterbury region.

[54] While regional councils must consider where airsheds should be located within their region, the final decision to establish, and the boundaries of, the airshed lies with the Minister for the Environment. He or she has the final say in establishing and defining the location of the airshed by notice in the Gazette. Accordingly, the Panel is constrained by this regulatory process. We may recommend that the Council promote the establishment, or variation, of an airshed, but any actual change to the pCARP is dependent on the Minister's decision.

2.6.5 *Adequacy of Monitoring Sites*

[55] Some submitters questioned the adequacy of the ambient air quality monitoring operated by the Council, particularly with respect to the limited number of monitoring sites and their representativeness of wider air quality within the airshed. As an example, the Waimate District Council was concerned that there was only one monitoring site located in the most likely highly polluted area of Waimate, which could penalise other areas within the Clean Air Zone where the air emissions may be complying.

[56] We accept the points made by Waimate District Council and others that air quality will vary across an airshed and may be substantially better in some locations than that measured at the sites established by the Council. However Regulation 15 of the NESAQ, which sets out the regional council's obligations to undertake monitoring, requires councils to monitor in that part of the airshed where:

(a) there are one or more people; and
(b) the standard is breached by the greatest margin or the standard is breached the most frequently, whichever is the most likely.

[57] We understand that the monitoring locations selected by the Council have taken these factors into consideration and are consistent with the NESAQ. While it may be beneficial to have a better understanding of the spatial variation in air quality across the airsheds, there are practical limitations

[4] Auckland Council Regulatory and Bylaws Committee Open Minute Item Attachment 9 Air Quality Update. 3 June 2015.
http://infocouncil.aucklandcouncil.govt.nz/RedirectToDoc.aspx?URL=Open/2015/06/RBC_20150603_MAT_5906.PDF

to where monitors may be located. The Council also needs to balance the costs and benefits of installing additional monitors. Ultimately, because the NESAQ is focused on achieving compliance at the worst case location, we do not find that the absence of data about other locations undermines the management framework set out in the pCARP.

2.7 Other Statutory Requirements

[58] As noted earlier the RMA provides the statutory framework that governs the preparation of regional plans. Schedule 1 to the Act specifies the consultation, public notification and submission/hearing processes; while Sections 63 to 71 identify the purpose, matters to be considered and contents of plans, and the rule-making authority of regional councils. We need not detail those provisions.

[59] Other provisions of the RMA, or provisions in other legislation, do or may affect the content of the pCARP as follows:

- coastal marine areas are ring fenced in the RMA so that coastal air quality is not controlled in regional air plans, rather under regional coastal plans and the Marine Pollution Regulations 1998;
- trade competition, and its effects are not relevant to the preparation of an air plan;
- On the other hand, planning documents recognised by an iwi authority must be taken into account, if relevant to an air plan;
- National Policy Statements for Electricity Transmission 2008 and Renewable Energy Generation 2011 must likewise be given effect to in an air plan; and
- the Lyttelton Port Recovery Plan approved under the Canterbury Earthquake Recovery Act 2011 necessitates the introduction of a new policy and a new rule, and a rule change, in the pCARP, matters to which we will refer as required in the narrative section of the report.

[60] The Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 provides to the Council certain powers and protections when it comes to making plans in the Canterbury region. As required in s.63 of the Act we have considered the Air Plan against the vision and principles of the Canterbury Water Management Strategy in Schedule 1 to the Act. We are satisfied that the Plan contains nothing inconsistent with, nor provisions that might frustrate, the outcomes sought through the vision and principles of the Strategy.

Chapter 3

Plan Structure, Clean Air Zones and the Introductory Sections of the Plan

3.1 Introduction

[61] Before we begin a narrative discussion directed to the substantive plan provisions there are two over-arching matters that have reshaped the Plan to some degree and they require explanation; as do changes that we recommend to the introductory sections of the Plan. The over-arching matters are plan structure and the spatial concept of Clean Air Zones (CAZs). The introductory sections comprise:

- The Introduction: Understanding the Canterbury Air Regional Plan
- Issues of Significance of Ngāi Tahu
- How the Plan Works
- Definitions and Abbreviations

[62] The Plan structure discussion explains the Panel's general approach to revising objectives, policies and rules. In relation to CAZs we explain the significance we attach to this spatial concept and why our recommendations place an increased emphasis on using the concept as a cornerstone of the Plan provisions.

[63] The Panel considered that the first three introductory sections of the Plan required some revision. As discussed earlier (paragraphs [15] to [17]) we think clause 10(2)(b)(ii) of Schedule 1 to the RMA provides scope to do this. Under the sub-clause we may include changes on "any other matter" relevant to the Canterbury Air Regional Plan arising from the submissions. Any number of submissions raised concerns about aspects of the Plan or matters not recognised for inclusion. Where we concluded such concerns had significant merit we weighed up whether it was appropriate to include them in these early sections, if not the Plan provisions.

[64] Matters including the $PM_{2.5}$ debate, the theme that improved air quality is necessarily a long term objective and the need for a balanced approach (all now a focus of the Introduction), were revised or introduced in response to submissions of the kind discussed above. By contrast, the Definitions and Abbreviations section is not revised or influenced in a similar manner. Its contents are integral to the interpretation of the Plan provisions. We viewed the "any other matter" clause with reserve, when the regulatory rights and obligations of Plan users were at stake.

3.2 Clean Air Zones

[65] A key spatial concept that underpins the Plan is the division of the Canterbury region into three distinct geographical areas: airsheds, clean air zones (CAZs) and the area outside CAZs.

[66] The regulatory requirements upon regional councils to monitor air quality and, where NESAQ pollution levels are not met, to trigger the process for the designation of an airshed are explained earlier (see paragraphs [53] to [54] above). At present Canterbury has eight airsheds, being Christchurch, Rangiora, Kaiapoi, Ashburton, Timaru, Geraldine, Waimate and Washdyke.

[67] The Canterbury Regional Council successfully used the CAZ concept under the previous air plan.

As the name implies the aim was to ensure that clean air prevailed in a zone that surrounded, and included, each airshed. Controls specific to a CAZ then applied not just to the polluted airshed itself, but also to what might be termed an area of influence surrounding the airshed as well. Because discharges to air are dynamic due to atmospheric factors it is essential to control air quality over an extended zone if airsheds are to become compliant under the NESAQ.

[68] Everywhere outside the CAZs comprises the third spatial area. This is most of the land area within the Canterbury region, comprising mainly farm land but also a significant number of small towns. Less stringent controls upon discharges into air apply outside the CAZs because air quality throughout this large area is generally good.

[69] An associated spatial concept used in the pCARP is a divide between properties of 2ha or more in area and those under this size limit, both within and outside CAZs. This concept recognises that properties of 2ha or more are, on account of their size, able to internalise at least some adverse effects arising from contaminant discharges into air. This may justify some relaxation in the controls on discharges emanating within these larger properties, by comparison to the controls required for smaller residential properties.

[70] The pCARP as notified included a number of provisions applicable within, or outside, CAZs and also provisions drawn with reference to the 2ha size divide. However, in other instances rules applied to either rural, or urban, areas. The Panel concluded that the introduction of this further demarcation was unnecessary. Submitters had questioned the adequacy of the pCARP definition of urban, while a definition of rural was not proffered. Our appraisal of the rules indicated that abandonment of the urban/rural division was appropriate, since the CAZ and 2ha divides provided a more workable framework for graduated area based controls. For these reasons the spatial criteria for the application of some rules, particularly in the outdoor burning section, have been revised to adopt a CAZ / 2ha framework and avoid the introduction of a rural/urban based approach.

3.3 Plan Structure

3.3.1 *Objectives and policies*

[71] In recommending changes to the Objectives we have tried to ensure that they each describe the intended "end-state". The policies describe how these objectives will be achieved. In some cases we have made minor changes to the policies so that they are framed in terms of actions and to improve consistency and clarity. Unless specifically discussed in this report, these minor changes do not affect the substance of the notified provisions.

3.3.2 *Rules*

[72] For ease of navigation, we have recommended re-ordering the rules, particularly those related to discharges from industrial and trade processes. We have also recommended changes to the headings and subheadings so that the rules are more clearly grouped into categories (and sub-categories where appropriate).

[73] The s42A recommendations included additional subheadings above many of the rules. We have recommended removing most of these as we were concerned that they may be considered to form

part of the interpretation of the rules[5].

[74] Where appropriate, we have recommended re-ordering the rules so that each category (or sub-category) is self-contained and follows the same general order of the permitted activity rules being stated first, followed by rules with increasing levels of control and discretion. The "drop-out" rule(s) for activities that do not meet the conditions of a rule follow immediately after that rule (or suite of rules where that is more appropriate). Unless otherwise discussed in this report, the recommended re-ordering of rules or introduction of new drop-out rules is intended only to improve the usability of the Plan, and does not affect the substance of the pCARP as notified.

3.4 The Introductory Sections of the Plan

3.4.1 *The Introduction: Understanding the Canterbury Air Regional Plan*

[75] The Panel saw this section as having a "scene-setting" role. We asked the question: what basic information did plan users need to have in order to understand and apply the regulatory provisions of the Plan. We had in mind the man in the street, not a resource management practitioner. Using this test we turned to the submissions and identified a number of basic matters that underpin an air plan and which required explanation if our scene-setting goal was to be achieved. Before we refer to the changes made we acknowledge an important advantage enjoyed by us.

[76] The pCARP was prepared without input from members of the public. Schedule 1[6] requires regional councils during the preparation of a Plan to consult with the Crown, affected local authorities and tangata whenua of the affected area. But only after a plan is prepared and adopted by the Council does public notification occur. This initiates the submission process, which culminates in a public hearing at which those who wish to be heard speak to their submission and respond to questions. It follows that we, the Panel, enjoy a distinct advantage in relation to judging not only the general level of public understanding, but also the issues that are essential to obtaining a working understanding of this Air Plan. We acknowledge this before we set-out the nature and extent of the changes that we recommend.

[77] It is convenient to compare the Introduction in the pCARP (as notified), and the Introduction we recommend, by listing the sub-headings used in the respective versions.

pCARP as notified	**pCARP Panel Recommendations**
Air quality issues in Canterbury - PM_{10} - Health impacts Polluted Airsheds	The purpose of the Plan Air Quality in Canterbury
Contaminants Sources of Contaminants	Types of Contaminants Sources of Contaminants

[5] Section 5(2) and (3) Interpretation Act 1999
[6] RMA, Schedule 1 Clause 3

pCARP as notified	pCARP Panel Recommendations
Outdoor Burning and Rural Discharges of Contaminants Industrial and large-scale discharges of Contaminants	The Understanding of Air Quality - Complexity - The $PM_{2.5}$ debate When will good Air Quality be assured?
Home heating Motor Vehicles	A Balanced Approach Key Management Responses for Air Quality
Key Management Responses for Air Quality Non-regulatory Programmes	The Statutory Planning Framework Section 15 of the RMA
The Statutory Planning Framework Working with Key Partners	The NESAQ Working with Key Partners
	Non-regulatory Programmes Two Factors that have Shaped the Plan - The earthquakes - Growth in Farming Activity
	Structure of the Plan Clean Air Zones (CAZs): A Spatial Concept that Underpins the Plan Crop Residue Burning Buffer Areas

[78] We shall explain the recommended sub-heading topics, the changes we propose, and refer to the pCARP topics that are deleted from our recommended version.

[79] **The Purpose of the Plan:** We recommend this subheading and a revised approach to provide a broad overview of purpose, including references to the RMA and the generational role of Ngāi Tahu. We considered the emphasis in the pCARP opening paragraphs upon the non-regulatory work programme to be premature, particularly as this topic was covered later in the introduction under its own sub-heading.

[80] **Air Quality in Canterbury:** We consider that this topic is best renamed (by deleting reference to "issues") and revised to provide a more introductory description of Canterbury's air quality. We recommend that the issues discussed in the pCARP (being PM_{10} and health impacts) are better dealt with under the next sub-heading, in which PM_{10} is identified as the contaminant of most concern in the Region given that it is implicated in causing a high number of premature deaths.

[81] **Types of Contaminants:** We recommend a revision of this topic to describe the continuum from the most serious contaminant (particulate matter, or PM) to the least serious, being smoke and dust. The revision includes reference to the issue of health impacts from exposure to PM_{10} and $PM_{2.5}$, and also contrasts the relative seriousness of different contaminants according to their prevalence and adverse effect on the health or wellbeing of people. While the coverage we recommend is similar to that in the pCARP (as notified), the treatment of the subject matter has been changed to some extent as described above.

[82] **Sources of Contaminants:** We recommend some revision of this aspect by comparison to the pCARP (as notified), in particular to update the source contributions from home heating, industry and vehicles and also to explain why the Regional range for the three sources is so broad. Such changes as we propose are consequential (because of more up to date information) or of minor effect.

[83] **The Understanding of Air Quality:** The Panel recommends the inclusion of this new topic because it emphasises an important point, namely that the science of air quality is complex and knowledge continues to evolve. A current example, the emerging importance of $PM_{2.5}$, is used to illustrate this theme including the ongoing debate concerning whether long-term exposure to $PM_{2.5}$, a subset of PM_{10}, poses a greater health risk than short-term exposure. A number of submitters emphasised the significance of this debate, especially to the Canterbury region where short-term spikes characterise the PM_{10} exceedance figures.

[84] **When will good air quality be assured?** This subject matter is also new, and linked to the previous topic. We recommend its inclusion because in our view it is important that people who use the Plan understand that improvement in air quality is achieved incrementally and over time. Again a number of submitters stressed these points, typically by reference to the improvement in the quality of ambient air in Christchurch during their lifetimes. The need for perseverance and a future vision are values that underpin the Plan, and we consider they should be articulated through discussion in the introduction.

[85] **A Balanced Approach:** The pCARP (as notified) referred to the potential for air quality initiatives to result in perverse health impacts (see the commentary on Non-regulatory Programmes). We recommend an expansion of the topic and its placement under a specific sub-heading. This issue was a major concern raised by numerous submitters, particularly in the context of the space heating provisions that implement the phase-out of older burners in favour of new technology. The purpose of sustainable management is defined in the RMA by reference to the management of natural resources "in a way, or at a rate" which enables people to provide for their well-being, health and safety. The Plan seeks to achieve an appropriate balance and we recommend the inclusion of the proposed discussion to recognise and acknowledge this dimension.

[86] **Key Management Responses for Air Quality:** This topic is very largely unchanged from the pCARP as notified. Any change is of only minor effect.

[87] **The Statutory Planning Framework:** This topic remains in similar form to that in the pCARP as notified and incorporating the Officer's S42A Recommendations. Such changes as we recommend are of minor effect i.e. to improve expression, delete a duplication and include a minor omission.

[88] **Section 15 of the RMA:** We recommend the inclusion of this topic in the introduction. In the pCARP (as notified) there was a similar segment, but placed in the section on How the Plan Works. We regard Section 15 to be a pivotal provision that governs how air plans must be structured. As such we recommend inclusion of a brief passage at this point of the introduction. It explains the need for express provisions to enable industrial discharges to occur, while provisions providing for all other discharges are at the discretion of the Council. We note that a brief reference to this important distinction remains in How the Plan Works, but confined to a simple explanation as opposed to an outline of Section 15 itself, as appeared in the pCARP (as notified).

[89] **The Resource Management (National Environmental Standards for Air Quality)**

Regulations 2004: We recommend the inclusion of this topic under a specific sub-heading because the NESAQ regulations impose national controls that supply the starting point for a number of the provisions in the Plan. The discussion we propose summarises the scope of these controls and explains how the Plan builds upon this national framework. The pCARP (as notified) referred to the NESAQ, but only in passing, whereas we are satisfied that at least the discussion we propose is required.

[90] **Working with Key Partners:** We recommend only some consequential, and minor wording, changes to this topic as contained in the pCARP as notified and incorporating the Officer's S42A Recommendations. The wording changes are confined to the sentence on reverse sensitivity and are intended to improve the clarity of the explanation provided.

[91] **Non-regulatory Programmes:** We again recommend only limited changes to the discussion under this heading from those recommended by the Officers in their S42A Recommendations version. That discussion culminated by identifying eight "work streams" that were said to comprise the non-regulatory programme. We consider that three of the bullet points described what were in fact regulatory requirements, or initiatives. We therefore recommend the deletion of reference to these.

[92] **Two Factors that have Shaped the Plan:** We recommend the inclusion of this additional topic. During the hearings various submitters referred to the Christchurch earthquakes and the exponential growth in farming activity in the Region, particularly dairy farming. These comparatively recent developments have shaped the Plan, in that rules of a kind not previously required in the regional planning framework for air discharges had to be included. We consider that reference to these developments is warranted, in part to explain the introduction of some new provisions.

[93] **Structure of the Plan:** The pCARP is fundamentally different in structure to its predecessor, being Chapter 3 of the Canterbury Natural Resources Regional Plan (NRRP). We recommend that there be brief reference to this under a sub-heading of 'Structure of the Plan', mainly for the benefit of plan users who were familiar with the format of the NRRP.

[94] **Clean Air Zones – A Spatial Concept that Underpins the Plan:** CAZs are defined areas that include and surround a polluted airshed. Many plan provisions apply within, or outside, CAZs. This spatial concept was used under the previous air plan, but not to the same extent. Curiously, the introductory sections of the pCARP as notified did not explain how the CAZ concept worked in relation to the Plan. We recommend the inclusion of a discussion under the above heading to explain: the relationship between airsheds and CAZs, the rationale for using an inside/outside CAZ divide throughout the rules framework and the use of an associated spatial concept (properties 2ha or greater in area) in relation to certain of the rules. We consider this explanation is fundamental to understanding how the Air Plan works.

[95] **Crop Residue Burning Buffer Areas:** Section 11 of the Plan comprises maps that depict buffer areas around Ashburton and Timaru. These areas are utilised in the Crop Residue Burning rules. We recommend the inclusion of a brief explanation of buffer areas.

[96] **Deletions from the pCARP:** Four topics covered in the pCARP as notified do not remain in our recommended version of the introduction. These topics are: Outdoor burning and rural discharges of contaminants; Industrial and large-scale discharges of contaminants; Home heating; and Motor vehicles. In general terms the pCARP (as notified) contained a description of the adverse effects that emanate from these various source activities, together with some indication of the controls

imposed to mitigate the effects. On balance, we concluded that our recommended version of the Introduction provided sufficient coverage of these aspects by virtue of the additions and revised content we propose.

3.4.2 *Issues of Significance to Ngāi Tahu*

[97] As with the Introduction, the Panel approached this section by asking the question: what is its purpose and were changes required if that purpose was to be achieved. The rules include conditions and matters of discretion intended to protect sensitive activities and "wāhi-tapu, wāhi taonga or places of significance to Ngāi Tahu" from the adverse effects of odour, smoke or dust. We therefore saw the principal purpose of this section as being to provide the information and guidance required by plan users to enable them to meet their obligations to Ngāi Tahu. Attainment of this purpose means that the section must outline and define concepts that provide an understanding of Ngāi Tahu values and also set out the practical information needed to enable users to access iwi management plans to establish the location of sensitive sites, or where necessary consult with papatipu rūnanga to that end.

[98] Unfortunately, our evaluation of the pCARP (as notified) led us to conclude that the Ngāi Tahu section was not appropriately focussed. In particular the section contained material that appeared more relevant to land grievances and their resolution and also a detailed description of the consultation process undertaken to ensure that issues of significance to Ngāi Tahu were accommodated in the Plan. We recommend adoption of a much revised version of this section focussed on the definitional and practical issues discussed above. The land grievance aspects have been deleted, and the consultation aspect has been reduced from six pages (including a table) to a succinct summary of two paragraphs.

[99] Against this background we can summarise that other changes we recommend to this section quite briefly. The recommended version commences with a short statement concerning approach, or purpose. This is followed by definitions of seven key concepts, including wāhi tapu and wāhi taonga. These provide an insight and understanding of the Ngāi Tahu view of the natural world. None of the definitions are new, but some have been reworded to a minor extent.

[100] Next is material concerning the Rohe (territory or boundaries) of the Canterbury Region. This explains the concept of mana whenua, and the Rūnanga system, including a map to identify where the 10 Papatipu Rūnanga of the Canterbury Region are located and exercise customary authority. Again this is not new material, but it has undergone minor refinement.

[101] The next segment refers to the grievance settlement process and how it culminated in the creation of statutory acknowledgement areas, declarations of Tōpuni and Nohoanga entitlements. Areas, so defined in the Ngāi Tahu Claims Settlement Act 1998, recognise the special association of Ngāi Tahu with these sites and a map identifies the location of each, as well as its status (i.e. a statutory acknowledgement area, etc). This segment is also not new, but the revision we recommend is briefer and has a closer focus on the twin purposes we identified earlier. Another change that we recommend is the amalgamation of Schedule 10 in the pCARP (entitled 'Areas affected by the Ngāi Tahu Claims Settlement Act 1998') into the Ngāi Tahu section of the Plan so that this section becomes self-contained. This will obviate the need for users to consult a schedule as well as a Plan section.

[102] The next two segments we recommend are sub-headed "Information available from the Canterbury

Regional Council" and "Consultation with Ngāi Tahu". They contain the practical information concerning materials held by the Council, including iwi management plans, and how to go about identifying and consulting the appropriate Papatipu Rūnanga.

[103] Finally this section contains a segment entitled "How the Air Plan Addresses Issues of Significance to Ngāi Tahu" to which we have already referred; and a summary paragraph taken without amendment from the pCARP (as notifed).

3.4.3 *How the Plan Works*

[104] We recommend only minor changes to this section of the Plan. In relation to the introductory paragraphs we propose revised wording to sketch the component parts of the Plan, but then the deletion of a discussion concerning the meaning and effect of Section 15 of the RMA. This is a consequential alteration because Section 15 is now dealt with in the Introduction (see paragraph [88]) as part of the statutory framework discussion.

[105] The objectives and policies segment has only recommended wording amendments of minor effect. Likewise the segment on rules is largely unchanged, save that we recommend a revised description of the consent hierarchy to more closely identify the elements of each of the six types of activity defined in Section 87A of the RMA. We consider this is essential, particularly for lay plan users.

[106] We also recommend a new sub-heading and revised wording to describe "When do Rules Have Legal Effect and Become Operative?" The pCARP (as notified) contained a paraphrase of the relevant statutory provisions, whereas we recommend an explanation of the meaning and effect of the provisions, coupled with references to the section numbers and a warning to consult those sections if confronted with the need to apply them in a real life situation. We consider this to be the better course given the complexity of the provisions.

[107] We propose no changes to the segments sub-headed "Resource Consents" and "Provision Hierarchy".

3.4.4 *Definitions and Abbreviations*

[108] We recommend the inclusion of introductory paragraphs before the definition tables, to:

- stress their importance to understanding the plan provisions
- advise plan users that where the rules use a term that is defined that term is shown in italics.

This provides a warning of the need to consult the appropriate table.

[109] The definitions are divided into "general" and "small-scale heating appliance" definitions in separate tables. We recommend changes to some definitions, the deletion of some and the inclusion of some new definitions. However, the reasons for these recommendations are explained in the narrative chapter containing the rule, or rules, most relevant to each particular definition. We also recommend that the definitions be repositioned immediately before the objectives, policies and rules in section 4. The pCARP had them in section 2 and therefore separated from the provisions to which they apply. This was inconvenient, hence our recommendation.

[110] The abbreviations are in a single table following the definitions. We recommend the deletion of one abbreviation because it is not used in the Plan, and minor corrections to the PM_{10} and $PM_{2.5}$

abbreviations to substitute "micrometres" for "micrograms" and to make the wording accord with the NESAQ formulation.

[111] We recommend that the following definitions are deleted because, as a consequence of other changes that we have recommended to the Plan, they are no longer used:

- Hazardous air pollutant
- Natural ground level
- Public amenity area
- Sensitive site
- Stockholding area
- Urban
- Waste management
- Domestic liquid or gas burner
- Domestic solid fuel burner

[112] We recommend amendments to the definitions listed below, for the reasons discussed at the paragraphs identified:

- Emergency electricity generation – paragraph [274]
- Large scale fuel burning devices – paragraph [241]
- Outdoor burning – paragraph [184]
- Township – paragraph [219]
- Small scale heating appliance – paragraph [376]
- Secondary emission reduction device – paragraph [381]

Chapter 4

Objectives, Central Policies and Rules Applying to All Activities

4.1 Introduction

[113] This section of our report sets out the reasons for our recommendations in relation to the objectives, the central policies and the rules applying to all activities. These are discussed in the following sub-sections under appropriate theme or issue headings.

4.2 Balancing competing demands

New Objective 5.3 (Panel Recommendations)

[114] Throughout the Hearing, we heard from various submitters with different perspectives on air quality management. Crop residue burning is a good example of conflicting viewpoints and competing demands on the air resource. On the one hand we heard from people concerned about the large quantity of smoke generated and the long distances over which it can be transported with consequent effects on visibility, odour and, potentially, adverse health effects. We also heard from farmers, for whom crop burning is considered an essential and normal farming practice, that adverse effects could be minimised (but not necessarily avoided) by good management practices and that there are adverse effects of alternatives (such as increased use of agrichemicals). Similar issues arise in relation to industrial discharges. We consider that it would be remiss if the pCARP did not include an objective explicitly recognising the need to balance competing demands on the air resource, whilst ensuring that environmental bottom-lines are respected. We have therefore recommended a new Objective 5.3 (Panel Recommendations) to this effect.

[115] We consider that the inclusion of this new objective will better give effect to Policy 14.2.2 of the RPS, which seeks to enable discharges to air subject to avoiding significant localised adverse effects.

4.3 Ambient air quality vs localised effects

Objective 5.1 (as notified, renumbered as Objective 5.2) and 5.2 (as notified, renumbered as Objective 5.4). Policies 6.2 (as notified, renumbered as 6.3A), 6.3 and new Policy 6.3B (Panel Recommendations).

[116] The NRRP separately identified and managed the effects on localised and ambient air quality. This approach was not carried through into the pCARP. We heard from a number of industrial submitters[7] that this distinction is important, for example in situations where an industrial facility may cause ambient air quality guidelines to be breached 'at the fenceline' or in an isolated location where people would not be exposed. They argued that these localised effects are assessed in a different way to cumulative effects, with more emphasis on the nature of human exposure, rather than simply comparing model predictions with ambient air quality guidelines or standards.

[117] Appendix 1 of the S42A Report sets out the Council Officer's position that this distinction between localised and ambient effects is unhelpful. They consider that it may limit Council's ability to effectively manage cumulative effects, i.e. managing a number of small discharges that do not have localised effects but together would have a cumulative effect on ambient air quality. The Council

[7] Mobil New Zealand Limited, BP Oil New Zealand Limited, and Z Energy Limited [3089], Gelita (NZ) Limited [2903], Fonterra Co-operative Group Limited [705]

Officers point out that while the RPS recognises that local and ambient air quality effects require appropriate management, it does not require these effects to be treated separately provided that is achieved through the overall framework.

[118] On balance, we were persuaded by the technical evidence that there is a risk in not distinguishing between localised and ambient air quality effects and that Council's concerns about managing cumulative effects in the consenting process can be adequately overcome through clear policy direction for decision-makers. This direction can be provided through Policy 6.10 (Panel Recommendations) and, more specifically in relation to large scale and industrial discharges, policies 6.22, 6.22A and 6.22B (Panel Recommendations)).

[119] Objectives 5.2 and 5.4 (Panel Recommendations) relate to ambient quality and have been clarified as such. We have recommended other changes to Objective 5.4 (Panel Recommendations, notified as Objective 5.2) to address the maintenance of ambient air quality where it is acceptable (as well as improving air quality where it is degraded). We find that this will better give effect to Objective 14.2.1 of the RPS, which refers both to maintaining and improving air quality so that it is not a danger to people.

[120] Guidance was provided in the pCARP on the differing approaches to managing air quality where it approaches (Policy 6.2 as notified, renumbered as Policy 6.3A) or exceeds (Policy 6.3 as notified) ambient air quality guideline values. It was submitted that these policies:

- should refer to the ambient quality standards set in the NESAQ either instead of, or in addition to, the ambient air quality guidelines[8]; or
- should specifically refer to ambient monitoring, particularly to address the broader issue of ambient versus localised effects[9].

[121] We agree in principle that the policies should refer to both standards and guidelines and propose "national ambient air quality standards and guidelines" as an apt formulation. This will enable the council to consider new or revised standards or guidelines that may be adopted in the future. This is particularly important given that the NESAQ is currently being reviewed (noting that any requirement of an updated NESAQ that is more stringent than a regional plan will trump that plan provision in any case). Similarly, we do not consider it is necessary to be prescriptive about what constitutes degraded air quality by referring to a percentage of the guideline value. In our view, air quality can simply be classified as exceeding guidelines/standards or being degraded or acceptable when compared against these guidelines/standards. In our view there is also no need to specifically refer to the quality of the air being established by monitoring as there is no practical alternative way for this to be done.

[122] Taking all of the above matters into consideration, we found that there was a gap in the notified policy framework as it provided no guidance on the management approach where ambient air quality is acceptable. We therefore recommend a three-pronged policy framework that addresses the differing management responses where ambient air quality:

(a) breaches a standard/guideline (Policy 6.3 of the Panel Recommendations); or
(b) is degraded (Policy 6.3A of the Panel Recommendations); or
(c) is acceptable when compared with the guidelines/standards (Policy 6.3B of the Panel

[8] Winstone Wallboards Limited [2160] and Fletcher Building Limited [2325]
[9] Fonterra Co-operative Group Limited [708] and Gelita (NZ) Limited [2911]

Recommendations).

4.4 Ngāi Tahu

Objective 5.3 (as notified, renumbered as Objective 5.1) and Objective 5.5

[123] We did not find the collective term "mauri/life supporting capacity" in Objective 5.1 (as notified) to be accurate. Mauri is generally translated as meaning "life force" and in our view this is a different concept to the life supporting capacity of the air. In our view, both are needed to provide for people's wellbeing. For this reason, we have separated these terms in this Objective, which has been renumbered as Objective 5.1 (Panel Recommendations), to avoid the impression that they mean the same thing.

[124] In their submission, Ravensdown[10] sought amendments to Objective 5.5 (as notified) because they considered that adverse effects on the relationship of Ngāi Tahu with their culture and traditions will be subjective. They suggested that the wording would be improved by reflecting s6(e) RMA, which requires the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga to be 'recognised and provided for'. The Officers accepted Ravensdown's amended wording in the S42A Recommendations.

[125] The Canterbury Aggregate Producers Group[11] sought that Objective 5.5 be deleted because "*it does not relate to and resolve an identified issue, and does not provide firm and clear direction or provide a useful framework within which the Policies and Rules can seek to give effect to*". We agree that the Objective would be improved by providing more clear direction, and that it should be given meaningful effect through the Plan provisions.

[126] The Panel has considered the matters raised in submissions, and we find that:

- rather than referring to managing 'discharges to air', Objective 5.5 is improved by managing 'air quality' rather than 'discharges to air', because it is the effects of the discharges (and not the discharges themselves) that require management;
- as we outlined previously, our approach is that the objectives should describe an intended "end-state" (see paragraph [71]). In this case, the end state is that air quality provides for the cultural values and traditions of Ngāi Tahu (not simply the relationship with their culture and traditions); and
- we consider that our recommended wording is consistent with s6(e) of the RMA as in order for Ngāi Tahu's culture and tradition to be provided for, it is inherent that these values have first been recognised.

4.5 Nationally and regionally significant infrastructure

Objective 5.7 (as notified) and Policy 6.11

[127] Submissions on Objective 5.7 were varied and included a range of submitters seeking that the scope of the objective be expanded. The Oil Companies submission[12] noted that it was difficult to ascertain how the notified wording related to air discharges and suggested that it be deleted and

[10] Ravensdown Fertiliser Co-operative [2720]
[11] Canterbury Aggregate Producers Group [3001]
[12] Mobil New Zealand Limited, BP Oil New Zealand Limited, and Z Energy Limited ('The Oil Companies') [3096]

replaced with an alternative objective.

[128] We agree with the Oil Companies that the objective does not clearly link to air quality and is not clear whether it is intended to manage the effects of air discharges on nationally and regionally significant infrastructure, or the effects of air discharges from infrastructure. On balance, we find that Objective 5.7 (as notified) should be deleted and that the intent is better achieved by:

- Plan provisions that protect infrastructure from the adverse effects of air discharges, such as the inclusion of conditions restricting outdoor burning in proximity to substations and national grid powerlines discussed in paragraph [189]); and
- Policy 6.11, which recognises the contribution of nationally and regionally significant infrastructure to people's social and economic wellbeing and provides for the discharges associated with these infrastructure activities.

[129] Submissions on Policy 6.11 prompted our recommendation for minor wording changes to this policy to better reflect the language used in the RMA (i.e. referring to "social and economic wellbeing" rather than to the economy). Transpower's submission[13] requested that this policy include reference to the maintenance of infrastructure (as well as operation and development). We have accepted this submission point.

4.6 Offensive and objectionable effects of odour, dust and smoke

New Objective 5.9 (Panel recommendations) and Policy 6.5.
Rule 7.3 (as notified, renumbered as Rule 7.5), replacement Rule 7.3 and Rule 7.28 (as notified, renumbered as Rule 7.4)

[130] Discharges of odour, dust or smoke can cause adverse effects on amenity values. The degree to which a particular discharge might cause an offensive or objectionable effect (i.e. a significant adverse effect on amenity values) is dependent (among other things) on the sensitivity of the receiving environment. For example, an odour that may be well-accepted in a rural setting may be unacceptable in a residential area. In order to provide context for the relevant provisions, one of the first matters that we turned our mind to as a Panel was the definition of a sensitive activity.

4.6.1 *Definition of Sensitive Activity*

[131] The pCARP (S42A Recommendations) defined a sensitive activity by reference to place; namely dwellings, residential and public amenity areas. Various submitters sought reformulated definitions focussed on identifying places that are sensitive to odour dust or smoke. The Panel concluded however, that activities should be the primary focus, and that the definition also required a test that defined when an activity met a sensitivity threshold.

[132] Coincidentally the Environment Court decision in Craddock Farms Ltd v The Auckland Council (2016) EnvC 051 was delivered on 21 March 2016. This case concerned the impact of odour effects from a proposed intensive poultry farm development on a rural environment that included nearby dwellings and a market garden. The Court's evaluation included this:

> *[136] The residents of houses could reasonably be expected to be regularly present for extended periods as part of the normal pattern of the use of their land, and could reasonably expect enjoyment of a high level of amenity. The*

[13] Transpower New Zealand Limited [2826]

gardens around the M…….. and B……. houses are effectively part of their living area and experience.

[133] This confirmed our view that a people and activity based definition was required. We then settled upon a test based on the existence of "a reasonable expectation" that "the enjoyment of the amenity values of (a) place or area will not be materially impaired" as the best solution. This, we consider, captures the essence of a place that is truly sensitive to the effects of odour, dust or smoke.

[134] Amenity values are defined in the RMA and the concept is well understood. The reasonable expectation test mimics the ubiquitous use of a reasonable man test at common law, for example to define when a duty of care is owed to others. Such a formulation is objective, so that expectations not deserving of recognition are excluded. Over time, we expect that precedents will explore effects that are minor or transient, so as to render an expectation unreasonable. The concluding words of the definition demonstrate the potential breadth of application of the definition, but do so in a non-limiting manner since it is not possible to foresee every sensitive place or area in advance. It must also be borne in mind that the occurrence of sensitive activities may not be constant. A seasonal outdoor burning pursuant to Rule 7.14 (Panel Recommendations), for example, must meet the sensitivity requirements of condition 2, but should near neighbours be overseas at the relevant time there would be no scope for their amenity interests to be impaired. We note that a spread of rules throughout the Plan include conditions that require the protection of sensitive activities from the adverse effects of odour, dust or smoke.

4.6.2 *New objective relating to offensive and objectionable and noxious and dangerous effects*

[135] The pCARP provisions for managing discharges with the potential to cause offensive and objectionable effects attracted a large number of submissions, particularly from industry submitters concerned about encroachment by sensitive activities. As will be apparent from the later discussion in this report, the principle that offensive and objectionable effects are unacceptable underpins the policy and rule framework for managing discharges of odour, dust and smoke. This principle was not challenged by submitters but, rather, their concerns were more about implementation of the pCARP and how this might affect their ability to continue to operate efficiently in a dynamic environment.

[136] We therefore considered that it was important that the Plan included a new Objective 5.9 (Panel Recommendations) to generally avoid offensive and objectionable effects. The inclusion of the word 'generally' is deliberate and is supported by the recommended policy framework, which provides guidance on situations where land use planning decisions have created amenity conflicts that need to be managed in a balanced way.

[137] For completeness, we recommend that this objective also seek to avoid noxious and dangerous effects, which then provides a higher order direction for the rules, many of which contain conditions referring to noxious and dangerous effects.

[138] We consider that an explicit objective pertaining to avoiding offensive, objectionable, noxious and dangerous effects will better give effect to Objective 14.2.2 of the RPS. The NRRP contained an objective seeking similar outcomes[14].

4.6.3 *General policy relating to offensive and objectionable effects*

[14] AQL(1) relating to (b) "adverse effects on human health and safety" and (c) "offensive or objectionable odours"

[139] Policy 6.5 (as notified) was focussed on the need to manage the frequency, intensity, duration, offensiveness and location of discharges into air. These terms are commonly known as the FIDOL factors. In our view, the notified policy is flawed in that the FIDOL factors should be applied to the effects of the discharge and not the discharge itself.

[140] The Oil Companies submission[15] expressed concern that this policy did not reflect the anticipated pathway that offensive and objectionable odours would be expected to take and potentially imposed a "block" with regard to the gateway test required for non-complying activities. They suggested that the policy require that such discharges "are reduced and managed to acceptable levels". As discussed in the following subsection, the linchpin of the rules for managing offensive and objectionable effects is the use of dust and/or management plans. This approach was commended by the Canterbury District Health Board, although they submitted that the provisions should be strengthened by requiring the plans to be independently auditable[16]. In our view, the policy is more effective by invoking management through the rule framework and a reliance on management plans, as we have recommended.

4.6.4 *Rules managing offensive and objectionable effects of odour, dust and smoke*

[141] The rule framework for managing the effects of smoke from outdoor burning is discussed in Chapter 5 of this report. In broad terms, the detailed conditions that have been set in the permitted activity rules for outdoor burning will manage offensive and objectionable effects of smoke from these activities. Similarly, the detailed conditions that have been set for both large scale fuel burning devices and small scale heating appliances, including limits on opacity and visible smoke, respectively, will manage offensive and objectionable effects of smoke from these activities.

[142] The notified rule framework for discharges of odour and dust provided:

- permitted activity rules with conditions requiring, amongst other things, the preparation and implementation of an odour and/or dust management plan;
- that where a discharge of odour or dust is not specifically covered by another rule, consent is required as a restricted discretionary activity (Rules 7.28 and 7.29 as notified); and
- that the discharge of odour, dust and smoke that causes an offensive or objectionable effect beyond the property boundary is a non-complying activity (Rule 7.3 as notified).

[143] The Council Officers explained the key principles underlying this approach in their S42A Report[17], as follows:

- offensive or objectionable effects are unacceptable;
- the proposed framework seeks to manage the effects of dust and odour discharges beyond the property boundary that are not offensive or objectionable but are still significant; and
- the need to manage so-called "legacy issues", which refers to the reverse sensitivity effects on existing industrial activities of land use changes that have increased the sensitivity of the receiving environment.

[144] A key issue raised by submitters was whether the threshold of <u>any</u> odour beyond the property

[15] Mobil New Zealand Limited, BP Oil New Zealand Limited, and Z Energy Limited [3112]
[16] We did not accept these submission points as the plans will be auditable (i.e. able to be audited) in any case
[17] p3-28 and 29

boundary triggering the requirement for a restricted discretionary activity consent was overly onerous. A number of submitters[18] sought that the thresholds in the restricted discretionary activity rules (Rules 7.28 and 7.29 as notified) be amended so that only discharges that caused an offensive or objectionable effect would require restricted discretionary activity consent. Others submitters[19] sought that the restricted discretionary activity rules be deleted and replaced with a general permitted activity rule, and that the non-complying activity rule (Rule 7.3 as notified) be amended to a discretionary activity rule. The effect of these changes would be that discharges of odour and dust that have an effect that is less than the threshold of being offensive or objectionable would be a permitted activity, and discharges that exceed this threshold would require discretionary activity consent.

[145] The submission by Selwyn District Council[20] questioned the relationship between Rule 7.3 (as notified) and other rules in the Plan. They noted that Rule 7.3 (as notified) would apply non-complying activity status to activities otherwise covered by a specific rule with a different activity status. They sought that this Rule apply only to activities not otherwise managed by another rule.

[146] The Panel agrees in principle with the Council Officers' position that offensive or objectionable effects are unacceptable. Therefore we find that it would not be appropriate for discharges into air that cause these effects to be restricted discretionary or discretionary activities. Policy 6.7 (Panel Recommendations) addresses the management of reverse sensitivity effects caused by changing land use in the vicinity of existing industries. It provides for those affected industrial activities to be given time to reduce the effects of their discharges. Therefore, to give effect to this policy, we consider that non-complying activity status (rather than prohibited activity) is appropriate for discharges that give rise to offensive or objectionable effects.

[147] We do not agree with the Officers' reasoning that the pCARP should manage "effects that are not offensive or objectionable but are significant" because case law has established that the term "offensive and objectionable" has the same meaning as "significant adverse effect"[21]. However, we agree that it is appropriate to manage discharges of odour and dust where there is an adverse effect that lies in the range between a small effect and a significant adverse effect. As pointed out by submitters, it is also important that any rule framework adopts a lower threshold so that discharges of a trivial nature (examples included odour from nail salons or pet shops) are provided for, because there would be no resource management purpose served by requiring a resource consent in such cases.

[148] Taking into account all of the submissions and evidence presented to us, we propose a rule framework whereby:

- discharges not managed by a specific rule and that do not cause, or are unlikely to cause, an adverse effect beyond the property boundary are a permitted activity (new Rule 7.3 Panel Recommendations);
- discharges not managed by a specific rule and that do cause, or are likely to cause, an adverse effect beyond the property boundary are a restricted discretionary activity (Rule 7.4 Panel Recommendations (previously numbered as Rule 7.28 in the notified Plan); and

[18] Including Lowe Corporation Limited and Colyer Mair Assets Limited [2637], Ravensdown Fertiliser Co-operative Limited [2780] and Alliance Group Limited [2981]
[19] Mobil New Zealand Limited, BP Oil New Zealand Limited, and Z Energy Limited [3123] and Gelita [2934]
[20] Selwyn District Council [1138]
[21] Waikato Environmental Protection Society Inc v Waikato Regional Council [2007] NZEnvC W 060/2007 at [187]

- discharges that cause an offensive or objectionable effect beyond the property boundary are a non-complying activity, which is achieved through Rule 7.5 (previously numbered as Rule 7.3 in the notified Plan) and the inclusion of condition 1A in the relevant permitted activity rules.

[149] With regard to the permitted activity rules for discharges of odour and/or dust from specific activities, we have recommended that the relevant condition is specific about whether the discharge being managed is odour or dust (or both).

[150] We consider that our recommended amendments would better achieve Objectives 5.6 and 5.8 (Panel Recommendations), while not precluding the achievement of Objective 5.9 (Panel Recommendations).

4.7 Location of discharging activities and managing reverse sensitivity

Objective 5.8 and Objective 5.9 (as notified, renumbered as Objective 5.7).
Policies 6.6, 6.7 and 6.8, and new Policy 6.7A (Panel Recommendations)

4.7.1 *Overview of the key issues*

[151] An area of particular concern to many industry submitters was the framework in the pCARP to manage discharges where there has been encroachment towards established industrial facilities by sensitive activities, particularly residential development. These submitters generally accepted the need to internalise effects to the extent practicable[22], however we understand that it is not possible (nor a requirement of the RMA) for effects to be fully internalised; meaning that at times there may legitimately be dust or odour beyond the boundary of a site. The extent to which such a discharge of odour or dust might give rise to an offensive or objectionable effect is, in part, related to the nature of the activities being undertaken in the surrounding area. Therefore, industry submitters highlighted that avoiding incompatible (i.e. sensitive) activities in the vicinity of existing industrial facilities is important, both to avoid adverse effects on those sensitive activities and to avoid reverse sensitivity effects (i.e. operational constraints and increased costs) on the discharging industry.

[152] We were given examples of sensitive activities (both residential and commercial) that had been allowed to establish in, or near, existing industrial areas. No doubt some land use change has resulted from the series of earthquakes and subsequent redistribution of activities. Notwithstanding the Council's description of these as "legacy issues", in our view there is no guarantee that such situations will not continue to arise from time to time. Therefore it is important that the Plan provides a clear framework to manage discharges in this situation.

[153] Another issue raised by submitters was the extent to which the pCARP recognised the range of constraints on the location of an industrial activity, in addition to constraints related to air quality[23]. We heard that as well as supply chain or infrastructure constraints, certain activities such as quarries can only be located where there is a viable resource (note there is further discussion of our recommended policy response to this in paragraphs [162] and [166]).

[154] Industry submitters were particularly vexed by the notified wording of Policy 6.7, which required existing discharging activities that caused significant adverse effects (which did not exist previously)

[22] Mr J Reid, Carter Holt Harvey, paragraph 4.17
[23] For example the presentation to us by Mr Betteridge of Synlait Milk Limited

as a result of authorised land use change would be required to "reduce their effects or relocate". We agree that this appears to trivialise the cost of relocation and fails to recognise that in many cases relocation would not be feasible, and a consequent site closure would result in lost jobs and an adverse impact on the regional economy. We fully understand the submitters' perspective that, in this regard, the pCARP appeared to be unfair in placing the full cost of compliance onto the discharging activity.

[155] However, it is an inconvenient fact that functions under the RMA are divided between territorial local authorities (who have responsibility for managing the use of land) and regional councils (who have responsibility for managing discharges of contaminants). The pCARP can influence the location of discharging activities through the consenting process, but not the location of sensitive activities.

[156] We understand that the Council intended Policy 6.7 to be "enabling" in the sense that it provided direction to decision-makers that there may be instances where an activity is causing offensive and objectionable effects and the renewal of a consent should be granted subject to a programme of actions to reduce effects over time. We consider this enabling principle is appropriate and provides a pragmatic compromise to a vexed issue facing both industry and the Council. It confronts the reality that offensive and objectionable effects are unacceptable in these cases.

4.7.2 *Objectives*

[157] The notified Plan included two relevant Objectives, being:

- Objective 5.8 (as notified) which recognised that there are differing air quality expectations throughout the region; and
- Objective 5.9 (as notified, renumbered as Objective 5.7) relating to the spatial location of activities.

[158] Submitters generally supported Objective 5.8 (as notified). Ravensdown[24] and Horticulture NZ[25] identified (correctly in our opinion) that this was not framed as an objective and was more a statement of fact. Horticulture NZ suggested rewording to focus on "managing air quality to reflect the different receiving environments across the region ...". We considered this suggested re-wording but ultimately found that it was too detailed for an objective.

[159] A number of submitters sought to retain Objective 5.9 (as notified) or limit its scope to new activities[26]. Other submitters suggested alternative wording that would more fundamentally alter the intent of the Objective[27]. A common thread of many of the submissions was that a different management approach is required for existing and new discharging activities. We agree this should be more clearly articulated in the Plan Objectives.

[160] For new activities, there is greater scope to consider the appropriateness of the proposed location compared to re-consenting of an existing facility where there has been a significant investment made in infrastructure. We therefore agree with submitters[28] that Objective 5.9 (as notified, now

[24] Ravensdown Fertiliser Co-operative Limited [2724]
[25] Horticulture New Zealand [1068]
[26] Synlait Milk Limited [2398]
[27] The Oil Companies [3097], Canterbury Aggregate Producers Group [3008]
[28] Including Fonterra Co-operative Group Limited [707]

renumbered as Objective 5.7 of the Panel Recommendations) be limited to new activities. We also find that there is no need to explicitly refer to achievement of air quality outcomes "both now and in the future".

[161] For existing activities, we consider that there is a need to confront head-on the issue of managing discharges to air in the context of a changing receiving environment. We have therefore recommended re-focussing Objective 5.8 on the management of existing discharges. Rather than referring to the spatial differences in air quality expectations, we consider it should address the changes in air quality expectations over time. In our view, it is a simple reality that where a discharge into air is causing a significant adverse effect, the effects of that discharge must be reduced. However, with this in mind, we have recommended changes to the policy framework to guide decision-makers towards a balanced outcome.

4.7.3 *Policy framework*

[162] Further to the amendments to the objectives, we recommend that the policies also differentiate between new and existing activities as requested by submitters[29]. Policy 6.6 supports Objective 5.7 (Panel Recommendations) and we recommend that it addresses the location of new (rather than existing) activities. We have recommended that this policy include reference to adequate separation distances from sensitive activities, to provide further guidance on the appropriateness of a location. We feel it is important that this concept is captured at a policy level to provide a coherent link to the rules that include a condition specifying minimum separation distances to sensitive activities.

[163] Submitters identified to us that actual land use in a particular area can be distinctly different from the district plan zoning. This may be because activities not necessarily envisaged by the zoning provisions have been allowed to establish by way of consent, or because an area is in transition, for example from rural to urban. For this reason, we have recommended wording changes to Policy 6.6 (Panel Recommendations) to clarify that in determining an appropriate location, consideration should be given to both anticipated development (in accordance with the planning provisions) and the sensitivity of the receiving environment as it actually exists.

[164] Policy 6.7 supports Objective 5.8 (Panel Recommendations) by addressing the management of existing discharges that have been encroached upon by sensitive activities. As discussed in paragraph [154], this policy was the subject of a large number of submissions, seeking deletion or significant amendment. We have settled on recommended wording that gives clear direction to decision-makers that where a discharging activity is affected, essentially through no fault of its own, by authorised land use changes that mean an ongoing discharge now causes significant adverse effects, that activity should be given a reasonable opportunity to implement measures to reduce the effects over time.

[165] As a result of submissions on the matter of locational constraints, the Officer's S42A Recommendations included a new Policy 6.11A, as follows:

> *"Locational constraints of discharging activities, including heavy industry and infrastructure, are recognised so that operational discharges into air are enabled where the best practicable option is applied."*

[166] In rebuttal evidence, Mr Bligh for the Canterbury Aggregate Producers Group generally supported this new Policy but considered that there was no need to refer to Best Practicable Option as there

[29] Including Fonterra Co-operative Group Limited [712] and [713]

are other policies (such as Policy 6.10) that recognise the application of BPO, and that it is unnecessary in the context of the policy. We agree with this and have therefore recommended simplified wording in the relevant policy (renumbered as Policy 6.7A), namely that locational constraints must be considered when imposing terms (i.e. duration) and conditions on resource consents.

[167] Similar issues to those discussed above were also raised by submitters in relation to Policy 6.8 (as notified) which provided for longer consent durations where a discharging activity was located appropriately to "avoid the potential for reverse sensitivity effects". In our view, the policy is best expressed in more general terms and without explicit reference to reverse sensitivity. We recommend it is re-framed to simply provide for longer consent durations where an activity is appropriately located to mitigate adverse effect on others.

[168] As detailed in the previous paragraphs, we recommend a number of changes to the Objectives and Policies that manage the location of discharging activities. We consider that our recommended amendments would better achieve Objective 14.2.2 of the RPS.

4.8 Noxious or dangerous effects rule

[169] The Oil Companies[30] submitted that a new rule should be included providing for any discharge into be a permitted activity on the condition that (amongst other things) "*The discharge must not cause noxious, dangerous, offensive or objectionable odour, dust, particulate, smoke or ash beyond the boundary of the premises where the activity takes place*". If this condition was breached, the activity would require consent as a discretionary activity.

[170] We have considered this submission in light of the above discussion on the offensive and objectionable effects of dust, odour and smoke. In our view, if offensive and objectionable effects are unacceptable then at least the same must apply to noxious and dangerous effects as these relate to material impacts on people or the environment. However, in our view, there can be no similar leeway provided where there is a materially harmful effect on people's health. For this reason, we find that they should be prohibited activities and have recommended a new prohibited activity Rule 7.6 (Panel Recommendations).

[171] We consider that this recommendation would better achieve Objectives 5.1 and 5.2 (Panel Recommendations).

4.9 Developments in technology

Objective 5.6 (as notified, renumbered as Objective 5.10) and Policy 6.12

[172] Submissions on Objective 5.6 (as notified), which seeks to enable developments and innovation in technology, variously sought that this objective be retained or requested minor amendments. Gelita[31] sought that it be reworded to make it clearer, as follows:

> *"Developments and innovation in technology which have the potential to provide solutions to air quality issues are to be recognised and appropriately provided for"*

[30] The Oil Companies [3123]
[31] Gelita (NZ) Ltd [2906]

[173] We agree that this proposal more clearly links technological developments and innovation to the outcome of potential solutions to air quality issues. However we feel that it would be more positively expressed as being "to improve air quality" (rather than solve air quality problems or issues). We have recommended amended wording in this objective, which has been renumbered as Objective 5.10 (Panel Recommendations). This objective is principally given effect through the space heating rules, which provide a consenting pathway for innovation such as secondary emission reduction devices.

[174] Submitters sought the deletion or amendment of Policy 6.12 (as notified). Some submitters felt that it was too onerous to recognise improvement in the management of discharges over time as being "likely" and felt that it was more appropriate to say that there "may' be improvement[32]. We agree that it is not possible to anticipate whether improvements will be achievable over time and therefore we have recommended using the phrase that "changes in technology may allow for improvements in the quality of a discharge".

[175] Synlait[33] supported the policy but requested that "requirements to upgrade infrastructure are subject to robust best practicable option assessment to ensure requirements are reasonable". For this reason, we have suggested that new Policy 6.22B, which relates more specifically to industrial and trade discharges refers to "the practicability for the effects of the discharge to be reduced over time".

4.10 Spatial air discharge management framework

[176] New Policy 6.2A (Panel Recommendations) has been included principally to set out the overarching framework for managing discharges to air on a Clean Air Zone spatial basis within the region.

4.11 $PM_{2.5}$

Policy 6.4

[177] We received a number of submissions emphasising the importance of long-term $PM_{2.5}$ air quality and some submitters[34] considered that Policy 6.4 (as notified) should refer to the World Health Organization annual average ambient air quality guideline value (rather than the 24-hour average value). As discussed in paragraphs [46] to [47], we accept the importance of managing $PM_{2.5}$ air quality. For this reason, we have recommended including both annual average and 24-hour average values into Policy 6.4 (Panel Recommendations).

[178] Two submitters[35] supported the inclusion of reference to "while providing for industrial growth" in this policy. In our view it is unclear how this aspect of the notified policy would be put into effect. We are also concerned that specifically providing in the policy framework for industrial growth in relation to $PM_{2.5}$ discharges but not for any other contaminant could be interpreted in varying ways. Overall, we do not consider this inclusion is justified, nor would it be effective.

[32] Lowe Corporation Limited and Colyer Mair Assets Limited [2618]
[33] Synlait Milk Limited [2428]
[34] Ashburton District Council [872], Alliance Group Limited [2695], Meridian Energy Ltd [2701]
[35] Fletcher Building Limited [2328], Winstone Wallboards Limited [2174]

4.12 Precautionary approach

[179] Submitters variously wanted Policy 6.14 (as notified) to be deleted[36], amended[37] or retained[38]. We understood that those who wanted the policy deleted were particularly concerned that because assessment techniques such as air dispersion modelling are inherently uncertain and that supporting data (for example on background air quality) may be incomplete, a precautionary approach may become the default position. The relief sought by LPC addressed this issue in part by suggesting a precautionary approach be limited to situations where the effects of the discharge are potentially significant.

[180] Mr Purves, on behalf of LPC outlined the background and case law relevant to the relationship between the RMA and a general precautionary approach (or principle) of environmental law. In the case cited[39], the Court found that "*the weight to be given to the precautionary principle would depend on the circumstances. The circumstances would include the extent of present scientific knowledge and the impact on otherwise permitted activities*…"

[181] This policy is directed at managing risk, which is a function of both the probability of an effect occurring and the consequences if it does. This concept is encapsulated in the definition of an effect in Section 3 of the RMA which includes "any potential effect of high probability; and any potential effect of low probability which has a high potential impact".

[182] Based on the submissions and evidence, we find that the appropriate circumstances for adopting a precautionary approach is where:

- there is scientific uncertainty or absence of information, for example in relation to safe levels of a particular contaminant and not simply uncertainty in model predictions; and
- where there is a significant risk of an adverse effect of high probability or high potential impact.

[183] We have recommended amended wording for Policy 6.14 to this effect.

[36] Fonterra Co-operative Group Limited [718], St George's Hospital Limited [788], Gelita (NZ) Limited [2919]
[37] Lyttelton Port Company [757]
[38] The Oil Companies [3104]
[39] Macintyre vs Christchurch City, 1996, NZRMA 289

Chapter 5

Policies and Rules for Outdoor Burning

5.1 General

5.1.1 *Exclusion for cooking and definition of outdoor burning*

[184] District Council submitters[40] sought that the Rule 7.13 (as notified, renumbered as Rule 7.16), which provided an exemption for discharges to air from outdoor burning for the purposes of cooking, be amended to specifically refer to "hangi, barbeque and other small scale or domestic cooking devices". We agree with the relief sought in relation to this rule as we consider it improves clarity and have incorporated it into the renumbered Rule 7.16 (Panel Recommendations).

[185] The District Councils' submissions highlight the potential for misunderstanding of what constitutes outdoor burning. For this reason, we have recommended that a definition of outdoor burning be included in the Plan. Rather than attempt to define all of the activities that would be captured by the term outdoor burning, we have recommended a definition that excludes any burning in an enclosed device that discharges into the air via a flue or stack.

5.1.2 *Spatial management of discharges from outdoor burning*

[186] Having listened to submitters, the Panel was of a view that managing discharges to air from open burning on the basis of differentiating between urban and rural areas was problematic. The pCARP definition of 'urban' was criticised by submitters[41], as was a revised version in the S42A Recommendations, while the concept 'rural' remained undefined. We considered this to be unsatisfactory given that a number of the outdoor burning rules were applicable according to the location of the activity being in a rural and urban area.

[187] As set out in Policy 6.2A (Panel Recommendations), our recommendation is that the spatial management of discharges to air is based in the first instance on areas inside and outside Clean Air Zones and, within that, on properties greater or less than 2 hectares. Consequently, we recommend the deletion of references to "rural areas" and "urban areas" in the outdoor burning rules to reflect this overarching framework.

[188] In relation to crop residue burning (Rules 7.8 and 7.9 as notified), the Panel considered that specifically limiting these rules to rural areas was redundant as cropping will only be undertaken on large rural properties. This reference has been deleted from the rules, which are renumbered as Rules 7.11 and 7.13, respectively, in the Panel Recommendations.

5.1.3 *Outdoor burning in proximity to power lines and substations*

[189] Transpower sought that a new condition be inserted into all of the outdoor burning rules (Rules 7.6 to 7.12 as notified) that "t*he burning does not occur within 100m of any National Grid line or substation*". In a letter tabled in support of their submission, Transpower explained that the presence of contaminants in the air from fires can cause electricity to 'flashover' and discharge to ground creating significant safety risks. On the basis of this evidence, the Panel considers that the new condition sought by

[40] Ashburton District Council [890], Selwyn District Council [1144], Waimakariri District Council [1561]
[41] Selwyn District Council [1109], Waimakariri District Council [1309]

Transpower is appropriate. However we have also recommended that there is the opportunity for a person wishing to have a fire in such a location to seek permission from the infrastructure owner.

[190] The only permitted activity rule where we have not accepted this submission is in relation to Rule 7.7 (as notified, renumbered as Rule 7.17) which manages burning in accordance with the Biosecurity Act. In this case we consider that the requirements of the Biosecurity Act take precedence.

5.1.4 *Activity status for burning that does not comply with permitted activity conditions*

[191] Rule 7.5 (as notified, renumbered as Rule 7.19) provided for the discharges from outdoor burning that did not comply with the rules in this section to be a prohibited activity. A number of the District Councils[42] sought that the activity status be amended to discretionary, which is consistent with the NRRP.

[192] As notified, this rule would have prevented an application for resource consent to be made where there was a minor or technical infringement of one of the conditions of a relevant rule. The Panel considers that it is unreasonable to preclude an application to be made for resource consent.

[193] Further, having developed a comprehensive suite of conditions to manage the effects of outdoor burning, the Panel considers that any application for consent should focus on the effects related to the particular nature of the infringement. For example, in relation to outdoor burning of vegetation, if the rule infringement relates only to the separation distance from a sensitive activity, then any consent application should be particularly concerned with effects on that sensitive activity. On this basis, we consider that restricted discretionary activity status is appropriate and that the matters of discretion should relate specifically to the effects of the condition(s) infringed. We have therefore recommended that Rule 7.19 (Panel Recommendations) be amended to a restricted discretionary activity rule with appropriate matters of discretion.

[194] **Section 32AA further evaluation**: The reasons for our recommended change from prohibited to restricted discretionary activity status are set out in detail in the preceding paragraphs. We consider that prohibited activity status should be used with care and restricted to those situations where the adverse effects are well understood and are not acceptable. As notified, we consider the pCARP's approach was inflexible and risked imposing financial and social costs that are not justified in terms of environmental effects. We consider that this broad judgment is better made through the resource consent process, where the adverse effect of a specific proposal can be considered in detail. This approach will assist in achieving Objective 5.3 (Panel Recommendations), while not compromising the ability to meet Objectives 5.6 and 5.9 (Panel Recommendations).

5.2 Burning inorganic materials

5.2.1 *Introduction*

[195] Rules 7.4 and 7.31 (as notified, renumbered as Rules 7.7 and 7.8) are the principal rules that control the burning of inorganic materials. Other rules that are linked because they also control burning of one or more of the listed materials are:

(a) Rule 7.6 as notified, renumbered as Rule 7.10 (permitted activity rule for outdoor burning

[42] Ashburton District Council [877], Selwyn District Council [1140], Waimakariri District Council [1465], Kaikoura District Council [1847]

for the purposes of firefighting training); and

(b) Rule 7.32 as notified, renumbered as Rule 7.9 (prohibited activity rule for burning of bitumen and other materials within a waste management facility).

[196] A number of submissions were received on this suite of rules with the issues raised generally being the activity status and lack of differentiation between different types of burning (e.g. burning in an enclosed device vs open burning) and the lack of provisions for burning minor and incidental quantities of materials, as was provided for in the NRRP. Our recommendations with respect to each of these are set out in the following sub-sections.

5.2.2 *Activity status and types of burning*

[197] Mr B M Anderson[43] sought that Rule 7.4 (as notified) be amended to include "commercial" as well as industrial and trade premises. The example given was of burning materials in a boiler at a sports complex, which is not an industrial or trade premise. This submission raises a salient point in relation to the overall structure of the rules. The combined effect of Rules 7.4 and 7.31 (as notified) was to provide a pathway for resource consents for discharges from burning the listed materials on an industrial or trade premise, whilst precluding an application for the same activity on a non-industrial or trade premise.

[198] Industrial or trade premises (as defined in the Act) do not include commercial premises such as sports complexes or other institutions such as schools, universities, hospitals, etc. 'Production land', which includes all farming activities, is also excluded from the definition of an industrial or trade premise. Consequently the rule framework in the pCARP would prevent, for example, an application to be made for resource consent for discharges into air from burning re-processed oil to heat a horticultural glasshouse (as was noted by Horticulture New Zealand in their supplementary statement dated 4 April 2016). However an application could be made for this same activity on an industrial or trade premise.

[199] The Panel considers that there is no effects-based reason for a difference in activity status for discharges into air from the same types of device burning the same materials, simply because one is located on an industrial or trade premise and the other is not. For this reason, we consider that a more sensible basis for differentiating activity status is between activities where there is limited control over combustion conditions (i.e. outdoor burning and burning in small scale fuel burning devices), and burning in equipment that is specifically designed to achieve a high combustion efficiency and good dispersion of residual emissions into air (i.e. large scale fuel burning devices, incinerators or other industrial process). This has been achieved through our recommendations for amendments to the relevant rules (Rule 7.4 and 7.31, as notified), which are renumbered as Rules 7.7 and 7.8 (Panel Recommendations).

[200] The NESAQ includes specific restrictions on the burning of tyres (Regulation 7) and "wire coated with any material" (Regulation 9) as well as prohibiting the establishment of any new high-temperature hazardous waste incinerators (Regulation 12). The need to have regard to these Regulations has been addressed by our recommendation to include a reference in the amended rule framework to "unless otherwise prohibited by the NESAQ" in relation to burning in large scale fuel burning devices, incinerators or industrial equipment (Rule 7.8 Panel Recommendations).

[43] Mr B M Anderson [2787]

5.2.3 *Provision for burning minor or incidental quantities of listed materials*

[201] Federated Farmers[44] sought that Rule 7.4 (as notified, renumbered as Rule 7.7) be changed so that it would only apply to materials that "are a significant threat to the environment or to human health". In particular, they submitted that there should be an exclusion "for minor or incidental quantities of plastic, treated or glued timber, wood which is painted, stained or oiled, or wood that contains nails, on a hot fire as this is not a significant threat to the environment or human health". A similar change was sought by Wamakariri District Council[45].

[202] In response, to these submissions, the Section 42A Report states:

> *"Burning treated, stained or painted timber releases harmful substances such as copper chrome and arsenic, lead and Volatile Organic Compounds. Because there are too many variables, it is impossible to determine a "safe" volume of treated, painted or stained timber that could be burnt in any area. There are alternative means of disposal that are safer for people and the environment and with regards to hazardous materials, a precautionary approach is the most appropriate"*

[203] The Panel agrees that outdoor burning of inorganic material should be discouraged as there are preferable methods of disposal of these materials. However, it also seems that in some circumstances at least some of these materials can be burnt with minimal effect on the environment. There is also a question about the practicality of achieving 100% separation of the materials listed in these rules from other materials that can be burnt.

[204] In respect of outdoor burning, the NRRP (AQL36) provided exemptions for minor and incidental quantities of:

- any fuel having a sulphur content of greater than 1% by weight;
- wood that is painted, stained or oiled (except lead-based painted wood);
- plastics (note: burning of polyethylene agricultural wrap was permitted);
- synthetic material, including but not limited to, foams, fibreglass and chemicals; and
- medical waste, pathological wastes, quarantine waste or animal waste.

[205] The NRRP (AQL5) also contained an exemption for burning listed materials in small scale fuel burning devices "in a minor or incidental way and not as the principal fuel".

[206] On balance, the Panel considers that there should be an exclusion similar to that in the NRRP for burning of small quantities of materials that have a low risk of adverse effects from the release of hazardous air pollutants, particularly where they may be difficult to separate from the principal material being burnt. We recommend that the list of prescribed materials in Rule 7.7 (Panel Recommendations) separately identifies those materials that should not be burnt in any quantity (Part A), mainly due to their relatively greater potential for adverse effects, and those for which an exemption can be made for minor and incidental quantities (Part B).

[207] The reference to burning any materials within a landfill or waste transfer station (clause 13 of Rule 7.4 as notified) has been deleted as this duplicates the activity being managed under Rule 7.9

[44] Federated Farmers of New Zealand Combined Canterbury Provinces [3057]
[45] Wamakariri District Council [1560]

(previously numbered as Rule 7.32 in the notified pCARP).

[208] **Section 32AA further evaluation**: the changes described above are moderately substantive in that certain activities that would have been prohibited under the notified provisions are now recommended to be discretionary activities (i.e. burning of certain materials in enclosed devices on properties that are not industrial or trade premises) or permitted in small quantities where the material cannot be readily separated. This appropriately limits prohibited activity status to those activities where the effects cannot be managed due to the nature of the burning. It also provides for consent applications to be made in circumstances where effects can be controlled through appropriate conditions on resource consents.

5.2.4 *Burning in accordance with tikanga maori*

[209] The Panel has also identified that the pCARP did not provide any exemption for the burning of listed materials as part of the exercise of tikanga maori. A particular example of this is the burning of bedding (which may include synthetic materials such as foam) on a marae after a tangi. In this case, the combination of the relatively small quantity of material, the low frequency at which these activities are likely to occur and the restricted number of locations means that there are unlikely to be significant adverse effects. Consequently, we have recommended an amendment to provide for this in Policy 6.16 and as a permitted activity under Rule 7.7 (Panel Recommendations). These changes give effect to Objective 5.5 (Panel Recommendations) by explicitly providing for an aspect of Ngāi Tahu traditional practice.

5.3 Crop residue burning

[210] We heard from a number of submitters in relation to the rules on standing crop residue burning. On the one hand, we were shown a video that clearly illustrated the quantity of smoke generated by this activity and heard evidence about alternatives to crop residue burning. We also heard from farmers about the need for, and benefits of, crop residue burning from their perspective.

[211] The proposed rules include the imposition of crop residue burning buffer areas around Ashburton and Timaru within which a controlled activity consent would be required. The Panel made a number of inquiries of the Council Officers to satisfy ourselves that the proposed management regime would be practical and effective and not impose undue costs, including by obtaining a copy of a consent that had been issued pursuant to Rule 7.9 (as notified, renumbered as Rule 7.13) and information about Council's fees. Ultimately we are satisfied that these rules are appropriate, with the recommended amendments set out in the Officer's S42A Recommendations.

[212] In addition to the rules themselves, we have turned our mind to the extent of the proposed buffer areas. The Panel was presented with evidence from a dispersion modelling study that crop residue burning within a distance of 3 to 4km from Ashburton may result in one exceedance of the ambient air quality standard for PM_{10} over a three year period, when accounted for in combination with contributions from other PM_{10} sources. The Council Officers advised us that they received complaints about smoke from open burning (which includes both crop reside burning and other open burning), but were unable to provide data on the distance at which smoke caused nuisance effects. The Planning Maps attached to the S42A Recommendations version of the Plan show crop residue burning buffer areas around Ashburton and Timaru based on a 4km separation distance (rather than the 5km originally proposed). The Panel supports this recommendation.

[213] We have also recommended a new drop-out non-complying activity Rule 7.12 (Panel Recommendations) for crop residue burning outside the buffer areas that causes an offensive or objectionable effect.

5.4 Burning vegetation, paper, cardboard and untreated wood

5.4.1 *Introduction*

[214] We received many submissions from people concerned that the restrictions on outdoor burning were overly restrictive and impractical. In broad terms, the issues raised included that:

- many areas zoned for urban use currently comprise large lots and have a generally rural character and therefore the prohibition on open burning in urban areas is overly onerous and does not reflect the differing sensitivity of these areas;
- the combined effect of the pCARP restrictions on burning in Clean Air Zones from May to August (inclusive), and of council or Rural Fire Authority fire bans during summer/autumn, means that there is an inadequate window for property owners to manage tree prunings and snow or windfall material[46]. The view was expressed that this could cause perverse outcomes such as a concentration of burning on a few weekends in autumn, resulting in more significant adverse effects than if the burning was more spread out; and
- the boundaries of the Clean Air Zones have not been considered in sufficient detail to take into account local terrain or other features that might mitigate the effects of emissions on the airshed being protected.

[215] We also heard from submitters concerned about the adverse effects of outdoor burning and wanting this activity to be phased out altogether[47] or for larger setbacks from neighbours to be imposed[48].

5.4.2 *Spatial management of discharges*

[216] As discussed in paragraph [187], we have recommended changes to the spatial management framework for outdoor burning. Mr Saunders[49] sought that Rule 7.10 (as notified) be amended to permit outdoor burning on sites greater than 2 hectares in rural zones inside a Clean Air Zone. Interpolating from the provisions for small scale heating appliances, the Council has identified a property size of 2 hectares as being an appropriate threshold to identify "large" properties inside Clean Air Zons where the effects of smoke can be mostly internalised within the property boundary. We consider that the same property size threshold would be appropriate for managing the localised effects of outdoor burning of vegetation and have generally recommended deleting references in the relevant rules to 'rural areas' and replacing it with a condition referring to properties greater than 2 hectares, where appropriate. This means that open burning of vegetation would be allowed, subject to conditions, on all properties greater than 2 hectares in area, regardless of location, but would be prohibited on properties less than 2 hectares in area (apart from the specific exemptions).

[46] Mr Ron Williams [502]
[47] Ms Louise Leitch [402]
[48] Mr Vincent Scully [128]
[49] Mr Ken Saunders [1034]

5.4.3 *Burning in proximity to sensitive activities and urban areas*

[217] Mr Douglas[50] sought that Condition 2 of Rule 7.10 (as notified, renumbered as Rule 7.14) be amended to provide for the situation where an owner/occupier of a sensitive activity within the prescribed separation distance gives approval to the burning. The Panel agrees with this submission.

[218] As notified, Condition 4 of this rule specified a separation distance of 5km between outdoor burning of vegetation and urban areas. Horticulture New Zealand sought that the separation distance be reduced to 2km. Crop residue burning is a particular subset of outdoor burning of organic material. Appropriate separation distances between crop residue burning and townships is discussed in paragraph [210] above. We consider that, in the absence of any technical evidence to the contrary, a separation distance of 4km, consistent with that for crop residue burning, is appropriate.

[219] In addition to this change, we have also recommended deleting the word "urban" and instead referring to any "township or Clean Air Zone". Submitters[51] opposed the use of the word "township" in Policy 6.17 (as notified) and sought that it be amended to "urban zone". As discussed at paragraph [186], given the concerns raised about the definition of urban, we consider that this term should be avoided and that the term township is preferable both in the policy and this rule. We understand the term township to cover small towns or communities, which are generally surrounded by rural land and therefore potentially impacted by outdoor burning. It is also appropriate to refer to Clean Air Zones in Condition 4 of Rule 7.14 (Panel Recommendations), as these are the wider spatial areas surrounding gazetted airsheds and include the larger towns in the region, and the city of Christchurch.

5.4.4 *Outdoor burning in Clean Air Zones*

[220] Many submitters sought that the prohibition on outdoor burning of vegetation in Clean Air Zones during May to August (inclusive) under Rule 7.10 as notified (renumbered as Rule 7.14 in the Panel Recommendations) be relaxed. A variety of relief was sought, including deleting the relevant condition altogether[52], or allowing burning through the winter months subject to certain weather conditions and/or times of day[53]. Mr Cross[54] specifically sought that the month of May be excluded from the prohibition period.

[221] The month of May is a transitional month in terms of PM_{10} air quality. The PM_{10} monitoring data shows that there were no exceedances of $50\mu g/m^3$ (24-hour average) in May 2013 and 2014 (combined) in the Geraldine or Waimate airsheds and only 1 or 2 exceedances in the Ashburton and Rangiora airsheds, respectively. In comparison, there were between 4 and 10 exceedances over the same period in the other airsheds, with 10 exceedances being recorded in Timaru. Consequently, the Panel considers that there is a reasonable basis for treating the Geraldine, Ashburton, Waimate and Rangiora airsheds differently and providing some flexibility for open burning of vegetation, etc during the month of May. Rather than attempting to set conditions to avoid burning during adverse weather conditions, including temperature inversions, we propose the simple solution of limiting burning to defined hours, which will also reduce the size of any burn.

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[50] Mr Robert Douglas [456]
[51] Waimakariri District Council [1353]
[52] Emma Frazer and Barry Heffernan [990], Mrs Carey Barnett [1231] and others
[53] Wamakariri District Council [1544]
[54] Mr Robert Cross [1892]

5.4.5 *Requirement for material to be dry*

[222] Submitters highlighted problems with the requirement for material to be left to dry for 6 weeks in Condition 3 of Rule 7.10 as notified (renumbered as Rule 7.14 in the Panel Recommendations), particularly in the context of the very limited window for open burning in the autumn. The Waimakariri and Selwyn District Councils[55] sought a simple requirement that the material be dry. The Panel is attracted to a more flexible condition as suggested by the District Councils, and also the need for certainty in the event that enforcement action is necessary. We also consider there should be consistency between this rule and condition 2 of Rule 7.15 (Panel Recommendations), the exception for community and cultural events. Consequently, we have recommended that the relevant conditions require that the material is dry and the moisture content is unlikely to exceed 25% dry weight.

[223] Horticulture NZ[56] submitted that condition 3 be reworded so that material that had not been left for the requisite 6 week period could be burned subject to being at least 200m "upwind" (rather than in any direction) of a sensitive activity. In our view, given our recommendation for the simple requirement for the materials to be dry (rather than left for 6 weeks), there should not be an exemption for burning wet organic material.

[55] Waimakariri District Council [1141] and Selwyn District Council [1530]
[56] Horticulture New Zealand [140]

Chapter 6

Policies and Rules for Large Scale Fuel Burning Devices and Industrial and Trade Premises

6.1 Policies

[224] Policies 6.19 to 6.24 (as notified) addressed the management of discharges to air from Large Scale Fuel Burning Devices and Industrial and Trade Premises. The equivalent rules in the Panel Recommendations are Rules 6.20, 6.22, 6.22A, 6.22B, 6.22C, 6.23, 6.24 and 6.24A.

[225] There were wide-ranging submissions on all of these notified policies and substantial amendments were recommended in the Officer's S42A Report (apart from Policy 6.19, which had minor recommended changes, and Policies 6.23 and 6.24 which were recommended to be retained as notified).

[226] The themes raised in relation to Policies 6.20 to 6.22 (as notified) can be considered under the broad headings of:

- enabling discharges that are appropriately located
- the requirement to adopt BPO
- observance of the NESAQ and ambient air quality guidelines
- management of PM_{10} discharges

[227] Each of these themes is discussed in turn in the following subsections.

[228] Policy 6.23 relates to strategic management of electricity supply and Policy 6.24 relates to waste management activities. These policies are discussed separately under the relevant topic headings of large scale internal combustion and waste management.

6.1.1 *Enabling discharges that are appropriately located*

[229] Policy 6.19 (as notified) sought to enable discharges that are appropriately located, while ensuring adverse effects on air quality are minimised. In our view, our recommended changes to Policies 6.6, 6.7, 6.7A and 6.8 (Panel Recommendations), which provide comprehensive policy guidance on locational aspects of all discharges (both new and existing), make this policy redundant. Therefore we have recommended that it be deleted.

6.1.2 *Best Practicable Option*

[230] Policy 6.20 (as notified) sought that all relevant activities apply the BPO so that the degradation of ambient air quality is minimised.

[231] Policy 6.10 (Panel Recommendations) requires all discharges that are allowed by a resource consent to apply the BPO. There is no need to repeat this requirement specifically in relation to large scale fuel burning devices and industrial and trade premises. However, we did consider it appropriate that Policy 6.20 require these activities to identify BPO in relation to their particular circumstances as part of any consent application. This will ensure decision makers have the necessary information to give effect to Policy 6.10 (i.e. implementation of BPO) through conditions, in the event that the

decision is to grant a consent application.

6.1.3 *Observance of the NESAQ and ambient air quality guidelines*

[232] Policy 6.21, as notified, sought avoidance of discharges that would result in an exceedance of the NESAQ or ambient air quality guidelines. As discussed in paragraph [116], this Policy was of particular concern to industry submitters who considered the Plan should more clearly differentiate between effects on ambient air quality (where the standards and guidelines apply) and localised effects (where a more detailed consideration of exposure may be appropriate).

[233] The S42A Report recommended a modified approach whereby applicants for resource consent should demonstrate "observance" of the NESAQ and "regard (had) to" the ambient air quality guidelines.

[234] Having considered the submissions and evidence, we find that Policies 6.3, 6.3A, 6.3B and 6.4 provide sufficient policy guidance in relation to the application of relevant ambient air quality standards and guidelines or, in the case of $PM_{2.5}$, specific guideline values that are not currently included in the standards/guidelines.

6.1.4 *Management of PM_{10} discharges*

[235] Policy 6.22 (as notified) sought that significant increases of PM_{10} concentrations in CAZ be offset in accordance with the NESAQ. This policy was given effect to by Rule 7.14 (as notified). Submissions variously supported or sought deletion or amendment of both the policy and the rule. Key issues raised included that:

- requiring offsetting in the CAZ (rather than the polluted airshed, as required under the NESAQ) is overly onerous and unnecessary given the rural nature of many of the CAZ areas outside the airsheds;
- Rule 7.14 (as notified) was unclear as to whether it applied to existing, as well as new, discharges and should align more accurately with Regulation 17 of the NESAQ; and
- that these provisions are unnecessary as the NESAQ applies in any case.

[236] In their S42A Recommendations, the Council Officers recommended deleting Rule 7.14 (as notified) and replacing it with an advice note referring to the obligation under the NESAQ to decline certain applications for discharge into air of PM_{10}. The Panel agrees with the CRC's recommendation in principle, however we recommend that the wording of the advice note make it clearer that offsetting required under Regulation 17 only applies to applications for new or increased discharges.

[237] The S42A Recommendations version of the pCARP recommended a replacement Policy 6.22 to "avoid significant increases in total PM_{10}" in the CAZ from large scale fuel burning devices and industrial and trade premises, and listed the matters that would be taken into account when determining significance. We consider that the policy would be improved by explicitly linking the management of PM_{10} discharges within the wider spatial area of the CAZ to the outcome of improving PM_{10} air quality in the polluted airshed (i.e. giving effect to Objective 5.4). The way that the pCARP achieves this is through the establishment of thresholds (e.g. PM_{10} stack emission concentrations) and performance standards (e.g. fuel quality) in the relevant rules.

[238] In our view the matters listed under Policy 6.22 as recommended by the Council Officers read more

like assessment criteria and we have largely accepted these and incorporated them into new Policy 6.22B (Panel Recommendations) to this effect. (Note: discussion of the use of "practicability" in clause (d) of Policy 6.22B is discussed in paragraph [175]).

[239] We have also recommended a new Policy 6.22A, to provide guidance that resource consents should generally not be granted for discharges in Clean Air Zones where the concentration of PM_{10} in the discharges exceeds 250 mg/m^3. A policy to this effect is necessary to the overall framework because these discharges are non-complying activities (no change from the notified provisions). There was a similar prohibited activity rule for discharges from large scale solid fuel burning equipment in the Christchurch CAZ 1 and 2 in the NRRP (AQL20 and 21). While there may be financial costs to dischargers to upgrade equipment to meet this limit, we are satisfied that the appropriate technology is available, and that the financial costs are outweighed by the wider benefit in reducing ambient air concentrations of PM_{10} in the Canterbury airsheds.

6.2 General matters

6.2.1 *Odour and/or dust management plans*

[240] Many of the rules in this section of the pCARP (as notified) include a general condition requiring an "odour and/or dust management plan". In all cases the nature of the discharges to air from the particular activity that is the subject of the rule is clearly either dust or odour. We consider it is poor practice to include a generic condition and we have recommended that the requirement for a management plan in the relevant rules should be specific as to the effect being managed.

6.2.2 *Definition of large scale fuel burning device*

[241] Christchurch City Council (CCC) submitted[57] that the definition of a large scale fuel burning device be amended to include "heritage engines prior to a specific date". In the S42A Report, the Council Officers indicated that they considered the most appropriate way to deal with these engines was to include them in Schedule 9. However, this schedule was developed for heritage buildings and relies on them being identified in a district plan. Ms Keller, a planner for the CCC, advised us that these engines are not identified in the district plan for reasons including that many of them are mobile[58].

[242] We have recommended specifically excluding trains (heritage or otherwise) from the definition on the basis that other mobile sources such as motor vehicles, aircraft and boats are excluded. We are therefore left to determine whether there should be an exemption for other types of heritage engines, which might include historical farm equipment, pumps, etc. The Panel was left with no clear sense of how many such heritage items may be captured by the pCARP rules or where they may be located. However, we considered it likely that the majority would be associated with a heritage park or similar and recommend phrasing the exemption in this way.

[243] Other changes we have recommended to the definition are:

- removing reference to the device being located on an industrial or trade premise because we see no effects based reason to make this distinction; and
- removing the exclusion for space heating appliances with a net energy output of less than 40kW as this is self-explanatory from the 40kW size limit in the rule preamble, and

[57] Christchurch City Council [2548]
[58] Statement of evidence of Jeanine Gesine Keller, paragraph 11.3

recognised by the revised definition of a "small scale heating appliance".

6.3 Large scale external combustion sources

6.3.1 *Amalgamation of permitted activity rules*

[244] The pCARP set out permitted activity rules for gas-fired (Rule 7.19, as notified), diesel-fired (Rule 7.20, as notified) and pellet fuel-fired (Rules 7.20 and 7.21, as notified) external combustion devices. Four of the conditions of these rules are identical and generally require that:

- the discharge is vertical and unimpeded;
- the opacity of the discharge does not exceed a certain limit other than during start-up or for brief, intermittent periods; and
- the equipment is maintained at least annually.

[245] Given the degree of repetition, the Panel considers that the readability of the pCARP would be improved by combining these four permitted activity rules into a single permitted activity rule (Rule 7.20 of the Panel Recommendations).

[246] A consequential recommended change is a single, combined table of stack heights that is located separately in a Schedule to improve the overall readability of the Plan.

6.3.2 *Stack height in relation to buildings, structures and land*

[247] Other conditions of the notified permitted activity rules that vary with fuel type and size relate to:

- minimum stack height (conditions 7.19(5), 7.20(7), 7.21(8), 7.22(9), as notified);
- height of adjacent buildings and structures (conditions 7.19(3), 7.20(4), 7.21(5), 7.22(6) as notified); and
- height of land surrounding the stack (conditions 7.19(5), 7.20(5), 7.21(6), 7.22(7) as notified).

[248] In evidence, Mr Pene explained that both the height of nearby buildings and structures (which can cause downwash or eddy effects to a discharge plume), and the elevation of surrounding land (which could cause a plume to impinge on elevated ground), are relevant to the dispersion of emissions and consequently the level of effects[59]. He supported Fonterra's submission[60] that the relevant conditions of Rules 7.19 to 7.22 (as notified) (refer paragraph [247] above) should specify the height of the stack in relation to nearby buildings or surrounding land. This would mean that, for example, the presence of a building taller than 5m may necessitate a taller stack than would otherwise be allowed as a permitted activity but would not automatically trigger the need for a consent.

[249] Fonterra's submission sought that conditions 7.19(3), 7.20(4), 7.21(5), 7.22(6) (as notified) be deleted and conditions 7.19(5), 7.20(7), 7.21(8), 7.22(9) (as notified) be amended as follows, where X is the minimum stack height specified in the notified rules:

> *"X m above ground level within 25 m and 3 m above any building, land or structure within 25 m of the emission stack"*

[59] Mr J Pene, Evidence in chief on behalf of submitter Fonterra Co-operative Group Ltd. Paragraphs 111 and 112
[60] Fonterra Co-operative Group Ltd submission points [730] to [737]

[250] The S42A Recommendations responded to submissions by recommending an altered form of condition 7.20(4) (diesel-fired devices) based on stack height relative to surrounding buildings. Although the specific criteria differed from that notified, the Officers did not make a similar recommendation for changing the form of either the building height or height of land conditions in Rules 7.21 and 7.22 (pellet and wood chip-fuelled devices).

[251] The Panel requested further information from the Council Officers to better understand the basis for the criteria in Rules 7.19 to 7.22 (as notified). We were advised that the criteria were based on three technical reports prepared by NIWA ('the NIWA reports[61]'). We were given copies of these reports, which set out dispersion modelling predictions and recommended minimum stack heights for generic external combustion equipment of different sizes burning a range of fuels. The modelling scenarios assumed that there was a 5m building located adjacent to the combustion equipment stack and that the land surrounding the stack was flat. The conditions in the proposed rules are intended to ensure situations that differ from these underlying assumptions are appropriately managed.

Emission stack height relative to buildings and structures

[252] While the Panel was attracted to the simplicity of the Officers' S42A recommendation in Condition 7.20(4) that the top of the stack be 3m above any adjacent building, this approach is technically inconsistent with the findings of the NIWA reports. For example, the NIWA modelling showed that for diesel-fired devices less than 500kW in size, a 7m tall stack next to a 5m tall building (i.e. 2m height difference) was acceptable, so there is no justification for requiring a 3m height difference.

[253] The amended forms of conditions 7.21(5) and 7.22(6) recommended by the Officers in their S42A Recommendations refer to buildings higher than 40% of the emission stack height within a distance from the emission stack of 5 times the building height. We understand from the Council Reply Hearing Statement[62] that stacks that are outside that envelope (i.e. more than 2.5 times higher than the adjacent building) are not affected by building downwash. However, again, the effect of the Officers' recommended wording is inconsistent with the NIWA reports and is particularly conservative compared to the notified provisions for smaller devices. For example, for a 200kW pellet fuel-fired device next to a 5m building, the S42A Recommendations approach would require the stack to be 12.5m high while the NIWA modelling showed that a 10.5m stack was acceptable.

[254] The best technical information that was presented to us was contained in the NIWA reports and, in the absence of any evidence to the contrary, we find that this is the most robust basis for setting permitted activity limits. For this reason, we have recommended that specific stack height to building relationships be set for each device size/fuel pairing, based on the relativity established in the NIWA reports (which assumed a 5m high building). For example, if the NIWA reports recommended a 10.5m high stack for a particular device size/fuel type, then our recommended permitted activity condition is that the stack must be at least 5.5m (10.5m – 5m) above any adjacent building. Where the NIWA reports recommended a stack height more than 12.5m, then our

[61] NIWA. Definition of Activity Classes for Industrial Boilers Part 1: Assessment of Effects. Prepared for Environment Southland. June 2012
NIWA. Definition of Activity Classes for Industrial Boilers Part 2: Setting Limits. Prepared for Environment Southland. December 2012
NIWA. Definition of Activity Classes for Industrial Boilers Part 3: Applicability to Other Regions. Prepared for Marlborough District Council. January 2013

[62] Paragraph 62, page 13

recommended permitted activity condition is that the stack must be at least 2.5 times the building height.

Emission stack height relative to surrounding land

[255] The Council's further supplementary reply to the Panel's questions (Memorandum of Counsel dated 14 April 2016) included the following: "*With regard to surrounding land, the NIWA assessment assumes flat terrain for the modelling. In circumstances with hills or complex terrain the predicted ground level concentrations can be significantly higher, particularly where the plume impacts elevated receptors.*"

[256] In the S42A Recommendations, the reference in rules 7.20 (4) and 7.21(6) and 7.22(7) to the height of land within "a 25m radius of the stack" had been amended to 100m. The scope cited for these changes was Fletcher Building Ltd and Silver Fern Farms[63]. However, these submissions did not make reference to changing the radius to which the "height of land" provisions applied and were principally related to other provisions of this rule, such as the height of the stack in relation to nearby buildings. Consequently we do not consider there is scope provided by these submissions to increase the radius to 100m and there was no particular reason given in the S42A Report.

[257] We find that the relief sought by Fonterra is the most practical of the options we have considered, as it enables an applicant to comply with the permitted activity rule by increasing stack height, as appropriate, relative to ground level within a 25m radius of the stack (refer paragraph [249]). We consider this preferable to requiring a resource consent, which would simply seek the same outcome. We have therefore recommended deleting Condition 3 of Rule 7.20 (Panel Recommendations) and recommended incorporating the 'stack height in relation to land' requirement into Schedule 5A (Panel Recommendations).

6.3.3 *Combustion of coal*

[258] Under the pCARP, as notified, the discharge into air from coal-fired external combustion devices of any size was a discretionary activity, or a non-complying activity if located inside a Clean Air Zone and unable to meet a stack concentration limit of 250 mg/m^3. The Panel heard from a number of submitters about the importance of coal as a fuel in the Canterbury region. Silver Fern Farms[64] sought that a rule be inserted that provided for burning coal in a large scale fuel burning device as a permitted activity. Straterra sought a similar new rule, with a suggested size limit of 1MW[65].

[259] As set out in paragraph [39], one of the two objectives of the RPS is to "Enable the discharges of contaminants into air provided there are no significant localised adverse effects on social, cultural and amenity values, flora and fauna, and other natural and physical resources".

[260] The Panel considers that the pCARP would better give effect to this Objective by differentiating between fuel burning activities on the basis of the nature and scale of the emissions to air and their potential effects, rather than the particular fuel being burnt. Therefore, we consider that the same activity status should apply to devices burning coal as to devices burning other solid fuels (pellet fuel and wood chips), provided they meet the same performance criteria. The Panel recognises that this still provides a disincentive for coal as more costly emissions control equipment will be required to

[63] Fletcher Building Ltd [2342] and Silver Fern Farms [2468]
[64] Silver Fern Farms [2457]
[65] Straterra Inc [1957]

achieve the same emissions performance as pellet fuel or wood chip.

[261] The combined effect of the notified rules is that discharges to air from pellet fuel-fired external combustion devices less than 1MW in size are:

- a permitted activity provided they comply with (amongst other things) a PM_{10} stack emission concentration limit of 125 mg/m^3 and are either outside a Clean Air Zone or , if inside a Clean Air Zone, they replace the discharge from another device of the same or larger size ; and
- a discretionary activity (outside a Clean Air Zone) or a non-complying activity (inside a Clean Air Zone) if the PM_{10} stack emission concentration exceeds 250 mg/m^3.

[262] We consider that the same conditions should apply to coal-fired devices and recommend that this be achieved by simply referring to "solid fuel" in Condition 7 of Rule 7.20 (Panel Recommendations). Unlike wood-based fuels, coal can contain appreciable amounts of sulphur and it is appropriate, therefore, that a fuel sulphur content limit is included as a condition of this rule.

6.3.4 *Stack testing for condensable particulate*

[263] Schedule 6 prescribes the PM_{10} stack emission testing methodology to demonstrate compliance with the specified PM_{10} limits in Rule 7.20(7) and 7.23 (Panel Recommendations, previously numbered Rules 7.15 and 7.16 in the notified Plan). From the evidence presented, there is limited information about the level of emissions of condensable particulate matter from large-scale combustion sources in Canterbury. The Panel agrees with the proposed requirement for 'large' large-scale combustion devices to undertake stack emission testing for both condensable and filterable particulate matter. Over time this will provide a dataset to improve understanding of the nature of condensable particulate emissions from these sources and their contribution to air quality impacts. However. we were persuaded by the evidence of Mr Keer Keer that:

- the CRC may have underestimated the amount of condensable particulate matter in the emissions from some large scale combustion sources; and
- the technology currently accepted as BPO may be inadequate for the reduction of condensable particulate matter.

[264] Consequently, we consider that there is insufficient information to undertake a reliable analysis of the costs and benefits of setting the permitted activity PM_{10} emission concentration limits in Rules 7.20(7) and 7.23 (Panel Recommendations) as total (i.e. filterable and condensable) PM_{10}. Therefore we have recommended that the limits in these rules be expressed as filterable PM_{10}.

6.3.5 *Activity status*

[265] Similar to the discussion in paragraph [193] in relation to the outdoor burning rules, we consider that where there is a minor or technical infringement of one or more of the permitted activity conditions in Rule 7.20 (Panel Recommendations), any application for consent should focus on the effects related to the particular nature of the infringement. In relation to external combustion devices, if the permitted activity stack height and elevated receptor provisions are infringed, a dispersion modelling assessment may be all that is required to confirm that the proposed (or existing, in the case of an application for a replacement consent) stack height is appropriate. On this basis, we have recommended the following framework in Rules 7.20 to 7.26 (Panel Recommendations):

(a) An activity is a restricted discretionary activity where it does not comply with the following permitted activity conditions in Rule 7.20 (Panel Recommendations):
   i. minimum stack height (Condition 3A); or
   ii. the fuel quality requirements for solid fuels (Conditions 7(c) and 7(d)) and the discharge is outside a Clean Air Zone,
   iii. the PM_{10} stack concentration exceeds 125 mg/m^3 (condition 7(e)), and the discharge is outside a Clean Air Zone; and

(b) An activity becomes a discretionary activity where it infringes any of the other permitted activity conditions in Rule 7.20 (Panel Recommendations), or the fuel quality requirements for solid fuels where the discharge is outside a Clean Air Zone, except that;

(c) the discharges to air from a device burning solid fuel where the stack concentration of PM_{10} exceeds 250mg/m^3 inside a Clean Air Zone is a non-complying activity.

[266] **Section 32AA further evaluation**: In summary, the substantive changes we have recommended compared to the notified rules are:

- a permitted activity pathway for small discharges where there are building downwash effects or elevated receptors, by increasing stack height;
- provision for discharges from the combustion of coal as a permitted activity where it can meet the same performance standards as other solid fuels (i.e. wood);
- removal of the requirement for larger discharges to meet an emission standard based on the sum of non-condensable and condensable particulate matter, while maintaining the requirement for stack testing to include both components; and
- refinement of the drop-out rules, resulting in some activities that would have been discretionary under the notified provisions due to not meeting a condition of a permitted activity rule, being a restricted discretionary activity (enabling a focus on the particular nature of the infringement).

[267] The preceding sections set out in detail the reasons for our recommendations in relation to the rules framework for discharges from large scale external combustion devices. We consider that these changes are reasonably practicable and have assessed that adopting them would more fully serve the provisions of the Act compared to not adopting them.

6.4 Large scale internal combustion sources

6.4.1 *Emergency electricity generation*

[268] Christchurch City Council[66] sought that Policy 6.23 be amended to refer to managing the supply of power "in case of either emergency or excess demand on the network", rather than "when network generation capacity is reduced". Having heard Orion's evidence in relation to emergency electricity generation and peak load lopping (see following sub sections), we find that the Policy should provide for:

- strategic management of the electricity supply by network operators both during times of reduced generation capacity (e.g. low hydro lakes) and excess demand; and
- for network operators and private individuals or companies to operate emergency generators

[66] Christchurch City Council [2572]

during period when the network is not available.

[269] Discharges to air from relocatable emergency diesel generators used to supply the grid are managed under Rule 7.26 (as notified, renumbered as Rule 7.27), which restricts the duration of discharges to 48 hours if located within 50m of a sensitive activity (Condition 1), or 5 days if more than 50m from a sensitive activity (Condition 2). Orion[67] sought in its submission that emergency electricity generation activities carried out by electrical distribution companies be exempt from these conditions.

[270] In her planning evidence on behalf of Orion and Mainpower, Ms Foote stated (para 29):

> *"The Lines Companies consider that in [an] emergency electricity generation situation that these conditions are too restrictive. After the Canterbury earthquakes the Lines Companies installed many generators for extended periods close to sensitive activities to ensure electricity was restore and provided to customers. In such situations it would be completely impractical to apply for resource consent as the diesel generation is required immediately."*

[271] Mr Godfrey of Orion gave evidence that after the February 2011 earthquake, Orion used 28 mobile generators across Christchurch, delivering power to approximately 10,000 people at some point. Almost all of these generators were closer than 50m to sensitive receptors and the longest that any generator operated was 10 days. Mr Godfrey opined that "*Orion's experience heavily points to the public being far more concerned about having power at their property, than being concerned with limited noise/pollution from a nearby generator*".

[272] He also stated that "…*it is generally not economic to operate diesel generators outside of control periods. The normal cost of electricity at times outside of control periods is significantly less than the cost of running a diesel generator*". From this, we understand that there is a strong economic disincentive to operating diesel generators and that, regardless of controls in the Plan, it is unlikely that they would be operated for any more time than is necessary. For this reason, we have recommended a new permitted activity Rule 7.28 (Panel Recommendations).

[273] **Section 32AA further evaluation**: The Panel considers that, on balance, it is appropriate for the pCARP to facilitate discharges into air that are necessary to enable the network lines operator to maintain the supply of electricity in an emergency. Based on the evidence, we consider it extremely unlikely that a more permissive rule framework would result in excessive use of diesel generation by the Lines Companies. Therefore we consider that our recommended approach will better enable people to provide for their social and economic wellbeing, by having more secure access to electricity supply, without compromising air quality.

[274] The definition of emergency electricity generation in the pCARP (as notified) applies only to the generation of electricity to be used on site and specifically excludes electricity distributed via the grid. Therefore, consequential to the recommended new Rule 7.28, we have recommended a deletion to the definition so that it includes electricity generated and distributed via the grid. Further consequential amendments are required to Rules 7.29 and 7.30 (Panel Recommendations), the inclusion of Condition 1A, so that they apply only in situations where electricity is generated for use on site (so that there is effectively no change to the scope of these rules compared to what was notified).

[275] We have recommended minor wording changes to Rules 7.29 and 7.30 (Panel Recommendations),

[67] Orion New Zealand Ltd [2161]

(numbered as Rules 7.24 and 7.25 in the notified Plan) so that the description of stack height requirements is consistent with those for external combustion devices. These changes do not alter the effect of the notified provisions.

6.4.2 *Replacement of "mobile" with "moveable"*

[276] We consider that the term "mobile large scale internal combustion device" in Rule 7.26 (as notified, renumbered as Rule 7.27) is inapt. We consider that the term "moveable" is a more accurate description.

6.5 Discharges of dust from construction and land development activities and unconsolidated surfaces

[277] The submissions on Rules 7.29 and 7.30 (as notified, renumbered as Rules 7.34 and 7.33, respectively), which manage dust discharges not otherwise provided for and dust from subdivision or development, ranged from seeking deletion[68] to retention[69], and raised specific issues including that:

- a definition was required for the terms "unsealed" and "unconsolidated";
- the overlap and differences in activity status for the same activities under these rules is unclear – for example discharges from construction activities are not listed, so would require restricted discretionary consent, but are similar in nature to other development activities and should also be provided for as permitted activities;
- clarification was required whether the 4ha threshold applied to the area of the property or the area of unsealed or unconsolidated land within the property boundary; and
- dust from installation of pipes should be excluded.

[278] Given the wide range of concerns raised in submissions about the scope and clarity of these rules, the Panel has recommended a number of amendments as follows:

- the rules should refer to the activity giving rise to the discharge (rather than the type of property). We recommend these activities be described as "construction of buildings, land development activities or unconsolidated surfaces". Unconsolidated surfaces would include unpaved yards as well as land that has been disturbed by development activities.
- measures to control dust from construction activities and unconsolidated surfaces are well understood and the effects can therefore be managed through dust management plans. Dust management plans should only be required for activities above a certain size threshold as this relates to their potential for offsite effects. For construction of buildings we have recommended a threshold of 3 stories in height so that the rule generally captures commercial buildings and not residential homes. For unconsolidated surfaces we have recommended a threshold of 1,000 square metres (Rule 7.33 of the Panel Recommendations, which was previously numbered as Rule 7.30 in the notified Plan).
- the requirement for a discretionary activity consent for subdivision or development where more than 4ha is unsealed or unconsolidated at any time is removed. As discussed above, we consider that dust controls are well understood and that provided a dust management plan is prepared and implemented, there is no further environmental benefit in requiring a

[68] Bathurst Resources Limited [2247]
[69] Chevron New Zealand [1647]

resource consent.

- where a dust management plan is required but is not prepared and implemented, consent is required as a restricted discretionary activity (Rule 7.34 of the Panel Recommendations which was previously numbered as Rule 7.29 in the notified Plan). The requirement for a restricted discretionary activity consent for "any" discharge of dust beyond the boundary is removed as we agreed with submitters that this was overly onerous and inefficient.
- consistent with the discussion at paragraph [148], where a discharge causes an offensive or objectionable effect, it is a non-complying activity (new Rule 7.35 of the Panel Recommendations).

[279] **Section 32AA evaluation**: The reasons for our recommendations are set out in the previous paragraphs. We are satisfied that our recommended rule framework will enable the construction and land development activities required for the people of Canterbury to provide for their social and economic wellbeing, without compromising the ability to meet Objectives 5.6 (maintain amenity values) and 5.9 (avoiding offensive and objectionable effects).

6.6 Other discharges from Industrial and Trade Processes

6.6.1 *Burning on waste management sites*

[280] Submitters[70] identified that Rule 7.32 (as notified, renumbered as Rule 7.9) would prevent an application for resource consent being made for burning in an enclosed device, such as a waste-to-energy facility or incinerator, at a landfill or transfer station site, while an application could be made for the same activity on any other site as a discretionary activity. As discussed at paragraph [199], the Panel cannot see any effects based reason for this approach.

[281] The Panel assumes that the intent of this rule is to reflect the requirements of Regulation 6 of NESAQ, which states:

> *The lighting of fires and the burning of waste at a landfill are prohibited.*
> *(2) Subclause (1) does not apply if—*
> *(a) the lighting of a fire is to control gas formed at the landfill; and*
> *(b) the landfill complies with the requirements of regulations 25 to 27.*

[282] The equivalent rule in the NRRP (AQL37) refers to outdoor burning, rather than burning *per se*, and we consider that this is consistent with Regulation 6 of the NESAQ which prohibited landfill fires and the practice of setting fire to waste materials to reduce the volume that needs to be disposed to landfill[71].

[283] The Panel recommends amending Rule 7.32 (as notified, renumbered as Rule 7.9) to refer to "outdoor" burning of waste materials and including a specific reference to landfill gas (rather than gas) for clarity and for consistency with the NESAQ. This rule then fits within the suite of outdoor burning rules. Burning waste materials in an enclosed device (such as a waste-to-energy facility) is then managed under Rule 7.8 (Panel Recommendations) if the waste includes materials listed in Parts A or B of Rule 7.7 (Panel Recommendations) or otherwise Rule 7.63 (Panel Recommendations) and,

[70] Mr B M Anderson [2790] and Ashburton District Council [3163]
[71] Ministry for the Environment. 2011. 2011 Users' Guide to the revised National Environmental Standards for Air Quality: Updated 2014. Wellington: Ministry for the Environment. (p 11).

in either case, requires consent as a discretionary activity.

[284] Regulation 8 of the NESAQ prohibits the burning of bitumen on a road. Regulation 8 is given effect through the inclusion of bitumen in the list of materials that cannot be burnt outdoors in Rule 7.8 (Panel Recommendations). For this reason, we recommend that reference to bitumen be deleted from Rule 7.9 (Panel Recommendations).

6.6.2 *Storage and transfer of petroleum products*

[285] The submission by Vector Ltd[72] sought that Rule 7.34 (as notified, renumbered as Rule 7.53) be amended to make it clear that it applied to LPG as well as other petroleum products. The definition of petroleum products in the pCARP is very broad and clearly includes LPG. Therefore, we accept this submission as it improves the clarity of the Plan and recommend the inclusion of the words "liquefied petroleum gas".

6.6.3 *Commercial laundries*

[286] BUPA Care Services New Zealand (BUPA) made a submission on Rule 7.28 of the pCARP (as notified) seeking an exemption for low level odour from residential care services[73]. BUPA operates at a residential care facility a commercial-scale laundry which has odour emissions beyond the property boundary at times. We understand that a key issue is the use of ozone, which has a distinctive odour. In evidence, Mr van Kekem suggested as alternative relief, the inclusion of a specific rule in the Plan managing discharges into air from commercial laundry operations[74]. A new rule was recommended by the Officers (Rule 7.35A in the S42A Recommendations).

[287] The Panel considers that the wording suggested by the Officers would not achieve the intended outcome as it refers to commercial laundries "located on an industrial or trade premises". Residential care facilities and other institutions such as hospitals, which may have similar commercial-scale laundry activities and may use ozone, are not industrial or trade premises. Therefore we have recommended the new rule suggested by the Officers be included (renumbered as Rule 7.55), but be amended to apply to laundries servicing institutions or commercial facilities, as well as industrial or trade premises.

[288] We consider that our recommended amendments would better achieve Objective 5.4, while not precluding the achievement of Objective 5.2.

6.6.4 *Metal working*

[289] A number of submissions were received on Rule 7.36 of the pCARP (as notified, renumbered as Rule 7.56), which controls the discharges into air from a metalworking and welding activities. The Council Officers have recommended a number of changes in response to these submissions in their S42A Recommendations. Further to the Officer's recommendations, the Panel considered the submission of Mr B M Anderson, who suggested that a minimum threshold would be appropriate within this rule to avoid capturing activities with trivial discharges[75]. The Panel finds that it would be difficult to specify a minimum threshold that would be appropriate for the range of activities covered by the rule. However, we agree that this rule could capture very minor activities where there

[72] Vector Limited [809]
[73] BUPA Care Services New Zaland [2099]
[74] Mr D van Kekem. Evidence in chief on behalf of BUPA Care Services NZ Ltd. Paragraph 6.2
[75] Mr B M Anderson [2791]

may be no need for filtration to ensure there are no visible discharges. Consequently we have recommended minor changes to the rule to refer to the discharges being "managed" in such a way that there is no visible discharge. This removes the strict requirement for filtration if the discharge can be managed in some other way to avoid visible discharges (for example through managing the scale of the activity or by dilution in the ventilation system). We note that filtration is required (Condition 2A) where the discharge is within 50m of a sensitive activity.

6.6.5 *Handling of bulk solid materials*

[290] In relation to bulk solid materials, the pCARP as notified set out a very broad definition of 'handling' and the rule framework (Rules 7.37 and 7.38 as notified, renumbered as Rules 7.36 and 7.37 in the Panel Recommendations) prescribes a suite of permitted activity conditions for all handling activities. In comparison the NRRP set different permitted activity separation distance thresholds for blasting (500m) and other handling activities (200m). The impact of this significant change was not discussed in the Council's Section 32 report.

[291] The Canterbury Aggregate Producers Group (CAPG) sought deletion of Rule 7.37 (as notified, renumbered as Rule 7.36) and replacement with a rule permitting all mineral extraction activities subject to, amongst other things, a requirement to prepare a dust management plan[76]. The Panel does not consider that this is commensurate with the nature and scale of the potential effects of dust emissions from mineral extraction.

[292] In response to questions, the Council provided the Panel with further information in a Memorandum dated 8th April 2016. This included suggested wording if the Panel was of a mind to reinstate a 500m setback requirement from blasting activities as a permitted activity condition. The Memorandum noted that where blasting occurs as part of ongoing quarrying or mining operations, the handling rate conditions would likely be exceeded and discretionary activity status would apply. The Memorandum also noted that when blasting is for temporary activities, such as road works or cliff stabilisation, requiring a resource consent when a 500m setback could not be achieved (compared to 200m) would be unlikely to result in significantly better environmental outcomes.

[293] The Panel considers that a greater setback from blasting activities is warranted and broadly accepts the Officer's recommended wording, with minor changes to condition 7 of Rule 7.36 (Panel Recommendations) to explicitly state that only production blasting associated with quarrying (not small-scale blasting associated with road works or cliff stabilisation) warrants a 500m setback.

6.6.6 *Ventilation of buildings*

[294] Rule 7.52 of the pCARP (as notified, renumbered as Rule 7.62) permitted the discharge of contaminants into air from the ventilation of buildings, subject to a number of conditions including that:

- The discharge concentration does not exceed the Workplace Exposure Standards or contain any of the substances listed in Parts 3 or 4 of Schedule 4; and
- A record is maintained demonstrating compliance with the Workplace Exposure Standards.

[295] Bledisloe New Zealand Ltd submitted that the first condition should specify a limit below which contaminants listed in Schedule 4 are permitted and that these should relate to New Zealand or

[76] Canterbury Aggregate Producers Group [3024]

overseas Workplace Exposure Standards[77]. The Panel agrees that it is not practical to prohibit the presence of the listed contaminants at any concentration as this would preclude, for example, the discharge from a building in which a gas-fuelled forklift operated (as there will be trace amounts of carbon monoxide and nitrogen dioxide in the ventilation air). Many of the substances listed in Part 4 do not have New Zealand Workplace Exposure standards and given that international standards may differ, the Panel considers that the approach proposed by Bledisloe is not sufficiently certain as a permitted activity condition. Therefore the Panel recommends that this condition should refer only to compliance with the New Zealand Workplace Exposure Standards. We note that in the event a discharge is found to contain a contaminant not included in the Workplace Exposure Standards at a concentration that is likely to give rise to significant adverse effects, the Council can rely on the recommended new general condition (Rule 7.6 in the Panel recommendations) prohibiting discharges to air with noxious or dangerous effects.

[296] Carter Holt Harvey sought that the second condition requiring maintenance of records showing compliance with the Workplace Exposure Standards be deleted[78]. We agree as we find that the requirement to maintain such records is overly onerous.

6.6.7 *Waste management*

[297] The Waimakariri District Council identified issues with Policy 6.24 (as notified), including that it was worded more as a statement than a policy and that it should refer to not causing "noxious or dangerous" effects rather than "offensive and objectionable effects"[79].

[298] We agree that the policy should be reframed so that it is not a statement. However, we disagree that it should refer to not causing noxious or dangerous effects, because the main discharges of concern with respect to waste management activities are dust and odour, which have the potential to cause offensive and objectionable effects. We consider that the policy would be improved by specifically referring to managing discharges of dust and odour.

[299] In addition, we found the reference to "waste management processes other than the combustion of waste" confusing because the notified definition of waste management included waste incineration but excluded outdoor burning of waste, both of which are combustion of waste. The term waste management is used only in this policy. Therefore, we considered that a description of the activity (storage, transfer, handling, treatment or disposal of solid or liquid waste) should be included in the policy wording rather than requiring the reader to refer to a separate definition.

[300] Rule 7.54 (as notified, renumbered as Rule 7.48) controls the discharges into air from waste transfer sites. The Selwyn, Ashburton and Waimakiriri District Councils submitted that the scope of this rule which relates to "waste transfer sites" is unclear[80]. They sought that the rule be amended to refer to "solid waste transfer sites" to make it clear that the rule is not directed towards hazardous waste. The Officer's S42A report (p13-19) confirms that the rule was intended to apply to solid waste and recommends these submissions be accepted. However, we consider that the amended rule is still not sufficiently clear as the term "solid waste" is not defined in the pCARP and may be interpreted as including solid hazardous waste. The Panel considers that the rule should refer specifically to the types of waste it is intended to capture, being "non-hazardous municipal solid waste, green waste

[77] Bledisloe New Zealand Ltd [1005]
[78] Carter Holt Harvey Pulp & Paper Ltd [2379]
[79] Waimakariri District Council [1365]
[80] Selwyn District Council [1148], Ashburton District Council [907] and Waimakariri District Council [1564]

and cleanfill".

[301] The District Councils also requested that the threshold in the rule be increased from 5 tonnes per day to an average of 10 tonnes per day (the averaging period was not stated). The Panel accepts these submissions, as otherwise the threshold would be set based on the worst 24-hour period, which may not be representative of the overall scale of the activity. We recommend that the averaging period is based on an average over a calendar month. The threshold is based on the rate of "processing" waste. It is unclear what processing means in the context of a solid waste transfer site, and the Panel considers there would be more certainty if the rule referred to the quantity of waste on the property at any time (as opposed to the quantity processed).

[302] The District Councils made similar submissions on Rule 7.56 (as notified, renumbered as Rule 7.50), which manages discharges into air from treatment and disposal of human sewage effluent. They sought that the thresholds in the rule and condition 4 be expressed as an annual average. Again, we agree that the thresholds should not be controlled by the worst case day in the year. However there may be significant seasonal variations in sewage volumes and an annual average may underestimate the scale of the activity and potential effects. Consequently we consider that the same approach as for solid waste quantity thresholds should apply, i.e. an average over a calendar month

6.6.8 *Drop out rule for Burwood Landfill Specific Purpose Site*

[303] On 9 April 2016, the Minister for Canterbury Earthquake Recovery amended the pCARP and the Canterbury Land and Water Regional Plan under Section 27(1)(a) of the Canterbury Earthquake Recovery Act 2011 by inserting new controlled activity Rule 7.58A (renumbered 7.46) and associated Map 14.1 (renumbered 13.1) This rule enables the ongoing operation of Burwood Landfill for the disposal of earthquake waste through to 2021.

[304] Renumbered Rule 7.46 is a controlled activity rule subject to conditions, including Condition 1 which requires that the discharge is not noxious or dangerous beyond the boundary of the Burwood Specific Purpose Site. The Plan architecture requires that there be a drop-out rule in the event that the conditions of Rule 7.46 cannot be met. Consequently, we have recommended a new Rule 7.46A that provides for this as a discretionary activity.

6.6.9 *Activities listed in the general drop-out rule for industrial and trade processes*

[305] Silver Fern Farms sought that the table in Rule 7.59 (as notified, renumbered as Rule 7.63) be amended to remove "freezing works"[81]. They do not support the term "Freezing Works" as they consider it has historical connotations and is somewhat derogatory given modern meat processing operations. The activities associated with the meat processing industry that generate discharges to air include large scale fuel burning devices, wastewater treatment and disposal, stock holding areas and associated activities such as rendering. Each of these activities is covered by other specific rules in the Plan (or listed in Rule 7.63 in the case of rendering plants). Therefore the Panel agrees that the term freezing works should be removed from the table and does not need to be replaced with an equivalent term such as "meat processing".

[306] Ravensdown Fertiliser sought that the same table be amended to remove reference to fertiliser bulk handling activities[82]. We consider this is appropriate as fertiliser bulk handling is covered by Rule

[81] Silver Fern Farms Ltd [2480]
[82] Ravensdown Fertiliser Co-operative Limited [2806]

7.36 (Panel Recommendations).

Chapter 7

Policies and Rules for Rural Discharges

7.1 Policies

[307] Horticulture NZ sought changes to Policy 6.25 to refer to "best" (rather than "appropriate") management practices and to refer to "adverse" effects because the use of agrichemicals and fertiliser will have positive effects[83]. We have accepted this submission and the relief sought, with a minor wording change for consistency.

[308] Waimakariri District Council submission considered that the use of the term "rural activities" in Policy 6.26 raised the issue of when an activity in a rural area is not a "rural activity" and sought that the policy refer to discharges in rural zones, other than of agrichemicals or fertilisers, which are addressed in Policy 6.25[84]. Horticulture NZ sought that this policy be deleted or alternatively replaced with a new policy to "Manage the discharge of dust, odour or smoke into air from rural activities to avoid or minimise potential offensive or objectionable effects beyond the boundary of the property of origin."[85]

[309] We understand the intended scope of the activities managed under Policy 6.26 to be best described as "farming activities", and we consider this is preferable to the relief sought by these submitters, which we find to be too broad.

[310] We also agree there is merit in a new policy of the form suggested by Horticulture NZ. We have amended the wording in new Policy 6.25A (Panel Recommendations) to reflect the emphasis in the rural provisions on managing odour discharges from intensive farming activities.

7.2 Discharges from accommodation of cattle (stock holding areas)

7.2.1 *Definition of activities being managed*

[311] The Section 32 report identifies dairy odour as an emerging issue in the Canterbury region. Historically New Zealand has used pasture–based management systems for cattle, but increasingly off-pasture systems are being used where cattle may be confined for varying periods of time in systems from open concrete yards to covered bark-chip pads and loose-house systems, as well as free-stall barns. The pCARP includes provisions (Rules 7.66 and 7.67 as notified, renumbered as Rules 7.70 and 7.71 in the Panel Recommendations) to manage the effects of the discharge of odour from structures associated with intensive cattle farming.

[312] Dairy NZ and Federated Farmers argued that the source of odour from intensive cattle farming is not from the structure itself, but from the effluent containment associated with it and/or the activity of spreading effluent onto land[86]. They submitted that the relevant rules should be deleted as discharges into air from management of animal effluent is addressed by Rules 7.68 and 7.69 (as notified, renumbered as Rules 7.73 and 7.74 in the Panel Recommendations). In the case of off- same way that buildings housing intensive poultry or piggery operations are a source of odour.

[83] Horticulture New Zealand [1081]
[84] Waimakariri District Council [1430]
[85] Horticulture New Zealand [1082] and [1083]
[86] Combined Canterbury Provinces, Federated Farmers of New Zealand [3078] and [3079]

However this submission raises an important issue as to the broad definition of 'stock holding area' in the pCARP, which includes milking platforms and farm raceways used to hold cattle during milking. This issue was also raised by Mr Bray, who sought that a definition of "factory farming of cattle/cows" be included in the Plan to establish a minimum stocking rate to control the environmental effects of odour[87].

[313] In the Panel's view, a distinction can be drawn between intensive cattle farming using off-pasture systems and conventional dairy activities such as milking sheds, which are a normal part of the rural environment. We believe this is consistent with the statement in the Council Reply Hearing Statement that Rule 7.66 (as notified) "*addresses cattle barns*"[88]. In our view the defining feature of cattle barns is that they are used to house (accommodate) cattle and that they are roofed (although they may be open-sided).

[314] Ashburton District Council contended that the rearing of juvenile animals be exempt from the rule[89]. The Panel agrees that this is reasonable as rearing calves indoors is a normal rural activity and is unlikely to give rise to appreciable odour effects. We are of a view that a minimum stock threshold is appropriate and, moreover, is consistent with the approach taken for intensive pig and poultry farming.

[315] AgResearch Limited's submission principally related to the setbacks in the rule. However it became apparent at the hearing that there was an underlying issue concerning a lower threshold for the number of cattle being held. In the absence of a lower threshold, the rule could capture a variety of animal health and research facilities that would not be of a scale to give rise to appreciable odour effects. In their Memorandum of Counsel dated 8 April 2016, the Council suggested that an appropriate lower threshold would be 30 cattle and we accept this recommendation.

[316] Selwyn District Council's submission raised a number of issues with the monitoring and enforceability of Rules 7.66 and 7.67 (as notified, renumbered as Rules 7.70 and 7.71 in the Panel Recommendations). We agree that it would be difficult for a Council Officer to readily determine the time period for which cattle were held and that the pCARP approach is too complex. SDC suggested a redrafted rule that referred explicitly to the particular activities giving rise to the discharges. We agree that where an activity can be readily described within a rule, this is preferable to requiring the reader to consult a separate definition.

[317] Taking into account all these matters, the Panel recommends that the rules manage discharges from "*where more than 30 cattle (excluding calves) are accommodated in a barn or other roofed structure*".

7.2.2 *Provision for discharges from existing structures*

[318] The SDC's suggested approach also allowed for existing structures to be a permitted activity even where cattle numbers increase, so long as an odour management plan was prepared. We understand that most of these activities would be required to prepare an odour management plan in any case under Rules 7.73 and 7.74 (Panel Recommendations). Given the significant investment in existing infrastructure, the requirement for a restricted discretionary activity consent (where consent could be declined) for existing activities where stock numbers increased by more than 10% seems unreasonable and this requirement is also difficult to monitor and enforce. Our recommended

[87] Mr Roger Bray [2295]
[88] Page 19
[89] Ashburton District Council [897]

Condition 2(c) of Rule 7.70 (Panel Recommendations) removes the 10% limit and substitutes a requirement to prepare and implement an odour management plan.

7.2.3 *Separation distances*

[319] A number of submitters (Selwyn, Lincoln University, AgResearch, Hurunui, Federated Farmers and Ashburton) sought a reduction in the permitted activity buffer distances from structures housing cattle to 200m or 400m from the property boundary (or sensitive activities) and 1000m from areas zoned for urban use. The District Councils also highlighted the potential for inconsistency with district plan setback provisions. The difficulty we are faced with in relation to the district plans is the different approaches taken in them. We consider that the Plan should set a consistent approach across the region and that it is problematic to defer to district plan buffers where these exist and perhaps differ from the Plan. Unfortunately there was no technical evidence presented to support the separation distances proposed by either the Council or submitters, however on balance we were inclined to agree with the submitters' views that the pCARP provisions were overly conservative. We note that to achieve a 500m separation distance from the boundary, at a minimum a farm would need to be more than 100 hectares (nearly 250 acres) in area (1000m x 1000m).

[320] We have recommended that in Rule 7.66 (as notified, renumbered as Rule 7.70) the separation distance from the property boundary be reduced from 500m to 200m, and that a new condition be included requiring a separation distance of 500m from a sensitive activity on another property.

[321] In relation to separation distances from land zoned for urban use, we accept that a lesser distance of 1000m is appropriate. However, we consider that the key issue is separation from residentially zoned land, as industrial and commercial zones are also "urban" but have lower sensitivity to odour. This is reflected in our recommended change to Condition 1(c) of Rule 7.70 (Panel Recommendations).

7.3 Animal effluent

[322] Rule 7.68 (as notified, renumbered as Rule 7.73) set out conditions for pH and dissolved oxygen in liquid slurry or effluent. We understand that the purpose of these conditions was to ensure that effluent treatment systems are properly designed and operated to minimise odour emissions.

[323] We received technical evidence from Mr John Crawford on behalf of Federated Farmers in relation to the relevance and reliability of the proposed conditions. In relation to pH, we were directed to the *Effluent Technical Note – odour management for storage ponds*, published by Dairy NZ. Mr Crawford explained that adjustment of pH in an effluent storage pond was a potential management intervention if a pond became overly odorous, but he pointed out that the Technical Note does not recommend ongoing management of pH as a preventative measure for odour. We have read the technical note and it is clear that pH adjustment is not a straightforward matter as there is often no practical way to mix the lime into a pond and, further, there is the potential to over-dose with lime and generate odour from ammonia. Mr Crawford also had concerns about the practicality of requiring all farmers to purchase pH meters and maintain their calibration.

[324] In relation to dissolved oxygen, we understand from Mr Crawford's evidence that it is impractical to achieve a positive dissolved oxygen concentration in the slurry at all times and that, in any case, this will have little impact on whether the effluent is odorous.

[325] We accept this technical evidence that the proposed conditions are unworkable. On balance, we

consider that the rule framework will still be effective in the absence of these specific conditions as the odour management plan can be relied upon.

[326] We have recommended deleting the reference to the odour management plan being a component of a Farm Environment Plan where the latter is required under the Land and Water Regional Plan because this is simply repetition of the guidance in Schedule 2.

[327] A number of submitters also sought that the requirement to maintain records (Condition 6 as notified) be deleted. The Panel considers that the requirement to maintain these records is not unreasonable and it would enable the Council to investigate odour complaints. We have recommended some minor wording changes to Rule 7.73 (Panel Recommendations) to improve clarity and consistency with other rules.

7.4 Application of agrichemicals or fertilisers

[328] We received several submissions, including a detailed submission and evidence from Horticulture New Zealand (Horticulture NZ) in relation to Rule 7.72 (as notified, renumbered as Rule 7.77)[90]. Horticulture NZ's submission sought to explicitly embed relevant aspects of NZS 8409:2004 into the rule framework and include separate provisions for application of fertiliser. Although we commend Horticulture NZ for the desire to ensure that best practice application of agrichemicals and fertilisers is required of all operators, we are inclined to agree with the Council Officer's view in the S42A Report that the suggested approach goes further than is required of the Council in exercising its functions under Section 30 of the RMA with regard to the management of discharges of contaminants into air. We are also mindful that NZS 8409:2004 is a comprehensive and detailed document and that the permitted activity conditions need to be readily auditable by a Council Officer. For this reason, we have recommended adopting in part Horticulture NZ's relief that the rule refer to the specific relevant parts of NZS 8409:2004, which they have identified as Appendix L4 (Storage), Part 5.3 (Use), Appendix S (Disposal) and Appendix C9 (Records). We have added further clarification that this is only to the extent that these sections are relevant to the particular substance and application method being used.

[90] Horticulture New Zealand [1092]

Chapter 8

Policies and Rules for Small scale heating appliances

8.1 Overview

[329] Numerically the space heating provisions attracted more submissions than any other part of the Plan. It was clear to the Panel that communities and people within the Canterbury Region hold strong views concerning controls upon home heating options, particularly controls that impinge upon the use of log burners as a principal heat source in the winter months. The Plan responds to this viewpoint by permitting the ongoing use of ultra-low emission burners (ULEBs) and their liquid/gas equivalents throughout the Region without a cap (limitation upon numbers). But this did not stifle criticism and concerns about most aspects of the Council's space heating strategy.

[330] In these circumstances we consider it incumbent on us to respond to the submissions in some detail. We do this despite the fact that we recommend only two substantive changes to the space heating provisions, coupled with a revision of the format and drafting of the rules.

[331] The substantive changes we recommend are:

- The alteration of a discretionary activity status to restricted discretionary in relation to the rule that allows secondary emission reduction devices to be fitted to appliances located on sites under 2ha in CAZs.
- The enlargement of the time period from 15 to 20 years during which LEBs may be used in four of the CAZs.

[332] The reasons that prompted the time period change will emerge from our detailed response to the submissions as a whole. After this we shall detail the changes we recommend to the space heating definitions, policies and rules; including the reasons for the other substantive change to convert one rule to a restricted discretionary status. Our response to the submissions will cover these topics: the space heating strategy; the main themes of the submissions; the history of wood burner controls in Canterbury; the present exceedance levels in the airsheds; the $PM_{2.5}$ debate; the availability and cost of ULEBs; and the future subsidy proposals.

[333] **The Space Heating Strategy:** The pCARP Space Heating Strategy is based on the two- tiered spatial division of the Canterbury region into defined areas. The main division is of the entire region into two areas, being:

- outside CAZs; or
- inside CAZs.

[334] A further and secondary division is based on whether properties both outside, and within, CAZs are:

- 2ha or greater in area, or
- under this size limit.

The policies, and more particularly the rules, are framed with reference to these four spatial concepts.

[335] A key focus of the space heating strategy is upon the phased introduction of ULEBs and liquid or gas enclosed burners in CAZs by 1 January 2034 at the very latest. Only the Geraldine and Waimate CAZs are exempt from this requirement. Within these two zones discharges from low-emitting burners (LEBs) are permitted indefinitely. Over time properties in all the other CAZs will be subject to a phase-out of open fires (largely in place now), older style enclosed burners and LEBs. Because the previous Air Plan imposed controls on these types of appliances at different times in different areas it was necessary to stipulate different phase-out dates in the rules to match the differing situations within the zones.

[336] Another key plank of the strategy concerns better burning practices. The Plan rules provide that within CAZs, and outside CAZs on sites less than 2ha, the following requirements apply:

- enclosed solid fuel burners installed after 28 January 2015 must be low, or ultra-low, emitting burners (otherwise they are prohibited).
- solid fuel used in burners must not have a sulphur content above 10% or a moisture content above 25%.
- pellet fuel must meet the pellet fire manufacturer's instructions.
- a visible smoke discharge from burners after 15 minutes from start-up, and 5 minutes from refuelling, is impermissible.

[337] Hence, these requirements ensure that in all populated areas throughout the Canterbury region burners installed in breach of the pCARP after it came into force (28 February 2015) are outlawed, as is the use of unsuitable wood and pellet fuel; while a 'no visible smoke' rule is also introduced. Only properties of 2ha or more outside CAZs are not subject to the requirements.

[338] **The Submissions:** A myriad of submissions were filed in relation to the space heating provisions of the Plan. Some of the major themes advanced by various submitters and in various ways were:

- that the Plan should include a greater focus on improved education and monitoring of burner operation and maintenance, and compliance as well; and a lesser emphasis on a phased introduction of ULEBs.
- that the installation of ULEBs was not a financially viable option for many home owners and this would compromise the imperative of keeping the most vulnerable of households warm and dry in the winter months, despite the availability of assistance subsidies.
- that the 15 year limit upon the continued use of LEBs was arbitrary and should be abandoned, or at least relaxed.
- that implementation of the space heating strategy should await a likely review of particulate monitoring because of the emerging view that long term exposure to $PM_{2.5}$ is a better indicator of adverse health impacts than is the present standard of daily PM_{10} exceedances.
- that at least the Christchurch, Rangiora, Kaiapoi and Ashburton airsheds can sustain a longer phase in period for ULEBs because of the significantly improved air quality achieved by virtue of the controls imposed under the previous regional plan.

[339] These, and indeed all of the submissions upon space heating, have been closely considered by the Panel in light of the obvious fears of many submitters concerning the potential health, financial and amenity impacts of the new provisions.

[340] **The LEB Recommendation:** The Panel agrees with and accepts the general direction and intent

of the space heating strategy prescribed in the Plan. However, we recommend a substantive change to the LEB rules applicable in the Christchurch, Rangiora, Kaiapoi and Ashburton CAZs. This is an amendment to Rules 7.86(3)(a) and 7.87(3)(a) to allow LEBs to be used for 20 years from their date of installation, as compared to the 15 year period allowed under the Plan as notified.

[341] **Wood Burner Controls in Canterbury:** Environmental management in New Zealand was the responsibility of a plethora of ad hoc boards until 1989 when 16 regional councils were established.[91] The enactment of the RMA in 1991 resulted in defined responsibilities for environmental management, including requirements upon regional councils to manage discharges into land, air and water.

[342] Confronted by a serious air pollution problem in Christchurch, the CRC was a pioneer in relation to particulate discharge controls. The air quality chapter of the NRRP was notified in 2002 including rules that:

- required new wood burners to meet an emission standard of 1 gram of particulate per kilogram of wood burnt (i.e. to be LEBs);
- required the replacement of older style burners with LEBs;
- banned the installation of new burners not replacing an existing burner, and thereby imposed a cap on the number of burners in the city; and
- banned the ongoing use of open fires.

[343] Such rules applied progressively in Christchurch from the beginning of 2002. In 2004 the NESAQ regulations were passed, but the regulations that established a national 1.5 gram emission standard for wood burners did not become operative until 2005.

[344] Similar controls were applied in Rangiora, Kaiapoi and Ashburton from 2011 although the requirement that replacement burners must be LEBs applied region wide from the beginning of 2004. This requirement aside, there were no controls imposed in Timaru, nor in Geraldine and Waimate.

[345] This means that the CAZs in the Canterbury region are now in different situations with regard to what is permitted and what is banned. For this reason the pCARP wood burner rules are necessarily tailored to meet the different situations within the CAZs.

[346] The table below depicts the differences.

CAZs	**Controls imposed from:**	**Open Fires**	**"Older Style" Burners**	**LEBs**
Christchurch	2002	Banned *	Banned	May be installed to 01.01.2019 and used until the latter of 01.01.2019 or 15 years from installation
Rangiora	2011	Banned *	Permitted for 15	May be installed

[91] Under the then Local Government Act 1972

Kaiapoi Ashburton			years from installation	to 01.01.2019 and used until the latter of 01.01.2019 or 15 years from installation
Timaru	Nil	Banned * (since 31.12.2015)	Permitted to the latter of 01.01.2017 or 15 years from installation	May be installed to 01.01.2019 and used until the latter of 01.01.2019 or 15 years from installation
Geraldine Waimate	Nil	Permitted to 31.12.2016	Permitted to the sooner of the beginning of 2020 or the sale of the dwelling	A permitted activity (no phase out provision)

**Note: Open fires installed before 1 January 2015 are not subject to the ban if located outside CAZs, or within CAZs but on a property of 2ha in area or greater.*

[347] Hence, under the pCARP LEBs may only be used until 1 January 2019 or until the beginning of 2034, at the latest. Thereafter the key plank of the space heating strategy, the use of ULEBs, kicks in except in the Geraldine and Waimate CAZs.

[348] **Present Exceedance Levels:** Under the NESAQ, regional councils must conduct monitoring in areas where it is likely that ambient air quality does not meet standards set for various contaminants[92]. For PM_{10} the standard is 50 micrograms per cubic metre expressed as a 24-hour mean ($\mu g/m^3$). One such exceedance in a 12 month period is permitted, but any further exceedances constitute a breach under the NESAQ[93]. There are eight airsheds in Canterbury[94]. PM_{10} monitoring commenced first in Christchurch and Rangiora in 1999, then in Kaiapoi in 2001, and in Ashburton, Timaru, Geraldine and Waimate in 2005.

[349] The table below provides a snapshot of the highest PM_{10} exceedance recorded in each airshed, the number of exceedances in each of the last two years and the second highest exceedance in those years for each airshed.

[92] NESAQ Regulation 15
[93] NESAQ Regulation 16
[94] Washdyke, previously part of the Timaru airshed, was severed off and gazetted as a separate airshed on 15 July 2015.

Airshed	Highest Daily Average PM_{10}	2014		2015	
		Number of Exceedances	Second Highest Daily Average PM_{10}	Number of Exceedances	Second Highest Daily Average PM_{10}
Christchurch **- St Albans** **- Woolston**	228μg/m³ on 31.07.2001 172μg/m³ on 10.07.2006	10 14	66 75	4 4	58 56
Rangiora	125μg/m³ on 10.07.2006	3	51	3	53
Kaiapoi	172μg/m³ on 22.06.2003	14	75	13	66
Ashburton	137μg/m³ on 28.06.2006	9	76	1	49
Timaru	192μg/m³ on 20.06.2006	41	101	26	95
Geraldine	94μg/m³ on 14.09.2009*	4	56	3	53
Waimate	112μg/m³ on 14.09.2009*	8	61	9	75
Washdyke	123μg/m³ on 14.09.2009*	3	56	4	57

**Note: On 14 September 2009, Canterbury experienced a dust event. This day aside, the highest recorded daily averages in these airsheds were Geraldine 72, Waimate 97 and Washdyke 82.*

[350] As can be seen, marked improvements have been achieved in reducing PM_{10} exceedance levels in each of the four airsheds that have been subject to air quality controls for a decade or more. This is particularly so in the Christchurch airshed where a downward trend has been evident for some years, resulting in a PM_{10} winter mean that is 46% of the 1999 level. But whether the low 24 hour levels achieved in 2015 will continue is uncertain. Meteorological conditions, particularly low wind speeds and a temperature inversion on winter evenings, can significantly influence PM_{10} levels. By contrast the improvement in the remaining towns, Timaru, Geraldine and Waimate, is less obvious, consistent with the later introduction of controls in these airsheds.

[351] Despite these trends, calculating the required reduction from home heating if each airshed is to become compliant at some future date is problematic, to say the least. There are numerous factors that require assessment. PM_{10} in ambient air comes from a mix of sources; the main contributors being home heating, motor vehicles, industrial emissions and natural dust. In the Canterbury region the contribution of home heating varies from about 60 to over 90%, depending on the airshed. Vehicle emissions and natural PM sources are beyond the reach of air plans. While industrial emissions are the second highest contributor, at 7 to 17%, there is limited scope to reduce this contribution if adverse economic effects are to be avoided. Meteorological conditions are another variable.

[352] Faced with a request from the Panel to quantify the magnitude of reduction in home heating and other emission sources for each airshed to meet the NESAQ, the air quality investigation team responded:

> "*Unfortunately the data required to complete (such) calculations have a high level of intrinsic uncertainty, so the level of uncertainty in the final estimates is also high".* [95]

[353] We commend the scientists for responding to this request with such candour.

[354] **The $PM_{2.5}$ Debate:** As noted earlier, one of the themes of the submissions was that implementation of the pCARP Space Heating strategy should await a likely review of the present NESAQ PM_{10} standard. An aspect of the argument was that any such review may result in a different monitoring focus and, thereby, call in question the validity of the strategy.

[355] We do not accept this argument. But the present focus on $PM_{2.5}$ is an important development and one that confirms, we think, the need for a more measured approach to implementation of the Plan strategy.

[356] $PM_{2.5}$ is a subset of PM_{10}. It comprises the finer particles 2.5 microns in diameter (i.e., 1 micron is one thousandth of a millimetre). These fine particles are anthropogenic (man-made), more penetrative than the coarser PM_{10} particles, and able to enter the recesses of the respiratory system and also the bloodstream. Following an extensive review of the scientific literature the WHO concluded that:

> (a) the casual link between $PM_{2.5}$ and adverse health outcomes in human beings was confirmed and strengthened, and
>
> (b) in setting exposure guidelines it was recommended that the annual average take precedence over the 24 hour average.[96]

In New Zealand the Parliamentary Commissioner for the Environment has recommended a review of how PM is managed, including as to "the value of setting rules for $PM_{2.5}$ and for long-term exposure" and "whether the PM_{10} rule still has value." [97]

[357] Even accepting these conclusions, and the recommendations, we are not persuaded they provide a basis to put the Plan strategy on hold. The WHO report recorded that exposure to coarser particles remained harmful to cardiovascular and respiratory health, so that "maintaining independent short-term and long-term limit values for ambient PM_{10} in addition to $PM_{2.5}$ was 'supported' " [98]. If and when, there will be a review of the NESAQ is unclear. The better course, in our view, is to fully implement the Plan strategy, but have regard to this increased focus on $PM_{2.5}$ in assessing the space heating plan provisions in particular.

[358] **The Availability and Cost of ULEBs:** The shift from low emitting to ultra-low emitting wood burners is predicated on the assumption that the regulatory requirements of the Plan will drive the research and development of ULEBs that are both reasonably priced and capable of achieving an

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[95] Appendix 5 to Section 42A Reply Report, science memo 4 March 2016 at paragraph 1, page 1
[96] WHO Review of evidence of health aspects of air pollution, 2013
[97] Commentary by the Parliamentary Commissioner for the Environment on the 2014 Air Domain Report, March 2015 at page 52
[98] WHO Report – Page 35

emission standard of 0.5 grams of particulate per kilogram of wood burnt. This assumption gains support from the fact that since amendments were made to the previous air plan by the Minister for Earthquake Recovery in 2013, four ULEBs have been developed and authorised for installation in Canterbury homes and a good number of installations have already occurred. Given that the Plan removes any cap on the number of wood burners and permits their use in all CAZs the underpinning assumption is said to be soundly based.

[359] There is no doubt that ULEBs are now readily available, including established brands imported from Europe as well as locally developed brands. The concern that remains is cost. LEBs can be purchased at a price up to about $3000 depending on size and heat output. The market price for ULEBs is in the range of $7,000 to $11,000[99]. There is also a marked weight differential that makes the installation of ULEBs more taxing.

[360] **The Subsidy Proposals:** A number of detailed health impact assessments were commissioned focussed upon Christchurch and Timaru households. These contain a wealth of information concerning:

- house insulation levels;
- heating costs, according to heat source;
- the prevalence of wood burner use;
- wood cost, including the level of access to free wood;
- household income levels; and
- the prevalence of chronic illnesses per household.

It is not possible to do justice here to the detailed information contained in the assessments.

[361] But, various themes were common to all the assessments regardless of area. These included: that the thermal efficiency of particularly older houses is poor, the use of wood burners is high (20-25% of households), most users are middle or upper income earners, wood burning is affordable (second only to heat pumps), over 20% of users suffer from "fuel poverty" [100], a similar percentage of users gather firewood free of charge, and the presence of chronic respiratory and cardiovascular illnesses in wood burning households is pervasive.

[362] Unsurprisingly, a further theme of the assessments was a primary recommendation that initiatives were required to develop and deliver targeted heating and insulation subsidies and awareness campaigns if the adverse health impacts of wood burner restrictions were to be mitigated.[101]

[363] The Panel requested additional information concerning the provision and level of financial assistance to be made available to vulnerable householders. This was provided through the regional manager of implementation support. [102] Assistance of this kind is a joint initiative of the Canterbury District Health Board (CDHB) and the Regional Council, who in turn work in with other community agencies as well as government departments and the trading banks. General practitioners and clinicians are encouraged to refer vulnerable patients, particularly those suffering from a chronic

[99] pCARP s42A Report - Appendix 6 ULEB development and market
[100] Fuel poverty is defined as when a household's energy cost is more than 10% of the annual household income.
[101] See for example, HIA: Potential effects of wood burner restrictions on wood burning households in Timaru, February 2015 (page 1)
[102] Air Plan s42A Report, Appendix 2 pCARP: Home Heating Assistance Programme

illness, to the assistance providers. The assistance may comprise, support and advice on energy efficiency, insulation, heating options or health related matters.

[364] In relation to targeted financial assistance, subject to meeting means criteria, house owners may be eligible to receive $1000 for the replacement of a wood burner or $2000 for the installation of a heat pump. The Council may also provide discretionary funding to meet fuel costs, for example where a needs assessment indicates particular vulnerability.

[365] A targeted air quality rate is to be applied in each of the CAZs to cover the cost of financial assistance. The budget to 2021 is shown in the table below by reference to the relevant amounts in 2016 and 2021.

	Christchurch	**Rangiora**	**Kaiapoi**	**Ashburton**	**Timaru**	**Geraldine**	**Waimate**
2016	$200,000	$40,000	$40,000	$40,000	$200,000	$20,000	$20,000
2021	$227,186	$45,437	$45,437	$45,437	$227,187	$45,437	$22,719

[366] In each of the intervening years there will be a modest percentage increase resulting in the higher figures shown for 2021.

[367] The Panel has concerns about the adequacy of the financial assistance package. A thousand dollars may be enough to enable some house owners to purchase an LEB before 1 January 2019, but it is hardly meaningful assistance in relation to the purchase of an ULEB. The package appears to be structured to encourage an uptake of heat pumps, and while this may be understandable it does not meet the needs of the most vulnerable households, in particular those people who have access to free firewood. Nor do the total sums budgeted seem to be sufficient. The Panel's concern is that the critical balance between air quality and warm homes will not be achieved, fuel poverty will result and that inevitably there will be adverse health impacts.

[368] **Conclusion:** The Panel, having considered the various matters discussed above, asked itself whether the Plan strikes the right balance in relation to implementation of the space heating strategy. We concluded that implementation should occur over a somewhat longer timeframe than that proposed in the Plan.

[369] Canterbury has led the way in New Zealand in relation to controlling PM_{10} emissions. The Regional Council confronted Christchurch's serious air pollution issues before open fire controls and national contaminant standards were imposed through the NESAQ. It introduced a 1 gram emission standard for wood burners and the Plan imposes a 0.5 gram limit, whereas the NESAQ still stipulates 1.5 grams. Christchurch and its satellite towns are now approaching a PM_{10} compliant state, save perhaps for Kaiapoi. Certainly the public perception, confirmed throughout the hearings, is that air quality in the City has improved immeasurably. While the easiest gains have now been realised, the Plan seeks to further limit PM_{10} levels by improved controls on industry and households. The increased focus on dry wood use, the introduction of a no smoke rule and the phasing in of ULEBs is bound to produce at least modest gains.

[370] Uncertainty is another factor. Air scientists emphasise the difficulties inherent in prescribing measures required to achieve compliance with the ambient standards because of the number and volatility of the variables. Regardless, regional councils remain subject to the NESAQ PM_{10} regime, with its prescribed framework for allowable exceedences.

[371] We consider that the Parliamentary Commissioner got it right in recommending that air quality policies should be designed to achieve "progressive improvement". Some gains are more easily made, but ultimately improved air quality is a long term endeavour. In the context of the Plan rule framework, we consider that on balance amending clauses 3(a) of Rules 7.86 and 7.87 to allow LEBs to be used for 20 years from the date of their installation will provide further time for the development of more affordable ULEBs while leaving the incentive for research and development intact, and will also allow users more time to prepare for the LEB phase-out. Importantly, we believe the change should also provide increased scope to provide better protection to the most vulnerable households through a revised assistance initiative as well.

[372] For completeness we note that the substitution of a 20 year from installation usage period for LEBs does not apply in the Timaru CAZ. The 15 year limit will continue to apply. This is essential because PM_{10} exceedances in the Timaru airshed remain at a very high level, both in terms of the daily averages and the number of exceedances per annum (see table at paragraph [349]).

[373] **Section 32AA Evaluation:** Most, if not all, of the matters considered in the preceding lengthy discussion are relevant to, and inform, this evaluation. The proposed move to a 20 year usage period for ULEBs in four CAZs effect a modest increase (33%) in the time lapse before only LEBs will be permitted in these zones. As the discussion demonstrates we were confronted with other options raised by submitters, but rejected these in favour of a lesser change that only extended the phase-in of the space heating strategy to a limited degree. On balance, we concluded that the benefits identified in [371], being increased time for the development of affordable ULEBs, and for LEB users to plan and prepare, plus the protection of vulnerable households, outweighed the "cost" involved being a small insult to implementation of the ULEB strategy

8.2 Definitions

[374] The space heating definitions are separate from the general definitions in the definitions table. The pCARP (as notified) contained as the final item in the table a definition of a "space heating appliance", as follows:

> *Means any appliance for the purpose of heating space, or heating liquid for the purpose of heating space, or heating liquid for the purpose of heating space, and includes but is not limited to any domestic solid fuel burner or domestic liquid or gas fuel burner defined above.*

[375] The definition of a "domestic solid fuel burner" listed open fires, older-style enclosed burners, LEBs and ULEBs; and these are separately defined in the table. The "domestic liquid or gas fuel burner" definition is:

> *Means any stationary petrol, diesel or gas burning device:*
>
> *(a) Installed in a dwelling house for the purpose of providing either space or water heating; or*
>
> *(b) With a net energy output of 40kW or less that is installed on an industrial or trade premise.*

[376] We recommend a revised approach based on adoption of the term "small-scale heating appliance" defined as follows:

> *Means*
>
> *(a) An open fire, older- style enclosed burner, low-emitting enclosed burner or ultra-low emitting enclosed burner;*
>
> *(b) A stationary petrol, diesel or gas burning device with a net energy output of 40kW or less used for the purpose of heating space, or heating liquid for the purpose of heating space.*

[377] The Panel considers that the proposed name provides a better generic description of the range of burners/devices covered under the space heating provisions. Moreover, the proposed definition:

- Becomes self-contained, in that it does not require readers to consider two further definitions located elsewhere in the table;
- Includes reference to all but one of the elements contained in the domestic solid fuel/liquid or gas burner definitions, so that these definitions are rendered redundant and can fall out; and
- Removes reference to the element of location (a dwelling or an industrial/trade premise) in relation to liquid or gas burners, which the Panel considers was unnecessary.

In keeping with the generic status and importance of the definition we recommend that it be repositioned at the beginning of the space heating definition section.

[378] We consider the single generic definition makes the definition more readable and promotes clarity. Despite the breadth of the change it comprises a mix of minor and consequential changes, plus the removal of the location element discussed above. No rationale was provided for its inclusion, and while the locations identified reflect the pattern likely to exist in practice, we can see no basis to impose those locations as requirements, nor should the net energy output level (40kW) be limited to devices in industrial/trade premises.

[379] **LEBs and ULEBs:** With reference to these definitions we recommend deletion of "to achieve" as recommended by the Officers (S42A Recommendations), and substitution of "as achieving" to make the expression of the wording grammatically correct.[103] We concur with the Officers' recommendation to interpolate "of useful energy" in the ULEB definition. [104]

[380] **Deletions:** Consequential upon the substitution of the small-scale heating appliance definition we recommend deletion of the domestic liquid or gas fuel burner, and the domestic solid fuel burner, definitions as discussed above.[105]

[381] **Secondary Emission Reduction Technology:** We recommend that the pCARP (as notified) definition of "Emission reduction secondary technology" be replaced with the term "Secondary emission reduction device" and that the wording of the definition be changed, in particular to identify particulate as the contaminant discharge to be reduced. The revised term provides a more accurate description, as does the new wording, but otherwise the substance of the definition[106] is not

[103] A minor change: Clause 16(2)
[104] Association for Independent Research Incorporated Ltd (AIR Inc Ltd)
[105] Clause 10(2)(b)(i)
[106] Clause 16(2)

changed.

[382] **Deletion of Notes:** Unlike the general definitions part of the table, the space heating part included a third column headed "notes". Several notes appear in the column and these provide typical examples of things to which a definition was intended to apply. We consider that the notes are out of keeping with the rest of the table and, more importantly, that they do not materially add to the definitions themselves. Accordingly, we recommend their deletion.[107]

8.3 Policies

[383] **Space Heating Policies:** The pCARP as notified included 13 space heating policies, some of which applied to the entire region and the rest to groupings of the CAZs. In their S42A Recommendations, however, the Officers recommended one composite policy as follows:

> *Improve poor air quality or maintain good air quality by applying the best practicable option to domestic space heating across the region by:*
>
> 1) *Enabling the research and development of new technology, including secondary technology and*
> 2) *Enabling the development of community heating schemes where contamination emissions are minimised; and*
> 3) *Specifying through rules, the appropriate appliance performance standards and operational requirements for achieving the best practicable option both inside and outside of Clean Air Zones and*
> 4) *Requiring upgrades in technology and / or operation of space heating appliances in urban areas within a specified time frame; and*
> 5) *Enabling the use of space heating devices in particular heritage buildings where those appliances are integral to the heritage fabric of the building including by reviewing Schedule 9 regularly so that the use of additional heritage heating devices is enabled where the objectives of the Plan can* still be met.

[384] Numerous submissions were made on the space heating policies. These in significant measure reflected the major themes identified earlier in our discussion in relation to the strategy; namely the need for improved burner operation initiatives, less emphasis on the phase-out of existing appliances and the need for more assistance subsidies to meet the expense of replacing older technology.

[385] The Panel agrees with the Officers' move to a more succinct set of policies applicable across the region. The space heating strategy is based on the CAZ spatial divide concept coupled with a phase-out timetable designed to accommodate the maturity of existing controls in the different CAZs. This strategic approach does not indicate a need for an intricate set of policies for each CAZs. But, we consider that the proposed single policy focussed on applying the best practical option (BPO) not appropriate in the present context and, more importantly, omits recognition of some of the key policy initiatives.

[386] The following policy planks require inclusion:

- enabling the use of ULEBs in both new situations and as replacements in CAZs.
- allowing discharges in CAZs on a basis that reflects the maturity of previous controls.
- phasing out open fires on all properties less than 2ha in CAZs.
- phasing out older-style burners in CAZs.

[107] Clause 16(2)

[387] Accordingly, the Panel recommends some additions to the policy framework, some wording revisions and a revision of the previous single BPO-based policy.

[388] **The Previous BPO Policy:** Recommended Policy 6.27A is recast to cover stimulation of new technology, the focus on specified performance/operational standards, the staged phase-out strategy and the establishment of smoke and fuel standards – each of which can be conveniently grouped as general initiatives designed to improve the management of discharges from heating appliances. Enabling community heating schemes is deleted because this is a non-regulatory initiative (as opposed to a Plan one), while enabling the use of devices in heritage buildings is converted to a stand-alone recommended specific policy (6.27A) because it does not sit well in a general context.

[389] **Recommended Policies 6.27B to 6.27E:** These four policies recognise the key policy of enabling ULEBs in new situations and as replacements, the permitting of discharges in CAZs according to the maturity of existing controls and the phase-out of both open fires and older-style burners, respectively. We note that very similar policies were included in the pCARP as notified, but not in the pCARP S42A Recommendations. Hence, our recommendation is for reinstatement, not the inclusion of something entirely new.

8.4 Space Heating Rules

[390] To recap, although as explained earlier the rules framework has been significantly revised by the Panel these are essentially drafting changes. Only two substantive rule changes are recommended, albeit one change affects two rules situated in the combined Rangiora, Kaiapoi and Ashburton CAZ and the Christchurch CAZ.

[391] **Region wide:** Recommended Rule 7.81 is something of an "orphan" in that it does not fit comfortably into the CAZ framework used for the balance of the small-scale heating appliance rules. This stand-alone rule permits the use of heating appliances located on industrial and trade premises, provided they are indeed small-scale, as defined in the small-scale heating appliance definition.

[392] **The Rules for Outside CAZs:** The pCARP began with space heating rules that applied "region-wide". We recommend the removal of this label and the substitution of "Outside Clean Air Zones" as the first sub-title. This recognises the key spatial divide that underpins the Plan including the space heating rules, in particular. This substitution necessitates some consequential changes to narrow the operation of the previous two rules to the area outside the CAZs. Recommended Rule 7.82 is a permitted activity rule that simply:

- permits the use of small-scale heating appliances on sites 2ha or greater outside CAZs; and
- permits their use on sites less than 2ha as well, but subject to conditions giving effect to the ban on installing non-LEB/ULEBs after 28 February 2015, the "no visible smoke" requirement and the implementation of solid/pellet fuel standards.

The second rule, Rule 7.83 (as recommended) prohibits discharges that do not comply with these conditions.

[393] Our recommendation not only narrows the application of these rules to properties outside the CAZs, but also promotes simplification. All householders outside the CAZs in the Canterbury region will only need to consult the small-scale heating appliance definition and rule 7.82 to understand their obligations under the Plan.

[394] **The Rules Application in all CAZs:** The remaining 21 space-heating rules apply within the CAZs, but plan users will only need to check the five rules applicable in all CAZs, and then focus on the four or five rules applicable within their particular CAZ.

[395] Rule 7.84, as recommended, is a prohibited activity rule that clarifies at the outset that the use of small-scale heating appliances in CAZs is subject to:

- their registration and maintenance if on a property less than 2ha;
- the ban on the installation of enclosed burners that are not an LEB/ULEBs after 28 February 2015;
- the 'no smoke' rule; and
- the fuel standards.

For the avoidance of doubt we note that the ban referred to in the second bullet point related only to enclosed solid fuel burners installed after 28 February 2015 if these were neither LEBs nor ULEBs. The revised definition of a small-scale heating appliance distinguishes between enclosed burners (in part (a) of the definition) and burning devices (in part (b)). Burning devices use liquid or gas fuel, and the space heating strategy does not seek to date limit their installation in any shape or form.

[396] Previously, these prohibitions were in a rule that covered both the CAZs and properties less than 2ha outside CAZs, save for the registration and maintenance requirement that was the subject of a stand-alone prohibition rule. Our recommended redraft respects the spatial divide, combines these specific prohibitions into one rule and repositions the rule to the beginning of the provisions applicable within all CAZs. It effects no substantive change.

[397] Rule 7.85, as recommended, permits the use of ULEBs and liquid or gas fuelled appliances. Such changes as we propose are consequential upon the redrafting and movement of the specific prohibition (Rule 7.82) to a lead position, and the revision of the small-scale heating appliance definition. There is no substantive change.

[398] Rules 7.78 and 7.79 we recommend be deleted. In the pCARP they permitted the use of older-style burners or LEBs, and open fires on sites 2ha or greater in all CAZs. We recommend an approach whereby for each CAZ there is a rule specifying the heating appliances that are permitted, including for sites 2ha or greater. We are satisfied that this specific CAZ approach is simpler and will enable plan users to focus on their CAZ, rather than requiring them to consult particular CAZ and region wide CAZ provisions to determine their obligations, as was the case under the pCARP.

[399] Rule 7.80 in the pCARP as notified is renumbered 7.87 in our revision of the provisions, but is not materially changed. The rule permits the fitting of a secondary emission reduction device to appliances on sites 2ha or greater in a CAZ. The drafting changes are consequential in nature.

[400] Rule 7.81 in the pCARP as notified is 7.86 in our recommended revision. The rule permits the retention of heating appliances in heritage buildings, subject to two conditions.[108] Any drafting changes are of minor effect.

[108] Clause 16(2)

[401] We recommend that pCARP Rule 7.82 (as notified) be revised as follows:

> *7.88 Within any Clean Air Zone on sites 2ha or less in area, the discharge of contaminants into air from a small-scale heating appliance burning solid fuel and fitted with a secondary emission reduction device is a restricted discretionary activity.*
>
> *The exercise of discretion is restricted to the following matters:*
>
> *1) The attainable standard of the discharge into air as compared against the emission and efficiency standards for an ultra-low emitting burner as set out in the definition Table 2.2; and*
> *2) The relevant requirements of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004; and*
> *3) Methods to prevent the secondary emission reduction device being bypassed or tampered with in such a way to affect the performance of the device; and*
> *4) Methods to ensure the consistency of performance and design life of the secondary emission reduction device; and*
> *5) The maintenance requirements of the secondary emission reduction device; and*
> *6) The matters set out in Rule 7.2.*

Importantly, this revision effects a substantive change from discretionary to restricted discretionary activity status, a consequential requirement to specify matters of discretion and the renumbering / repositioning of the rule.

[402] A secondary emission reduction device is a form of technology designed to reduce PM emissions. Objective 5.10 provided that "developments and innovation in technology that (has) the potential to improve air quality" should be enabled. Policy 6.27(a) recognises as a best practicable option the stimulation of "the development of new technology, including secondary emission reduction devices". Recommended Rule 7.87 mirrors the pCARP in that it permits the fitting of reduction devices on heating appliances on sites 2ha or greater in CAZs, but on sites less than 2ha in CAZs the pCARP rule (7.82) makes the devices a restricted discretionary activity.

[403] We disagree with this approach. It is out of step with the objective and policy statements that innovative technology is to be "enabled" and its development "stimulated". A change to restricted discretionary is justified because this provides greater assurance that a consent will be granted, subject to the matters of discretion being met. We note that these require comparative assessment against regulatory standards; and proof that the device cannot be by-passed, will achieve consistency of performance over its design life and that it can be properly maintained. Each matter can be objectively assessed and this, we consider, confirms the appropriateness of a restricted discretionary status.

[404] **Section 32AA Evaluation:** This is a modest substantive change of an activity status from discretionary to restricted discretionary. The reasons for the change are set out above. In terms of options, a move to restricted discretionary status was the obvious and only appropriate change. We are confident that the new rule will better achieve the outcome sought in Objective 5.10; and also secure a benefit (improved air quality through technological development and innovation) that outweighs any cost associated with the change.

[405] Rules 7.83 and 7.84 in the pCARP (as notified) we recommend be deleted. On sites less than 2ha in CAZs Rule 7.83 prohibited discharges from space heating appliances that were not registered and maintained in accordance with Schedule 7, while Rule 7.84 was a general prohibition upon

discharges not otherwise permitted or classified within the space heating rules. The registration / maintenance requirement is now subsumed in proposed Rule 7.84(a), and we recommend that the general prohibition be replaced by a combination of recommended Rule 7.84, and each of the CAZ "drop-out" provisions by which activities that do not meet the conditions set in rules for each CAZ are prohibited.

[406] **Rangiora, Kaiapoi and Ashburton CAZs Rules:** There are five rules recommended for these CAZs, as opposed to the two in the pCARP. We recommend a new prohibition rule (Rule 7.88A) to record at the outset that open fires are not allowed in the three CAZs on sites less than 2ha in area. Recommended Rule 7.89 applies to sites of 2ha or more and permits the use of open fires installed pre 1 January 2013, except if a prohibition in proposed Rule 7.84 applies. These are drafting/framework changes designed to make the provisions applicable to each CAZ self-contained by virtue of a prohibited/permitted appliance hierarchy.

[407] We recommend Rule 7.90 that permits discharges from older-style appliances where:

- the burner is on a site of 2ha or greater, or
- 15 years since installation of the burner has not expired.

The recommended rule replicates pCARP Rule 7.85 save for a consequential drafting change.

[408] Rule 7.91, as recommended, makes discharges from LEBs a permitted activity, subject to the proposed specific prohibition rule (Rule 7.84) and satisfaction of conditions that:

- the LEB is on a site 2ha or greater, or alternatively
- was installed pre 1 January 2019, and
- the discharge is not after the later of 20 years since installation or 1 January 2019, and
- if installed between defined dates the burner is located in a dwelling for which a building consent was issued between defined dates, and if in an existing dwelling as a replacement for an appliance lawfully used over the previous 12 months.

[409] Aside from consequential changes there are minor drafting changes to conditions 1 and 2. In addition, condition 3 incorporates the substantive change discussed earlier in this chapter, the increase from 15 to 20 years since installation during which an LEB may be used (see the discussion at [368] to [372]).

[410] The fifth rule we recommend, Rule 7.92, is the drop-out provision discussed in paragraph [405] above. This is another consequential change resulting from the recommended deletion of pCARP Rule 7.84, a general prohibition of activities unless otherwise permitted or classified in the rule framework.

[411] At this point we note that where any of the rules pertaining to other CAZs mirror provisions in the Rangiora, Kaiapoi and Ashburton CAZ section, we rely upon the discussion above to explain the changes we have recommended.

[412] **Christchurch CAZ:** New recommended Rule 7.93 records that on sites less than 2ha open fires and older style enclosed burners are prohibited in this CAZ. This is for completeness, and to

provide a hierarchical framework for the CAZ.[109]

[413] Rules 7.94, 7.94A, 7.95 and 7.96 mirror provisions in the Rangiora, Kaiapoi and Ashburton CAZs.

[414] **Timaru CAZ Rules:** The recommended Rules 7.97A, 7.97, 7.98, 7.99 and 7.100 mirror provisions in the Rangiora, Kaiapoi and Ashburton CAZs section, save in one respect. Rule 7.99 does not contain the extension from 15 to 20 years from installation during which LEB discharges are permitted. This, however, is explained earlier in the Chapter (see discussion at [372]) and we rely on that explanation.

[415] **Geraldine and Waimate CAZs Rules:** Recommended Rules 7.101, 7.103 and 7.104 mirror earlier provisions. Rule 7.102 is unique in that it permits discharges from older style burners until the beginning of 1 January 2020 or when the property is sold, being a reflection of the immaturity of the controls in these two CAZs compared to those in other CAZs. We propose no changes to this rule as amended in the Officers' S42A Recommendations.

[109] Clause 16(2)

Chapter 9

Schedules

9.1 Schedule 4: Contaminants

[416] Schedule 4 includes lists of air contaminants, comprising:

- Part 1 – Contaminants covered by the Ambient Air Quality Standards (set in the NESAQ)
- Part 2 – $PM_{2.5}$ and reference to the WHO guidelines
- Part 3 – Contaminants covered by the health-based New Zealand ambient air quality guidelines
- Part 4 – A list of hazardous air pollutants

[417] The Panel considered that Schedule 4 lacked context. Given the need for changes to the introductory chapters of the Plan, we found that the text describing the nature and potential health effects of the various contaminants included in the Introduction to the Plan (as notified) could most usefully be moved into this Schedule to provide a preamble to the lists.

[418] St George's Hospital supported retention of Parts 1 and 3 of Schedule 4 because they considered these schedules properly identified that the NESAQ provides a management framework for specific contaminants that must be met (Part 1) and that other guidelines are appropriate tools for consideration when making resource management decisions[110]. We agree with this submission, however we also found the duplication of contaminants in both Parts 1 and 3 to be confusing. We consider that this apparent duplication can be clarified by referring to the particular averaging times covered by the Ambient Air Quality Standards in Part 1.

[419] The WHO guidelines have been specifically incorporated into Policy 6.4 (Panel Recommendations) and therefore Part 2 (reference to $PM_{2.5}$ and the WHO guidelines) is unnecessary. We have therefore recommended that Part 2 be deleted.

[420] The Canterbury Aggregate Producers Group submission sought that Part 4 (Table 8.4.1 Hazardous Air Pollutants) of Schedule 4 be deleted[111]. They considered that there was no clear reason to list these substances, given that there is no reference to hazardous air pollutants in the Plan provisions. We agree with this submission and have recommended that Part 4 (Table 8.4.1) be deleted. As the term hazardous air pollutants is not used anywhere in the Plan (previously it occurred only in the Table heading), a consequential amendment is the deletion of the definition of hazardous air pollutants.

[110] St George's Hospital [826]
[111] Canterbury Aggregate Producers Group [3028]

Chapter 10
Conclusion and Recommendation

[421] We have considered and evaluated the provisions of the proposed Canterbury Air Regional Plan; the submissions lodged on it; the further submissions lodged on it; the reports of the Council Officers; and the evidence and representations made and given at our public hearing or lodged with the hearing manager.

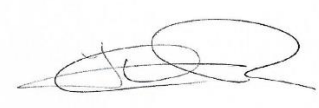
[422] Our reasons for our findings are set out in the main body of this report.

[423] **We accordingly recommend the provisions of the proposed Canterbury Air Regional Plan as set out in Appendix B to this report**.

DATED 19 September 2016

Sir Graham Panckhurst Hearing Commissioner (Chairman)

Ms Jenny Simpson Hearing Commissioner



Ms Yvette Couch-Lewis Hearing Commissioner

Appendices

Appendix A – Schedule of Recommended Decisions

Appendix A to this recommendation is separately bound.

Appendix B – Proposed Canterbury Air Regional Plan – Inclusive of Recommended Amendments

Appendix B to this recommendation is separately bound.

Appendix C – Reference Material

Appended to this document.

Appendix C

Reference Material

General

1. Canterbury Regional Policy Statement 2013, Environment Canterbury
2. Canterbury Water Management Strategy, Environment Canterbury (2009)
3. Canterbury Land and Water Regional Plan, September 2015
4. Iwi Management Plan of Kati Huirapa for the area Rakaia to Waitaki (July 1992)
5. National Policy Statement for Electricity Transmission 2008, New Zealand Government
6. National Policy Statement for Renewable Electricity Generation 2011, New Zealand Government
7. Resource Management (National Environmental Standard for Air Quality) Regulations 2004
8. Canterbury Natural Resources Regional Plan (Chapter 3)

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9. Mallet, T. 2014. Calculating an average woodburner emission factor. Unpublished report for Canterbury Regional Council.
10. Marsh, C., and Wilkins, AH. 2004. An alternative measure of air quality. Report U04/76. Prepared by Canesis Network Limited Canterbury Regional Council.
11. Metcalf, J. and Sridhar, S. 2014. Motor vehicle emissions inventory for Canterbury airsheds. Report prepared for Canterbury Regional Council.
12. Salomon, V. 2014. Industrial emissions 2014 update draft Sep 2014 v2. Unpublished report prepared for Canterbury Regional Council.
13. Scarrott, C. 2013. Statistical calibration of PM_{10} concentrations within Canterbury airsheds. Unpublished report prepared for Canterbury Regional Council.
14. Scarrott, C. 2012. PM_{10} concentrations modelling for Christchurch: What is the likelihood of meeting the (revised) NES air quality targets o PM_{10} concentrations? Unpublished report prepared for Canterbury Regional Council.
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16. Salomon, V. 2014. 2014 Air quality status report: $PM_{2.5}$, Report No. R14/53, Environment Canterbury.
17. Scott, A. 2014. Timaru source apportionment study. Report No. RD12/100, Environment Canterbury

18. Sturman, A., Zawar-Reza, P., Katurji, M. 2007. Canterbury Airsheds Project: Ashburton/Tinwald airshed issue. Report prepared for Environment Canterbury by Centre for Atmospheric Research University of Canterbury

19. Sturman, A., Zawar-Reza, P., Katurji, M. 2007. Canterbury Airsheds Project: Ashburton winter 2006. Report prepared for Environment Canterbury by Centre for Atmospheric Research University of Canterbury

20. Sturman, A., Zawar-Reza, P., Katurji, M. 2007. Canterbury Airsheds Project: Rangiora/Southbrook airshed issue. Report prepared for Environment Canterbury by Centre for Atmospheric Research University of Canterbury

21. Sturman, A., Zawar-Reza, P., Katurji, M. 2007. Canterbury Airsheds Project Rangiora/Kaiapoi buffer zones. Report prepared for Environment Canterbury by Centre for Atmospheric Research University of Canterbury

22. Wilton, E., Somervell, E. 2013. Definition of Activity Classes for Industrial Boilers Part 3: Applicability to other Regions. Prepared for Marlborough District Council.

23. World Health Organisation. 2013. Review of evidence on health aspects of air pollution – REVIHAAP Project.

24. RESOURCE CONSENT: CRC161668. To discharge contaminants to air from burning standing crop residue and farm organic waste.

Memoranda and tabled evidence/responses to Panel questions

25. Opening legal submissions of Counsel for the Canterbury Regional Council. 27 October 2015.

26. Council responses to questions from the Panel. 27 October 2015.

27. Memorandum of Counsel for the Canterbury Regional Council: In response to further questions from the Panel during the opening presentation of the section 42A report by the Canterbury Regional Council on 27 October 2015. 10 November 2015.

28. Memorandum of Counsel for the Canterbury Regional Council: In response to questions from the Hearing Panel in relation to Regulation 17 of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004 ("NESAQ"). 22 November 2015

29. Memorandum of Counsel for the Canterbury Regional Council in relation to the approval of the Lyttelton Port Recovery Plan. 22 November 2015

30. Memorandum of Counsel for the Canterbury Regional Council: In response to the Minute of the Hearings Panel dated 3 December 2015. 8 December 2015.

31. Memorandum of Counsel for the Canterbury Regional Council: Council Officers recommend that the suite of policies managing industrial and large scale discharges into air. 18 December 2015.

32. Council Reply Hearing Statement. 4 April 2016.

33. Memorandum of Counsel for the Canterbury Regional Council: Officer Response to further questions from Hearing Panel. 8 April 2016

34. Memorandum of Counsel for the Canterbury Regional Council in relation to further responses to questions from Hearing Panel and amendments to the pCARP by the Minister for Canterbury Earthquake Recovery. 13 April 2016

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