NELSON CITY COUNCIL

Nelson Air Quality Plan

Proposed Plan Change A3

Decision of Hearing Committee

Date: 15 July 2016

Nelson City Council
te kaunihera ō whakatū

NELSON CITY COUNCIL

DECISION OF HEARING COMMITTEE APPOINTED TO HEAR SUBMISSIONS ON PROPOSED PLAN CHANGE A3

I. Introduction

1. We were appointed by the Nelson City Council ("the Council" or "NCC") to hear and determine submissions on proposed plan change A3 ("PCA3" or "the plan change") to the Nelson air quality plan.

2. Nelson has a great deal to be proud of in terms of what it has achieved regarding improvements in air quality since the turn of the 21st century when, by even the standards of that time, there were significant air quality issues in parts of the city.

3. Through a mixture of regulation (i.e. the Air Plan) and what has been called "behaviour change", the air quality in Nelson has been significantly improved. Much debate now focuses on how much further that can or should be taken and what further improvements are realistic. That potentially becomes a complex mix where public health issues (ambient air quality versus winter warmth) and social issues (housing quality and cost of conversion and fuel) all intersect and even collide.

Operative air quality plan

4. Some consideration of the operative air quality plan is necessary – particularly the parts unaffected by PCA3.

5. That plan was made operative in November 2008 and has been the subject of two plan changes made operative in 2012. The operative air quality plan contains one objective, namely A5-1:

> *"The maintenance, and the enhancement where it is degraded, of Nelson's ambient air quality, and the avoidance, mitigation or remediation of any adverse effects on the environment of localised discharges into air."*

6. Three policies are relevant to achievement of this objective in respect of management of particulate matter:

   6.1 Policy A5-1.3 links with MfE guidelines targeting long term reduction of ambient air pollution to a defined "acceptable" level vis-á-vis the guideline and effectively would require greater degrees of enhancement in Airsheds A and B1;

   6.2 Policy A5-1.4 sets mid-term (2016) and long term targets for managing PM_{10} pollution reduction and particularly relevant to PCA3 is the reduction target for domestic heating being 70% relative to 2001 levels;

6.3 Policy A5-1.5 establishes the plan's prohibitive policy stance on woodburners and a nil increase in the number of solid fuel fires within the urban area as a whole with reductions of up to 30% of solid fuel fires in the most polluted Airsheds. There is an exception for low emission pellet burners enabled by the 2012 plan change and the policy contemplates review where new generation solid fuel burners become commercially available.

7. Reflecting differences in the geography and ambient air quality in different parts of the City, there are four Airsheds fixed by Gazette Notice. The Rules reflect the above policies and prohibit new solid fuel domestic fires, apart from pellet burners and replacements of authorised burners in some Airsheds, and also phase out burners that pre-date the NESAQ. However, there is a nod in the direction of possible future technology that might provide a more enabling approach to domestic woodburners (see the explanation at AQr.21.5).

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8. PCA3 is born out of the backdrop of what has been achieved and advances in burner performance, recognising that this enables a certain amount of capacity or headroom for woodburners to still be used. PCA3, as notified, can therefore be seen as allowing a moderate degree of liberalisation but taking some care to endeavour to limit that to certain types of woodburners that would be less likely to diminish air quality. Hence the sole focus of PCA3 is on enabling ultra-low emission burning appliances (ULEBs).

9. PCA3 was publicly notified on 16 January 2016. A total of 100 submissions were received by the closing date and a further eight received later. We granted the necessary waiver of that lateness under s.37A at the commencement of the hearing. We are satisfied that no person's interests would be adversely affected by granting that waiver and no delay in the processing of PCA3 was caused.

10. A summary of submissions was publicly notified on 5 March 2016 and a total of 15 further submissions were subsequently received.

II. The hearing

11. The hearing proceeded at Nelson on 3, 4 and 5 May 2016 and included a site visit on the afternoon of 4 May 2016.

12. A list of all persons who made submissions or gave evidence is attached as Annexure 1.

13. On 5 May 2016, the hearing was adjourned for the purposes of completion of the Council reply and further submissions from other parties on a particular issue.

14. Further submissions were received in writing and the hearing was accordingly concluded and closed on 26 May 2016.

III. Framework for evaluation of a proposed plan change

15. In *Colonial Vineyard Ltd v. Marlborough District Council* (ENV-2012-CHC-108, [2014] NZEnvC 55), the Environment Court restated the framework of matters to be evaluated in respect of a proposed plan change as previously stated in earlier authority. That framework is as follows:

15.1 A plan change should be designed to accord with, and assist the authority to carry out its functions so as to achieve the purpose of the Act;

15.2 When preparing its plan change, the regional[1] authority must give effect to any national policy statement or New Zealand coastal policy statement;

15.3 When preparing its plan change, the regional authority shall:

15.3.1 Have regard to any proposed regional policy statement; and

15.3.2 Give effect to any regional policy statement;

15.4 In relation to regional plans:

15.4.1 The plan change must not be inconsistent with a regional plan for any matter specified in s.30(1) …; and

15.4.2 Must have regard to any proposed regional plan on any matter of regional significance etc; and

15.4.3 No other regional plans were identified as being relevant for PCA3.

15.5 When preparing its plan change, the regional authority must also:

15.5.1 Have regard to any relevant management plans and strategies under other Acts, and to any relevant entry in the historic places register and to various fisheries regulations, and to consistency with plans and proposed plans of adjacent territorial authorities;

15.5.2 Take into account any relevant planning document recognised by an Iwi authority; and

15.5.3 Not have regard to trade competition;

15.6 The plan change must be prepared in accordance with any regulation;

15.7 The formal requirement that a plan change must also state its objectives, policies and rules (if any) and may state other matters;

15.8 Each proposed objective in a plan change is to be evaluated in terms of the extent to which it is the most appropriate way to achieve the purpose of the Act;

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[1] Nelson City Council is a unitary authority and the Air Plan fulfils the authority's regional functions pursuant to ss.30 and 63 of the RMA

15.9 The policies are to implement the objectives, and the rules are to implement the policies;

15.10 Each proposed policy or method (including each rule) is to be examined, having regard to its efficiency and effectiveness, as to whether it is the most appropriate method for achieving the objectives of the plan taking into account:

15.10.1 The benefits and costs of the proposed policies and methods (including rules); and

15.10.2 The risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules or other methods;

15.11 In making a rule, the regional authority must have regard to the actual or potential effect of activities on the environment;

15.12 Finally, regional authorities may be required to comply with other statutes.

16. It is necessary for our consideration of this proposed plan change to take into account those matters. Some are not relevant and require little or no discussion. Others are more directly engaged and will need to be addressed. It is relevant to note that PCA3 proposes no change to the objective, proposes no new objectives and proposes no change to any plan policy.

17. In this regard, the National Environment Standard for Air Quality ("NESAQ") is relevant because it contains five standards for ambient air quality, the most relevant being the threshold concentration for ambient PM_{10}. However, it does contain a phased approach to implementation for Airsheds which historically exceeded that threshold prior to it coming into effect, and in the case of Nelson, that would be relevant to Airsheds A and B1.

18. The NESAQ's design standards for woodburners in urban areas are also relevant because these prohibit emissions unless they are compliant with a standard design of no more than 1.5_g of PM_{10} particles per kilogram of dry wood burnt in accordance with the testing method specified in AS/NZS4013: 2014.

19. Under RMA s.43B a rule, resource consent or bylaw may be more stringent than a national environmental standard, but not less. If a rule is more stringent, it prevails over the national environmental standard. PCA3 is more stringent than the NESAQ.

20. The Nelson Regional Policy Statement is also relevant. It provides the objective of "improvement in Nelson's ambient air quality" at Objective DA1.2.1. The policies, although expressed in general terms, appear to take a parsimonious stance towards allowing any degree of degradation.

IV. Identification of the key issues in the evaluation

21. Assisted by that evaluation framework, we turn to the evaluation itself and discussion of the issues raised by submitters.

22. Although the written submissions covered an array of viewpoints, it is probably fair to say that most of the submissions at the hearing were directed towards seeking a greater liberalisation than PCA3 would provide. As to that, there was a good deal of misunderstanding on the part of some submitters as to whether we could further 'liberalise' PCA3 which became further complicated by the legal advice we were given on the point. We will return to address that issue later.

23. There were also submissions on behalf of industrial users who, while not of themselves averse to utilisation of an improved air quality environment, opposed PCA3 on the basis that it quarantined that resource for residential activity to the exclusion of industrial activity.

24. In hearing the submissions, we have identified the following key issues, the outcome of which, in our view, determines the decisions we are required to make on them. Those issues are as follows:

    24.1 The causal nexus between air quality and community health;

    24.2 The role of the behaviour change programme and its implications for the viability of PCA3;

    24.3 The significance of certification of different types of devices (including filtration systems) as ULEBs;

    24.4 The question of capacity available for burners in Airsheds B2 and C;

    24.5 Whether PCA3 enables the consideration of availability of capacity in Airsheds A and B1 for new burners;

    24.6 The potential for PCA3 to degrade the air quality improvements gained;

    24.7 The question of whether PCA3 should be delayed until further monitoring information is available;

    24.8 Whether allowance for industrial growth has been wrongly excluded;

    24.9 The viability of the 'future allocation' provisions;

    24.10 PCA3 rules and methods;

    24.11 Section 32 report requirements.

25. We will discuss each of these issues in the next section. We will commence, however, with some general observations by way of overview.

V. Evaluation of the key issues

Overview

Causal nexus between air quality trends and community health effects

26. We heard evidence from Dr Wilton that air quality in Nelson has improved markedly in response to the Air Plan restrictions and the Council's Behaviour

Change Programme. The 75th percentile and average PM_{10} concentrations have been trending **downwards**, towards the NESAQ target, since 2001 when monitoring began. Her advice[2] was that concentrations of PM_{10} have decreased significantly, particularly in Airshed A where the annual average PM_{10} concentration has reduced from 42 $\mu g/m^3$ in 2001 to around 18 $\mu g/m^3$ in 2013. Her analysis estimates that air pollution related premature mortality in Nelson has reduced from around 31 deaths per year in 2001 to around 26 in 2013. Dr Wilton tells us the majority of these occur as a result of improvement in PM_{10} concentrations in Airshed A. We understand the corresponding health benefits associated with this improvement in air quality are estimated at around $27 million per year.

27. The NMDHB-PHS submission presented by Dr Kiddle acknowledged cold homes have health effects and that it is important to address this issue alongside improving air quality. In regards to air quality, Dr Kiddle tells us adverse health effects from poor air quality are well recognised and studies in recent years have reinforced the health effects of air pollution. The WHO reported in March 2014 that air pollution is the single biggest environmental health risk globally, also identifying the health consequences of air pollution to be higher than previously thought.[3]

28. Both Dr Kiddle's submission and discussion paper reinforce the view that work on ensuring people have warm, dry housing must continue. However, it is his view that good air quality should not be compromised at the expense of heating cold houses.[4]

Parliamentary Commissioner for the Environment's commentary

29. The commentary on *The state of air quality in New Zealand* published by the Parliamentary Commissioner for the Environment (PCE) in March 2015 provided us with an overview of the current status of particulate pollution in New Zealand.

30. The commentary discussed the World Health Organisation (WHO) guidelines for PM in air relating to PM_{10} and $PM_{2.5}$. In both cases, there are measurements for long term exposure and short term exposure. It tells us that research indicates that "small airborne particles are more damaging to health across the population than larger particles. Thus, a particular concentration of $PM_{2.5}$ in air is of greater concern than the same concentration of PM_{10} because the average particle size is smaller". The commentary concludes "Masterton and Nelson A[5] "pass" the long-term PM_{10}, but "fail" the long term $PM_{2.5}$ guideline.[6]

31. We noted the statement from the WHO "that standards for particulate matter should be set "to achieve the lowest concentrations possible in the context of local constraints, capabilities and public health priorities". It would be

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2 Health and Air Pollution in Nelson – outputs from HAPINZ 2006 and evaluation of impact of changes from 2001 to 2013. Page 17, Summary.

3 A Discussion Paper on Adverse Health Effects Related to Poor Air Quality and Cold Houses – Dr Ed Kiddle, Medical Officer of Health, May 2014

4 Submission 87, para 23

5 PCE commentary, end note 41 – the Nelson A airshed, where about a quarter of city's the population live, has historically had the poorest air quality in the city.

6 PCE commentary, Chapter 3, page 28, para 3.2 and page 29, Figure 3.4

counterproductive if, for instance, actions to reduce emissions from wood burners resulted in more cold damp homes. This statement is at variance with evidence we heard from the NMDHB/PHS who were emphatic in their view that good air quality should not be compromised at the expense of heating cold houses.

32. Mr Paul Sheldon [7] provided a briefing paper to the NCC Woodburner Working Party that was appended to the s.32 report. In it Mr Sheldon discussed the relativity between PM_{10} and $PM_{2.5}$ concentrations, saying combustion sources such as wood fires and vehicles normally generate very fine particles in the $PM_{2.5}$ range. NCC has been monitoring $PM_{2.5}$ levels in Airshed A since 2008. He concluded that during the winter period approximately 90% of the PM_{10} measured in Airshed A comprises of $PM_{2.5}$ particles or smaller.

33. Dr Wilton included in her section 42A report a discussion of the implications of adopting $PM_{2.5}$ as the guideline measurement[8]. Dr Wilton reported there on the findings of her analysis of the potential impacts of annual average $PM_{2.5}$ concentrations for all airsheds. Dr Wilton concluded that, if an annual average $PM_{2.5}$ standard or guideline of 8μg/m³ were introduced, Airshed B2 would be unlikely to comply and Airshed C may be compliant based on existing concentrations. However, Dr Wilton observed that, if air quality were allowed to degrade in these airsheds, compliance with an annual average $PM_{2.5}$ standard would be unlikely in the absence of additional regulations. That report also indicates that Airshed B1 would fail compliance with a $PM_{2.5}$ standard of 8μg/m³ [9].

34. However, with regard to the $PM_{2.5}$ guideline, we heard no evidence to say this standard was to be adopted in New Zealand. Mr Sheldon's briefing paper and Dr Wilton's evidence tell us, if it were adopted (either as a daily or annual average) then Nelson will have difficulty meeting that standard. The PCE commentary is consistent with this view. But it must be remembered, as Dr Wilton pointed out, that the WHO annual average guideline is 10μg/m³, not 8μg/m³, which is the Canadian guideline, and that all Nelson airsheds would comply with the WHO guideline except for Airshed A.

The validity of equating the presence of PM_{10} particulates with an actual or potential health risk

35. At the hearing, we heard that an analysis of the Nelson and Marlborough Hospital data[10] on respiratory admissions identified a range of factors contributing to admissions including air quality, cold homes, mean air temperatures, yearly variation in the incidence of circulating influenza, other respiratory viruses, smoking prevalence and changing socio economic factors that influence access to seeking medical care.

36. Having regard to the abovementioned factors, Dr Kiddle tells us that "in view of these multiple factors it is not considered possible to identify the specific

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7 Briefing paper to NCC Woodburner Working Party: Background to Health Effects and Airshed Definition – 5/09/2014.

8 Paragraphs 3.53 to 3.55 Wilton s. 42A report

9 Wilton & Zawar '*Air quality management in Nelson – the potential impact of an annual average $PM_{2.5}$ NES'* (Envirolink Report NLCC88 2015)

10 A Discussion Paper on Adverse Health Effects Related to Poor Air Quality and Cold House – Dr Ed Kiddle, Medical Officer of Health, May 2014. Page 5, section V.

contributions of air quality or housing conditions to increased winter hospital admission rates by examining trends over time." The conclusion reached by Dr Kiddle is that adverse health effects will be occurring in Nelson from both poor air quality and from cold houses.[11]

37. Dr Al Norrish's analysis[12] on admissions to Nelson-Marlborough hospitals tells us that although part of the concern about air quality relates to known adverse effects of air pollution on respiratory and cardiac disease, there is also evidence that health is adversely affected by cold and damp housing conditions. The analysis reaches several conclusions with the following being most relevant in this context:

- Over the period 1999 – 2013 there has been a small increase in respiratory admission rates. Interpretation of these time trends is difficult because they are likely to reflect changing population demographics (e.g. population aging) and socio economic factors (including access to healthcare, smoking prevalence, housing quality and use of heating), as well as year to year changes in viral illness outbreaks and the climatic and air quality environment.

38. Mr Sheldon's briefing paper discussed, among other things, health effects of cold homes and a Health and Air Pollution in New Zealand (HAPINZ) study commissioned in 2007. As a consequence of the study, in 2012 a predictive model was developed which utilises monitored PM_{10} concentrations and population statistics to predict health related impacts.

39. We understand the HAPINZ study examined 67 urban areas and included 73 per cent of New Zealand's population. It linked anthropogenic (human-caused) air pollution with approximately 1,100 premature deaths each year. Dr Wilton's and Dr Kiddle's evidence suggests the HAPINZ study represents the best data available for predicting health effects from PM_{10} pollution in Nelson.

40. Having regard to the above, we accept that it is difficult to attribute a direct causative link between health effects and particulate air pollution. However, the expert evidence relating to the adverse health effects of poor air quality is compelling. Accordingly, we accept that the presence of PM_{10} particulates has an actual effect on health.

Evidence and submissions

41. We heard submissions from members of the Nelson Woodburner Group and others who believe it is significant that the Nelson Hospital admissions have increased over recent years, whilst the air quality in Nelson generally has improved. These submitters tell us that the increased admissions disprove the notion that poor air quality is a causal factor in adverse public health outcomes but rather cold damp homes.

42. Dr Wilton, in her evidence, addressed this proposition by telling us that she has "examined the data in the analysis underpinning the report "Potential impacts of

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11 Ibid fn10

12 A Discussion Paper on Adverse Health Effects Related to Poor Air Quality and Cold Houses – Dr Ed Kiddle, Medical Officer of Health, May 2014 – Appendix 3

management measures – heating, household and fuel poverty data for Nelson – 2014" which assessed indicators of increased coldness in dwellings in Nelson between 2006 and 2014"[13].

43. Dr Wilton tells us the data is not indicative of an increase in cold homes in Nelson as a result of the AQP being made operative and that overall, homes are likely to be warmer since 2006. She provides the following information supporting her view:

- The proportion of households that do not heat their homes has not increased since 2006;
- There are fewer households relying on high cost heating methods such as electricity (non - heat pump) and unflued gas;
- There has been an increase in the proportion of dwellings with ceiling and underfloor insulation, meaning houses should require less energy to achieve the same temperature (or the same energy may be used but the household may be warmer).

44. It was Dr Wilton's evidence that the above results do not support any direct correlation between the reduction in wood burners under the AQP and increased hospital admissions for respiratory conditions arising from greater prevalence of cold homes.[14]

45. The s.42A report supported the above view, agreeing with the results of a Council initiated study in 2014, that homes are likely to be warmer on average now than they were in 2006. It affirmed that information from both Dr Kiddle and Dr Wilton casts substantial doubt upon the contention that the AQP is responsible for any increase in hospital admissions for respiratory conditions.[15]

46. Mr Heale[16] outlined for us the key findings of Council's 2015 Air Quality Reports survey data:

- Approximately 5837 households in Nelson (combined airshed area only) used a wood burner for home heating in their main living area in 2014;
- The proportion of households with no insulation in Nelson appears to have decreased from around 12% in 2006 to 4% in 2014;
- The majority of wood burners are used in owner occupied accommodation (77%);
- An estimated two thirds of the wood used in wood burners was purchased from wood suppliers;
- Wood burners are typically used in larger houses (3+ bedrooms) more than 40 years old;

13 S42a, Appendix 4, Wilton, page 26, para 3.88
14 S42a, Appendix 4, Wilton, page 26, para 3.89 – 3.91
15 S42a report, page 32, paras 4.82 – 4.83
16 Key Findings from 2015 Air Quality Reports. Attachment 1 to Council Paper 5193

- Approximately 16% of households in Nelson are estimated to meet the definition of fuel poverty (10% or more of the annual income is spent on energy).

Canterbury District Health Board Public Health briefing paper

47. A briefing paper from the Canterbury District Health Board[17] (CDHB) discussed the links between the housing environment and human health. There are various factors listed that contribute to adverse health outcomes: temperature, humidity, ventilation, overcrowding, affordability and fuel poverty. In regard to air quality, we read that there is considerable international evidence air pollution causes excess morbidity and mortality particularly through increases in the incidence of respiratory and cardiovascular disease.

48. It went on to say, the majority of air pollution (80%) in Christchurch is caused by PM_{10} emissions from domestic solid fuel heating. The CDHB briefing paper reiterated evidence we had heard during the hearing that there are no safe levels of PM_{10} below which adverse effects are not observed.

49. Having regard to this evidence, we accept the importance of home heating and energy efficiency, as a health protection measure. However, we also concur that clean air is a requirement for health and wellbeing and that urban outdoor air pollution is the eighth most common risk factor for death in high income countries.[18]

Ambient Air Quality Guidelines

50. We read the Ambient Air Quality Guidelines, 2002 Update, published by MfE which describe the minimum requirements that outdoor air quality should meet in order to protect human health and the environment. This is particularly important for those pollutants, such as particles less than 10 microns in diameter (PM_{10}), for which the guideline value cannot be based on a 'no observable adverse effects level'.[19]

51. We heard evidence[20] that research has been unable to determine a threshold for PM_{10} below which there are no adverse effects and the values for PM_{10} are designed to be the first step in reducing health effects causes by particles in areas where concentrations breach the guideline values. It was made clear to us that where PM_{10} levels are within the values, efforts should be made to maintain, and where possible, further reduce levels. The PM_{10} levels are a guide but having said that, we understand it is not a level to pollute up to.

Other sources of pollution

52. Submissions[21] suggested that sources of air pollution, other than wood burners, had not been properly accounted for. In regard to this, evidence from Dr Wilton[22]

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17 Housing, home heating and air quality: a public health perspective

18 WHO. 2009. Global Health Risks: Mortality and burden of disease attributed to selected major risks. Geneva: WHO

19 Ambient Air Quality Guidelines, 2002 Update, MfE publication, page 1, para 1.1

20 Ambient Air Quality Guidelines, 2002 Update, MfE publication, page 11, para 2.3.1

21 53, 89

tells us the Nelson Air Emission Inventory compiled under her direction included domestic heating, motor vehicles and industrial and commercial activities. Other contaminants also evaluated include: carbon monoxide, nitrogen oxides, sulphur oxides, volatile organic compounds, carbon dioxide and benzene.

53. The conclusions of the Inventory were as follows:

- Domestic heating is the main source of anthropogenic PM_{10} emissions in all Airsheds in Nelson accounting for 54% (Airshed B1) to 93% (Airsheds B2 and C) of daily winter emissions.

- Motor vehicle emissions are minimal at around 2 – 6 % of daily winter PM_{10} emissions.

- The industrial contribution to PM_{10} emissions was 41% in Airshed B1 (Tahunanui/Airport) and 2 – 5% in the other airsheds.

54. However, we note the Inventory did not include natural source contributions (for example; sea salt and soil) as the methodology to estimate emissions from these sources is less robust. Nevertheless, having regard to the above evidence, we accept that the Inventory data supports the conclusion that airborne particulate matter from domestic heating is by far the greatest contribution to winter particulate pollution in urban Nelson.

Effects

55. During the hearing we heard evidence[23] that PM_{10} levels affect people every day, all day no matter whether they are inside buildings or out in the open air. We expected that when people are outside they are affected by the air quality at the time. However, we also heard evidence that as a result of uninsulated homes and down draughts through chimneys, the particulates in the air are also circulated inside the home.

56. Having heard evidence, detailed in other parts of this decision, we accept that the Nelson public is subject to levels of PM_{10} at all times of the day and night and within homes as well as outside. We accept no threshold has been identified for PM_{10} below which there are no adverse effects.

Main findings: Causal nexus - particulate contamination and community health

57. The evidence and submissions were consistent in their view that cold, damp houses have direct adverse effects on health. We accept that evidence. However, some submitters contend that, as a result of the AQP, there are more cold damp houses in Nelson which in turn are causing adverse health effects as opposed to poor air quality causing adverse health effects. We will address this matter first.

58. Evidence from Dr Wilton's reports mentioned earlier in this decision, the NCC assessment of those reports, and the results of the NCC 2004 study, are compelling. Several submissions challenged the relationship between poor air

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22 Nelson Air Emission Inventory – 2014 – Figures 7-1, 7-4, 7-7 and 7-10

23 Popenhagen

quality and adverse health effects. However, we note that although the submissions were fulsome in their content, no expert evidence was presented to support the submitters' position. Having regard to the relevant evidence, we find there has been no increase in cold damp houses in Nelson as a result of the AQP.

59. We next address the matter of whether there is a correlation between PM_{10} levels and adverse health effects. As already noted, we accept the evidence[24] that it is not possible to determine a threshold for PM_{10} levels below which there are no adverse health effects.

60. While we understand the difficulty in directly linking health effects with particulate air pollution, we were provided with evidence from international and national studies that indicates particulate matter is injurious to human health, with $PM_{2.5}$ levels causing more concern than the NESAQ standard for PM_{10}. Accepting that there is no safe level of respirable particulates, it is appropriate for the Plan to maintain its cautious approach to enabling new sources of domestic heating pollution.

61. Another theme that emerged through the hearing of submissions was the question of inequities created both within and between airsheds.

62. Some related to the positioning of the boundaries between airsheds. The Woodburner Group sought the creation of a new airshed by splitting Airshed C north of Wakapuaka Cemetery. Two submissions from residents living high on the hills sought to be excluded on the grounds (as they saw it) that their properties are located above the problem PM_{10} emissions.

63. However, the boundaries of the airsheds are fixed by *Gazette* notice and are not open for alteration through PCA3.

64. But there are also other inequities that are not so much created by the position of the airshed boundaries as the difference in rules on either side of a boundary. Examples abound. Where, for example an old generation woodburner or open fire was not upgraded by the phase-out date, that burner is not able to be used. Yet a property within the same airshed that did upgrade before the phase-out deadline is able to be used. PCA3 compounds the inequality by permitting new ULEBs but only in Airsheds B2 and C. Another area of possible difficulty is the situation where a house owner has converted from old generation woodburner to electricity (e.g. heat pumps) but would now prefer or can only afford an NES woodburner.

65. To be fair, PCA3 has not of itself created these underlying inequities. They result from the existing Air Plan rules. PCA3 seeks to relent somewhat and liberalise the position, but only for Airsheds B2 and C from the point of adoption of the plan change. Again, for reasons we later explain, going beyond the liberalisation proposed is in our view beyond the scope of PCA3 and therefore beyond our jurisdiction.

66. In terms of the Council's position, it is worth noting that the Council's assistance programme extends to provision of a financial subsidy for insulation of non-

[24] From the PCE, CDHB, WHO, MfE and others

insulated dwellings[25] and the Council's approach here is that it sees greater benefit in funding insulation as opposed to funding heat sources. It is important to note that the concept of 'fuel poverty' is a different subject, and that Dr Wilton's definition was not something she created for Nelson but is a more widely accepted definition from other studies. The Woodburner Group misunderstood that she was equating a nil increase in homes using no heating with 'fuel poverty'.

67. From a compliance point of view however, the Woodburner Group made the perfectly valid point that if people have old generation fireplaces but are not permitted to use them and are not permitted to replace them or cannot afford to do so, they will probably just use those fireplaces anyway, thereby thwarting the intention of the plan. This outcome, where it occurs, is a consequence of the existing Plan provisions and not a new consequence of PCA3 which itself seeks to provide some liberalising relief.

68. The imminent review of the NESAQ also arose. Of course it would be quite inappropriate and speculative to attempt to anticipate the outcome of that without some more reliable pointers as to what it will change. There was mention during the hearing that the current focus on PM_{10} may be altered to place a greater focus on $PM_{2.5}$. It is not immediately apparent how the NESAQ could "wrong foot" PCA3 but the short answer is that even if it did, a comprehensive review of the Council's plan is also relatively imminent and that would be the ideal opportunity to address any disconnection.

69. Finally, there was some discussion of monitoring station locations as to both the degree to which they are representative, e.g. the apparent shortcomings of the monitoring station between Victory and Vanguard Streets, and the practice of locating the stations in worst-case situations. However, once again this is a matter that is not amenable to being addressed here or for which there is even much discretion for the Council because the NESAQ requirements drive the selection of the monitoring station locations.

The role of the behaviour change programme and its implications for the viability of PCA3

70. The Behaviour Change Programme (BCP) is aspirational in its nature, its objective being to change behaviour in order to reduce particulate emissions. Having said that the BCP is a bona fide non-regulatory method proposed, in conjunction with the plan change, to enhance ambient air quality in Nelson's Urban Airsheds. The BCP is to be implemented by the NCC to improve burning practice of all persons using solid fuel appliances for domestic heating. The programme will include targeted education and engagement with solid fuel users, and enhanced monitoring and enforcement regimes (among others).[26] Dr Wilton confirmed in evidence that the additional capacity anticipated to allow new ULEBs relies, but only in part, on the success of the BCP.

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25 The evidence of Ms Barton and the oral evidence of Mr Poppenhagen is that the Council has allocated $100,000 per year of partnership funding (with NMDHB) for home insulation as part of the 'Warm Up New Zealand' for three financial years out to 2017/2018. Ms Barton stated that future funding will be based on a review of the outcomes and effectiveness of the scheme.

26 S32 report, page 2, section 1.1

Evidence and Submissions

71. The Council has invested in a BCP over the last decade. The programme has included media campaigns, direct engagement at community events, the 'Good Wood Scheme' (promoting public access to dry wood), free advice on home heating and energy use/conservation and enforcement.[27] As part of the BCP, the Council has provided financial assistance to help homeowners install insulation and upgrade to more efficient and less polluting forms of heating.[28]

72. Mr Popenhagen elaborated on the features of the BCP currently in place, telling us "To alleviate the effects of previous phase outs and prohibitions on domestic burners, the Council provided a financial assistance programme (Clean Heat Warm Homes) to upgrade insulation and change to more modern, lower emitting fires or other non-polluting appliances such as heat pumps or gas. Under this scheme, which ran from 2004 until 2012, 433 open fires and 1546 enclosed burners were replaced and 1370 homes insulated".

73. Further to this, Mr Popenhagen tells us the Council has established an education programme with wood merchants (Good Wood Scheme) to encourage dry wood use and make it (dry wood) more accessible. The Scheme is designed to improve the quality of wood sold through a voluntary code of practice. There are currently 7 Good Wood suppliers on the scheme.[29] Mr Popenhagen advised that about 60% of wood burnt was purchased from merchants with the remaining wood being either self-collected by residents or given to them. As a consequence, the Council has limited control over whether the wood burnt is dry or not.

Results to date

74. Having regard to the above, it is difficult to isolate the particular contribution to reducing emissions made by the BCP. However, we heard evidence that the combined result of the Council's air quality management efforts to date has been one of the most spectacular success stories in the country as the Council has achieved the most rapid and largest reduction in PM_{10} levels of any municipality in New Zealand. In its most polluted airshed (Airshed A) exceedances of the NES for air quality have fallen from 81 in 2001, to 1 in 2015.[30]

75. The s.32 report examines the current BCP saying "The Council has invested in wood burner behaviour change over the last decade with great effect … It is intended that these programmes will continue, and be enhanced by further measures to improve operating practice and (therefore) ambient air quality across the City".[31]

Future BCP

76. The current BCP operating in the NCC region at the moment, is to be augmented with planned actions to increase behaviour change to achieve a 10% reduction in domestic emissions. It is proposed that these actions would include:

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27 S32, page 27, section 2.2.5
28 S42a report, Appendix 6, Popenhagen EiC, page 7, para 2.9
29 S42a report, Appendix 6, Popenhagen EiC, para 2.10 – 2.11
30 S42a report Appendix 6, Popenhagen EiC, page 8, para 2.17
31 S32 report, page 27, section 2.2.5

- Extending the Good Wood scheme to include chimney sweeps and burner retailers to promote regular flue cleaning and burner maintenance;

- Surveying wood burner users to determine current attitudes and practice around wood burner use and identify any barriers to efficient burner operation;

- Identifying and targeting excessive and smoky burners and reviewing the causes (e.g. considering the key factors above) and support people to change. Directly working with households, and monitoring their burner operation and analysing the Council's ambient air quality information, will result in a better understanding of the effectiveness of this; and

- Enforcement will be used as a last resort.[32]

77. Mr McIlrath tells us he has considered the BCP going into the future, in his analysis of each of the airsheds, with his analysis suggesting "that the behaviour change scenario returns the lowest costs relative to the baseline. At a Nelson-wide level (all airsheds combined), the behaviour change scenario returns the lowest total cost. Crucially this scenario is also the only one that results in a net improvement in PM_{10} levels relative to the current situation (AQP). Therefore, this is the only scenario that yields a health cost saving ($14.6m out to 2030)"[33]. Mr McIlrath's supplementary evidence advised that "If a BCP is delivered (without any other changes) then the health savings for the different airsheds would be:

(a) Nelson A $10.5m;

(b) Nelson B1 $3.7m;

(c) Nelson B2 $4.0M;

(d) Nelson C $7.0m.

78. In his response to the Panel's 13 May 2016 minute, Mr McIlrath updated his Table 1[34] to include a new scenario (BCP only) which captures the abovementioned figures. To provide some context, he said another way of thinking of the 'BCP only' scenario is the status quo plus the improvement realised by BCP. The previous 'Behaviour Change' scenario has been renamed as 'BCP with ULEB's. Further economic assessments and/or results of PCA3 are discussed in other parts of this decision.

Issues

79. The Nelson Environment Centre submission proposed a more cautious approach to the BCP suggesting a 5% target for the reduction in PM_{10} emissions in the initial stages with a more staged approach until it is clearly demonstrated that the BCP is achieving its target.

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32 S42a, Appendix 3, Popenhagen EiC, page 9, para 2.21

33 S42a report, Appendix 5, McIlrath EiC, page 8, para 2.11

34 S42a, Appendix 5, McIlrath EiC, page 8, Table 1: Results

80. In response, Dr Wilton tells us that improved burner operation can reduce emissions by a significant amount, suggesting that a small proportion of households (9%) emit more than four times the average PM_{10} emissions (>20 g/kg) and contribute around one third of the total PM_{10} emissions from solid fuel burners. According to Dr Wilton, targeting the worst 9% (around 500 households) of emitters in Nelson could result in a 22% reduction in total emissions if emissions are reduced to 10 g/kg or 27% if their emissions reduced to 5 g/kg[35]. The difficulty, Dr Wilton explained, is that the worst emitters are not always the same properties in any given time period.

81. It is her view that implementation of a BCP would need to involve identifying and addressing any barriers to the householder being able to sustain an improved burner operation. Dr Wilton tells us that a 10% reduction in PM_{10} emissions through a behaviour change programme is technically very feasible from a science viewpoint.[36] Some submitters put the view that the easiest gains in behaviour change have already been achieved and were concerned that it will be difficult to achieve the 10% target. In answer to our questions, Dr Wilton stated that she had historically been sceptical of the outcome of behaviour change programmes. However, she was involved in a work programme in 2014 elsewhere that involved identifying and addressing barriers to air quality improvement. As a result of that work, Dr Wilton is able to support the effectiveness of a continued behaviour change programme for Nelson but she emphasised the importance of ensuring the people implementing the programme have the right skills and of appropriately funding the programme.

82. Several submissions[37] raised matters regarding the role of monitoring, enforcement, education and/or burning practice as important methods for managing ambient air quality. Mr Jones tells us these matters are central to the non-regulatory BCP approach adopted by the Council and that a 10% reduction in particulate emissions is achievable through better education, burning practice and enforcement. Halving particulate emissions from the 500 worst polluting households is expected to realise the 10% target alone.[38]

83. Apart from those concerns raised above, Dr Kiddle's submission sought to have "the behaviour change and monitoring programme incorporate $PM_{2.5}$ monitoring to better inform the evaluation of the programme parallel to new rule AQr26A.[39]

Efficacy

84. The effectiveness of the non-regulatory approach with the BCP is predicated on the commitment of the Council to the achievement of improved air quality and funding of the BCP. We heard evidence from Mr Jones that it is his view that we can have sufficient confidence that the Council's commitment to air quality issues overall can be relied upon for the implementation of the BCP with a minimum 10% improvement target.[40]

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35 S42a, Appendix 4, Wilton EiC, page 13, para 3.8
36 S42a, Appendix 4, Wilton EiC, page 13, para 3.9-3.10
37 Subs 1, 16, 22, 29, 53, 61, 75, 85, 87, 89, 103, 107
38 S 42a, page 20 – 21, paras 4.9 – 4.13
39 Submission 87, para 14
40 Et al

85. Dr Wilton's evidence listed the key aspects of the achievability of the BCP aim as the ability to identify the gross emitters; having the resources to access sufficient homes (about 500 across Nelson based on 9%) and having a well-designed targeted programme that results in sustained improved emissions. In her opinion, success would be achievable provided the BCP is adequately resourced by the Council.

Timing

86. With this in mind, we asked Dr Wilton to comment on "The potential for the timing of benefits applicable from the Behaviour Change Programme to match or mismatch the timing of uptake of ULEBSs and the emissions from them".

87. In her supplementary evidence Dr Wilton tells us there is potential for timing mismatch to occur and provided us with the following scenarios:

- If the BCP is not implemented straight away, there could be a lag in improvements and consequently an increase in emissions associated with the ULEB uptake;
- If the BCP were not implemented at all and there was full allocation of ULEBs, emissions should still trend downwards as per the figures provided at the hearing. These figures assume full allocation over a 5-year period, so if uptake is more or less rapid, there may be some localised variation in trends over that shorter timeframe;
- Alternatively the BCP gains may occur more rapidly than the ULEB uptake resulting in additional, short term improvements in air quality (and associated benefits); and
- The BCP may be *more* effective than the 10% estimate and result in further improvements in concentrations, (and associated short term benefits) before being taken up through allowance of additional emissions in the future. [41]

Main Findings: Behaviour Change Programme

88. The detail provided by the Council's witnesses was helpful in providing context against which to consider the proposed BCP's goal of achieving a 10% reduction in PM_{10} emissions. There is evidence of the success of the current BCP with the Council having achieved the most rapid and largest reduction in PM_{10} levels of any municipality in New Zealand.

89. Notwithstanding the evidence that "it is difficult to isolate the particular contribution to reducing emissions made by the BCP", we accept that the combination of regulatory and non-regulatory methods has been successful in reducing particulate emissions in the Nelson airsheds.

90. Having said that, we have some reservations about the efficacy, certainty and timing of the proposed BCP. We heard evidence and submissions raising

41 Memo Mr Jones, dated 19 May 2016, Annexure 2, Wilton, para 4

concerns about the lack of detail in the BCP and monitoring programmes, the non-regulatory nature of the BCP and no clear financial commitment from the Council to the BCP.

91. However, the s32 and s42A reports are supportive of the BCP to deliver the PM_{10} reduction in emissions. With the s.32 report saying "While the specific elements of the programme are not finalised to date, the 10% target is considered to be highly achievable based on the success of existing programmes in Nelson and elsewhere in New Zealand". The s.42A report demonstrated its support by accepting those submissions that support the BCP programme as a means of achieving ambient air quality.

92. Dr Wilton and Mr McIlrath were clear in their views that the proposed BCP target was achievable, but agreed that its success is contingent on adequate funding and commitment from the Council. Mr Popenhagen also supported this position.

93. The non-regulatory nature of the BCP raised some uncertainty for us, as to the ability of the Council to ensure the uptake of the planned actions to be included in the BCP. The lack of details in the BCP and associated programmes has been discussed above and in other parts of this decision. However, taking into account the past performance of the Council, and the evidence and submissions at the hearing, we are more comfortable in our assessment as to the likely success of the BCP.

94. The timing of the introduction of the BCP coupled with other measures was addressed by Dr Wilton in her supplementary evidence, discussed above. Dr Wilton tells us "that any negative impacts associated with the potential mismatch could be reduced if the BCP is well resourced and implemented straight away. She also tells us that the Council has started implementation of the BCP for this winter including a targeted education programme …"[42].

95. Having considered the evidence and submissions on the efficacy of the BCP, we are satisfied the BCP is able to achieve a 10% reduction in PM_{10} emissions, subject to the commitment of and adequate funding of the programme by the Council. Of course the issue remains as to where that factor (the BCP) properly fits into the assessment and justification for the plan change.

96. We make one final observation on this topic. There is no doubt that a continuing funding commitment from the Council is significantly important to any continuing success of the BCP. We acknowledge of course that decisions on that are beyond our mandate and subject to all the factors that bear on local authority funding. But we do wish to emphasise the importance of continued action under the BCP – including as a key to addressing the inequities between airsheds.

The significance of certification of different types of devices (including filtration systems) as ULEBs

97. Submitters have raised concerns that some relatively clean burning devices may be excluded from classification as ULEBs under the proposed plan change because of the restrictive nature of the "real life test method" to be used for the authorisation

42 Memo Mr Jones, dated 19 May 2016, Annexure 2, Wilton, para 5 & 6

process. One example is the Pyroclassic IV wood burner that we were told achieves a PM emission rate of 0.3g/kg under the conventional AS/NZS4013: 2014 Standard wood burner test method used for NES burners. However that method does not include emissions during the start-up phase of burner operation. Consequently, when start-up emissions are included under the real life test method, the burner is unlikely to comply with the 0.5g/kg limit for ULEBs.

98. Dr Wilton provided us with a comprehensive summary of the real life emission test process known as the Canterbury Method. Her advice was that such real life test methods more closely approximate actual emissions during typical household burner operation than the AS/NZS4013: 2014 method used to test NES burners. Consequently, Dr Wilton considered that her calculations of emissions to the airsheds, based on a 1g/kg average PM emission rate from installed ULEBs, are a reasonable approximation of the likely mid-point of the range of actual emissions. By comparison she advised that NES burners complying with the 1g/kg limit under the AS/NZS4013: 2014 test method have been found under actual operating conditions to have average PM emissions in the order of 4.5g/kg.

99. We accept Dr Wilton's advice that the use of real life test methods, such as the Canterbury Method currently used by Environment Canterbury, is an appropriate process for the authorisation of ULEBs. This methodology is designed to simulate actual operation under different fuel types and burn rates, including start-up, over a two day period. However we note that the proposed wording of Appendix AQ2B would allow some flexibility in the test methodology used to simulate real life conditions. It may be that relatively efficient burners such as the Pyroclassic could be improved or modified to comply with the Canterbury Method or be shown to comply with an alternative real life testing methodology acceptable to the Council, thus becoming authorised as ULEBs. We have reached the view that any authorised ULEBs should be able to comply with real life test methods so that the risk of significant exceedance of the 1g/kg *average* emission rate under real life operation is minimised (noting that the PCA3 definition's standard is 0.5g/kg).

100. Dr René Haeberli of Envirosolve presented a submission that outlined the features of the "Bionic" wood burner, one of the ULEBs currently authorised by Environment Canterbury. He explained that the operation of the Bionic is fully automatic, whereby the burner switches to "downdraft mode" once initial combustion in the upper chamber reaches a set point temperature. This feature is intended to avoid extended periods of relatively high PM emission rates when the burner is operated without routing of flue gases to the secondary combustion chamber. Dr Haeberli compared this automated operation to the design of other ULEBs that require manual switching to downdraft mode by the operator. As an example of the potential for high PM emissions from manually operated ULEBs, he submitted laboratory emission test results for a Tropicair ULEB when operated incorrectly. The test results indicate that poor operation of ULEBs with disregard to the manufacturer's instructions could cause a significant increase in expected PM emissions.

101. During the course of the hearing, at the invitation of Dr Haeberli, we visited a home in Richmond where one of his clients operates a Bionic ULEB. During a period of more than an hour we viewed the start-up and operation of the Bionic burner. The burner was operated in "start-up" phase in general accord with the

manufacturer's instructions. We observed that the upper combustion chamber became relatively hot during several fuel burn cycles, but that the bimetallic strip did not trigger the automated change to downdraft mode that would direct flue gases to the secondary combustion chamber. We were told by the operator that this situation was atypical and we are not certain of the reason for failure of the automatic trigger in this case. However we did observe some ongoing visible smoke emissions (as might be expected during continual operation without the secondary combustion chamber) and note that on this occasion it is possible that the PM emissions from the ULEB exceeded the emission rate estimated for this type of device.

102. Subsequently at the hearing we explained our observations of the Bionic burner operation in Richmond and questioned Dr Wilton regarding her level of confidence in the 1g/kg PM emission rate estimate used to calculate the potential quantum of ULEBs that may be allocated to the airsheds. She correctly pointed out that care must be taken when reaching any conclusions based on a single observation. Based on her experience and the available information, Dr Wilton remained of the view that the 1g/kg rate is a reasonable estimate of average PM emissions from ULEBs during actual operation in homes. While there would be some variability associated with individual burners, she confirmed her opinion that the average PM emission rate from NES burners would be approximately 4.5 times the emission rate from typical ULEBs during in-home operation.

103. Dr Haeberli also described the Oeko Tube electrostatic filter (or ESP) that is sold by his company. He explained that the ESP uses electricity to create a charged field within the emission stack that causes particles to collect and agglomerate on the inside of the flue. He noted that the ESPs can be installed in existing flues at moderate cost and typically achieve 60-80% PM removal efficiency. Dr Haeberli provided information about Oeko Tube trials in Reefton that demonstrate effective PM emission reduction for coal burners. We note that amendment of the Plan rules to require specific measures in relation to the Oeko Tube would not be within the scope of the proposed plan change. However the proposed ULEB authorisation process could potentially enable authorisation of the Oeko Tube when fitted to a specific wood burner model, subject to maintenance requirements relevant to the ESP. This would require emission testing of the burner and ESP combination under the Canterbury Method (or a similar real life method approved by the Council) to achieve authorisation as an approved ULEB.

104. Submitters have also questioned whether ULEBs fitted with wetbacks would be available under the proposed rules. We note that one such ULEB has already been authorised and would be included in the Council's list of approved devices.

105. Mr Higgins made a submission describing the advantages of the Eco Flue. He explained that the Eco Flue draws cooling air from either above the house roof or within the roof cavity, rather than from the building interior like conventional flue systems. Mr Higgins stated that the Eco Flue design significantly reduces interior heating losses during burner operation and requested that this be made a requirement of all new woodburner installations. We also received helpful advice from Mr Popenhagen regarding the potential effectiveness of the Eco Flue design. He presented calculations that indicate for a typical living room of 52m^3 volume

approximately half of the room's air volume would be lost each hour via a conventional burner flue design.

Main Findings: Certification of different burner types

106. We consider that ULEBs, whether automated or manual, will have potential for "operator error" to influence the PM emission rate to some degree. That view is supported by our site visit observations and the Tropicair test results submitted by Dr Haeberli. However we also accept that there can be a very large influence of "operator error" on emissions from NES burners. Indeed that is the basis for the anticipated effectiveness of the BCP programme. Overall we are satisfied that the average burner emission rates calculated for both ULEBs (including automated and manual downdraft models) and NES burners are based on appropriate assumptions and adequately account for variability between individual burners. We find that permitted ULEBs should not be restricted to only automated downdraft models.

107. We are satisfied that the Eco Flue design is effective and would result in a significant reduction in heat losses compared to traditional flues. This would result in less fuel being burned and consequently a reduction in PM emissions. We have also been advised that the additional cost of the Eco Flue would be small. Therefore we find that the use of Eco Flues or similar on ULEBs and other burners is beneficial and has potential to offer significant benefits to both the environment and the home owner (in terms of fuel savings). The question arises as to whether requiring the installation of Eco Flues (or flues of similar design) is beyond the scope of the proposed plan change. Mandating the installation of Eco Flues or similar with all ULEBs would make the rules more stringent than in the publicly notified PCA3. We are aware that competing flue manufacturers have not had an opportunity to make submissions on this matter. Therefore, we find that mandating specific proprietary flue design requirements is beyond scope, but note that it would be appropriate for the Council to encourage the installation of Eco Flues or similar through the education programme. We also note that it would be more appropriate for the Council to consider rules requiring such flue systems to be installed with all new burners at the time of the imminent full review of the Nelson Air Quality Plan.

108. Some submitters requested that Nelson-based emission testing programmes be undertaken for different low emission woodburner types, pointing to limited data that suggest lesser PM emissions from local NES type burners during in-home emission testing. We find that sufficient information is available to make a decision on PCA3 and it is not necessary to delay our decision pending further test results. However any further local testing undertaken would add to the pool of real life test results available to inform the authorisation process for ULEBs and the full review of the Plan.

The question of capacity available for burners in Airsheds B2 and C

109. According to Council's monitoring data and Dr Wilton's analysis, there is currently capacity within Airsheds B2 and C for additional burners. The potential capacity will, over time, be reliant on the success of the behavior change programme. Mr Jones provided, in his 19 May 2016 memorandum following the hearing, estimates of the upper limit of additional burners that could be enabled in

different scenarios with and without successful implementation of the BCP. Mr Jones confirmed that he had conferred with Dr Wilton in generating those estimates. Mr Jones' Table 3 (based on advice from Dr Wilton) presents the potential total and *additional* burner numbers that would be enabled by achievement of the BCP based on maintenance only of current PM_{10} levels. His Table 4 presents *total* and additional numbers of burners enabled, based on pollution up to the NES limits.

110. Dr Wilton's estimates are that under the various scenarios analysed for s.32 purposes, there is potential capacity for between 1,000 and 7,500 ULEBs or, alternatively, 220 to 1,620 NES compliant burners in Airshed B2. In Airshed C, there is potentially capacity for between 600 and 6,100 ULEBs or, alternatively, 130 to 1,330 NES compliant burners. The range in estimates is related to the extent of phase-out of pre-2004 burners and replacement of those with other forms of heating or with ULEBs or NES compliant burners, success of the BCP and to the benchmark that is adopted as the level up to which pollution is allowed. There is a wide range in the various scenarios. Dr Wilton provided evidence, based on emission testing of burners under actual operating conditions, that NES compliant burners would potentially take up the capacity of the Airsheds at a significantly faster rate than would ULEBs (approximately 4.5 times as fast on average).

111. PCA3 as notified is based on burner number calculations for the option that would result in continual improvement in air quality to achieve acceptable levels consistent with policy guidelines in the Plan. Table 2 of the s.32 report shows that this option allows 1,000 ULEBs (or 220 NES burners) in Airshed B2 and 600 ULEBs (or 130 NES burners) in Airshed C. The sub-option allowing small numbers of NES burners, instead of ULEBs, in Airsheds B2 and C was dismissed in the s.32 report for various reasons, including the very small relative number of allowable NES burners and the high variability in real life PM emissions from NES burners. We have examined the options presented in the s.32 report and find that the proposed option for 1,000 ULEBs in Airshed B2 and 600 ULEBs in Airshed C is appropriate based on the evidence. Indeed we consider that this is the option that offers the greatest benefit while still achieving the necessary air quality required by policy guidelines in the Plan.

112. Numerous submitters requested that the proposed rules be relaxed to make permitted activity provision for both ULEBs and NES compliant burners in Airsheds B2 and C.

113. In answer to a question we put to the Council's advisers, Ms White and Mr Allan outlined in their 19 May 2016 supplementary legal submissions their view that provision for NES compliant burners is within scope. They reasoned that the focus of PCA3 is on enabling in Airsheds B2 and C low emission burners of which ULEBs are one type. They stated that NES compliant burners are considered extensively through the s.32 report, feature as options within a number of submitters' submissions and are addressed in the s.42A report. For these reasons, they consider it is open to us to provide for a mix of ULEB and NES compliant burners in Airsheds B2 and C. Their advice is that the 'mix' ultimately settled on should be based on the evidence.

114. Numerous submitters opposed PCA3 on the grounds that they consider there should be no provision at all for new burners. Their views are, broadly, that any gains in air quality have been hard earned and should not be eroded in any airsheds.

115. A number of submitters requested the adoption of Alternative 2 that was considered in the s.32 report. 'Alternative 2' sets as the air quality target compliance with NES. For Airsheds B2 and C, the NES levels have been achieved and surpassed. Accepting the NES levels as a benchmark therefore represents allowing pollution to degrade the actual air quality achieved to date. However, as the s.32 report notes, this approach would fail to achieve the Air Plan's policy A5-1.3 (including (d) *'Where for any contaminant, ambient air quality is 'Acceptable' or better, no further degradation of the existing ambient air quality that is more than minor will be allowed'*). No change was proposed by PCA3, or by any submission, to this or any other Plan policy and the 'Alternative 2' approach would be contrary to that settled policy. Relaxation to allow pollution up to the NES level ('Alternative 2') would require an amendment to that policy. No submission requested that. We are therefore not free to make that change. In our view, 'Alternative 2' is not an option that can be pursued via PCA3. It simply does not achieve the Air Plan objective of maintaining ambient air quality.

116. Mr Jones' updated Table 4 presented upper estimates of additional burners that could be enabled for the 'pollute to NES' scenario. If one accepts that this scenario fails to meet the Plan's objective and must on that basis be rejected, it follows that there is a substantially reduced upper limit to the burner capacity in Airsheds B2 and C.

117. Whilst submitters addressed us at length on their views of why a mix of ULEB and NES compliant burners ought to be enabled in Airsheds B2 and C, none of them was able to provide any meaningful estimates of likely demand for the different types of burner over the projected period of the estimates (out to 2030). Although we asked at the hearing, no submitter was able to provide us with an indication of whether the estimated ranges of burner capacity would meet immediate or foreseeable future demand by residents for different burner types. We consider this to be essential information in understanding the impact that the requested changes, in some cases allowing unlimited NES burners in Airsheds B2 and C, would have on long term ambient air quality. We cannot be certain, for example, that the 1,000 burners proposed by submission 29 for both Airsheds B2 and C would fit within capacity if those burners were of the NES type.

118. The only available indication of demand is provided by the results of a survey undertaken by the Council in January-February 2016. The survey was sent by post to all residential households in Nelson and to ratepayers living outside Nelson. The survey included some summary information describing NES compliant burners and ULEBs. The survey questions asked whether there was a currently working woodburner at the property, whether the owner was interested in installing a new woodburner at the property in the next 2 years, and whether the owner had a preference for an ULEB or NES compliant burner. The survey was completed by 1,136 people in relation to 1,327 properties. Of those, 941 responses related to properties without a woodburner and 386 properties that already had a woodburner. Of those without a woodburner, 597 expressed a wish

to install a burner and 478 preferred an NES type, 102 preferred an ULEB and 17 did not specify which type they preferred. Of those who already had a woodburner, 125 expressed a wish to replace it within 2 years and 101 of them preferred an NES type, 19 preferred an ULEB and 5 did not specify which type they preferred.

119. Some submitters sought to suggest that the survey demonstrates a very low level of demand for burners, in support of their contention that the Airsheds can 'afford' some flexibility in the mix of ULEB and NES types of burners. However, Dr Wilton cautioned against extrapolating actual demand over the projection period to 2030 from such a small, self-selected sample. We agree that the nature and timing of the survey and the framing of the questions are not indicative of a scientifically-robust survey. We also note that, by contrast with the 2016 survey results (386 households with woodburners), a more comprehensive 2014 survey undertaken by Dr Wilton's company[43] found there were approximately 5,837 households in Nelson using a woodburner for home heating in their main living room. The 2016 survey does provide a breakdown of responses by Airshed but the sample sizes are very small at this scale. Equally, however, the 2014 Environet survey did not ask about householders' aspirations with respect to installing or replacing burners. We do not consider either of the surveys provides a reliable basis for estimating future demand for burners or the likely impact of acceding to submitters' requests for further open-ended relaxation of the rules.

120. A number of submitters alluded to the obvious difficulty that would potentially arise in a scenario where residents are allowed a choice between ULEB and NES compliant burners. Those who installed ULEBs would 'occupy' less airshed but potentially pay more for the privilege than those opting for NES compliant burners. Allowance for NES compliant burners in Airsheds B2 and C would compound the existing inequities already inherent in the Air Plan discussed earlier in this decision. For example, residents in Airsheds A and B1 are not permitted to install even ULEBs, yet some submitters are proposing that residents in Airsheds B2 and C be allowed to install unlimited numbers of poorer performing NES burners.

121. Although the officers told us, in answer to our questions at the hearing, that consideration had been given to options involving a mix of NES compliant and ULEB appliances, no mixed scenarios were included in the s.32 report. Alternatives 1 and 2 presented in that report explicitly describe the scenarios as involving either ULEB *or* NES compliant burners. We have, however, considered the range of (fewer) burners likely to be achievable if ULEBs are replaced to varying degrees with NES compliant burners.

122. One of the reasons given at the hearing against enabling a mix of ULEB and NES compliant burners and against providing financial assistance is that these measures could simply be a mechanism for minimising costs incurred by landlords or somehow subsidising landlords. The analysis of household incomes and home tenure included in the Environet background reports indicates that the greatest need for affordable home heating lies with those on low incomes who rent. The evidence of submitters supports that likelihood. On an objective assessment

43 'Potential impacts of management measures – heating, household and fuel poverty data for Nelson – 2014' Envirolink Report NCC089

however, the RMA is somewhat agnostic in this respect. The concern of the RMA is with enabling people and communities to provide for their well-being and health and does not discriminate between dwelling owners, landlords or tenants. From an objective environmental point of view, surely it is immaterial where the cost saving lies if the result upgrades housing stock, enhances community well-being through household warmth and improves ambient air quality.

123. We attempted to explore, through questions of submitters and officers at the hearing, whether there might be a set limit placed on the number of NES compliant burners such that people with lesser means might be able to adopt that option. However, the answers we received underscored the difficulty of endeavouring to use an RMA plan to 'iron out' social inequalities. Mr Jones and Mr Heale were not confident that it would be possible to craft conditions that ensured any authorised pool of NES compliant burners is allocated to those with the greater social need. No suggestions were presented by any submitter that would overcome these difficulties.

124. For example, the suggestion of the Nelson Woodburner Group that a mix of ULEB and NES type burners be allocated only to pre-1976 dwellings will not guarantee that those in greatest need of warmth achieve it. Some owners of pre-1976 dwellings may actually be financially well-off and not disadvantaged. Mr Heale commented at the hearing that some of Nelson's oldest houses are the most valuable. Targeting these alone would not necessarily address home heating affordability. In addition, allowing lesser-performing NES type burners into pre-1976 dwellings as a priority would be potentially an inefficient 'use' of the Airshed if those homes are not insulated and require more fuel (i.e. emissions) to heat.

125. The closest anyone came to suggesting a way forward was the idea suggested by the Panel that the Council might certify to itself a set number of ULEBs and allocate those, outside the RMA framework, according to some criteria of social need. However, PCA3 proposes that a burner allocation certificate will be used only at the time a building consent is issued for that burner appliance. Therefore, it is not open to the Council for example, to reserve to itself a stock of ULEBs.

126. In this respect, it may be that 'the market' will perform poorly in ensuring that those in greatest need of ULEBs in Airsheds B2 and C actually achieve them. It may be unavoidable that the Council needs to itself intervene in 'the market' if the outcomes sought by many submitters are to be achieved to enable those in genuine and greatest need to access ULEBs. However, these outcomes are a long way from the explicit sustainable management purpose of the RMA, the objective of the Air Plan and the highly confined purpose of this Plan change[44]. We therefore do not consider it is appropriate for us to make any determination in this regard.

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[44] Page 2 of the s.32 report: *'This plan change aims to update the Plan by responding to the most recent air quality data available for the District. It strikes an appropriate balance between the competing costs and benefits associated with particulate matter discharge from domestic heating by providing for a limited number of small scale ultra-low emission wood burners ('ULEB') in appropriate areas'*.

Main Findings: Airshed B2 and C capacity

127. Having heard and considered the submissions and evidence of all parties, we are not persuaded that there is any sound basis for allocating available airshed capacity other than on a consistent basis (that is, to equally performing burners). The 'mixed' scenario advocated by some submitters would not achieve efficiency of use of natural and physical resources which is a relevant matter under s.7 of the RMA. We do not support the creation of further within-air-shed or between-air-shed anomalies within this Air Plan that would inevitably result from provision of a mix of ULEB and NES compliant burners. The Council has options, under other legislation, for providing incentives or assistance to overcome social inequalities and has been successfully implementing these. Those alternative methods were not considered at all in the s.32 report. Our view is that those measures, in combination with PCA3, have merit for addressing the social equity issues raised in submissions. However, our task is to identify the most appropriate way of achieving the Air Plan objective and the PCA3 purpose. Our view is that the most appropriate method, in these terms, is by enabling ULEBs and not unnecessarily taking up available airshed capacity with NES type burners.

128. Our detailed consideration of the proposed rules has highlighted a potentially inadvertent omission. The rules are not entirely clear that the replacement of an existing authorised burner with an ULEB is a permitted activity in all Airsheds. PCA3 is explicit in Rule AQr.26A.1 and in all explanatory text that ULEBs are only to be permitted in new houses or existing houses that do not have existing solid fuel burners. The rules provide explicitly for the replacement of authorised ULEBs with ULEBs (Rule AQr.26A.3 (B)) but not explicitly, there, for replacement of other authorised burners with ULEBs. Existing Rule AQr.25.1(c) provides for the replacement of authorised small-scale solid fuel burning appliances. However, the combination of proposed PCA3 changes to that rule and the definition of ULEB (explicitly excluding small-scale solid fuel burning appliances) means that PCA3 does not explicitly permit replacement of authorised non-ULEBs with ULEBs. Given the demonstrated superior air emissions performance of ULEBs, replacement of existing older-style burners with ULEBs can only yield environmental benefits. We note that Dr Wilton's modelling scenarios assumed that older authorised burners that are replaced will be replaced only with ULEBs. We are satisfied that it is appropriate to include explicit permitted activity provision for the replacement with ULEBs of older-style burners in all airsheds. It is clear that Rule AQr.25.1 intends to permit replacement of older-style burners with approved new technologies. However, the definition of ULEB together with the wording of Rule AQr.25.1 confuses that intention. It is consistent with the Air Plan objective and policies and with the purpose of PCA3 to make explicit provision for this category of activity. Doing so is not so much a change to the rules as a clarification of the original intention.

Whether PCA3 enables the consideration of availability of capacity in Airsheds A and B1

129. As mentioned at the beginning of this decision, this issue emerged in a vexed and unfortunate way.

130. These two airsheds include the areas of considerable socio-economic need where there are people living in more challenging circumstances and where concerns around some relaxation of the air quality rules to permit woodburners are at their most brittle.

131. The Council's evidence was that it might be several years before there would be any capacity (for relaxation) available in these two airsheds based on current data and the point was made that the 2015 data was not from a 'worst case' meteorological year. On the other hand, submitters who were urging relaxation in these two airsheds pointed to other evidence challenging the community health benefits of the alleged gains and the social and economic consequences of the status quo.

132. For legal reasons we will next explain, we consider that we are unable to grant the relief requested. Before explaining those reasons, we should emphasise, particularly to the submitters who sought this, that the reason is not that we did not wish to address this issue. It is because we are prevented from doing so. The extent of change requested goes beyond the scope of our delegation in respect of PCA3. Were we to pretend otherwise, and incorporate changes that are beyond scope, we would create for this community a set of plan provisions that is vulnerable to challenge. No interests would be served by that action. In reaching our view of the legal position we are conscious that we are reaching a different view from the Council's legal advisers. We hesitate to do that but we have to say that we considered the reason put forward by those legal advisers for treating this issue as "within scope" was unconvincing. We wish to record that on other issues we found the legal advice very helpful and of considerable assistance.

133. We now explain the basis for our conclusion about scope. For any amendment to a plan change, the starting point is whether any individual submission(s) explicitly requested that amendment. In their 19 May 2016 supplementary legal submissions, Ms White and Mr Allen identified a number of submissions that they considered had sought to extend the permitted activity status for wood burners in Airsheds A and B1. They held out Submission 29 as an example of a specific request to do so. Submission 29 requested amendment to '*allow 1000 new burners each in Airsheds B2 and C and 500 new burners in Airsheds A and B1*'. There is some confusion in that submission created by the reference to allowance of burners with emissions of 0.3g/m² and 0.3g/kg or less. A threshold set at 0.3g/kg would be a more stringent standard than the ULEB definition which sets the threshold at 0.5g/kg45. It is not clear that the reference in Submission 29 to 500 new burners is to ULEBs as defined by PCA3 or to even higher-performing burners that are not the subject of PCA3.

134. Other submissions[46] request more generally that *'Airshed A receive these changes first*' or request '*a small amount of ultra low emissions burners in Airsheds A, B1 and C*' or state that the submitter '*would be keen to see wood burners allowed into Victory Square'*. These submissions were not explicit as to the changes to be made to the rules to enable these outcomes and the submitters did not appear at the

45 1 cubic metre assuming a density of 1.0 = 1,000 kilograms

46 Submissions 18, 23 and 34

hearing to clarify their intention. Others requested unlimited provision for a range of burners throughout the City[47]:

- ULEB appliances should be '*permitted for retro fitting and in new houses being built in all zones'*;
- *'allow for existing homes to replace with NES, new homes ULEB and NES in Airshed A/other';*
- *clean air approved wood burners be allowed in all Airsheds'; or*
- *'allow the installation of NES compliant wood burners in all Airsheds except for Airshed A'.*

135. Submission 94 requested that NES compliant log burners be allowed only in pre-1976 homes including in Airsheds A and B1. Other submissions requested property-specific provision for wood burners generally (not just ULEBs) in parts of Airsheds A and B1[48].

136. For completeness, and without resiling from our finding below as to scope, we note that we have carefully considered the evidence in relation to availability of capacity to allow any additional burners of any type within Airsheds A or B1. Dr Wilton's clear evidence, not refuted by any party, is that there is no current capacity for additional small-scale solid fuel burners in Airshed A. There may be additional airshed capacity in Airshed A by about 2023-2025 if emissions can be reduced by natural attrition (the replacement of existing authorised burners with ULEBs or alternative non-emitting heat sources) and if the BCP is successful in that airshed. However, this possible future scenario is not certain and is not, in our view, a sound basis for creating immediate permitted activity provision for the numbers of burners requested by submitters (noting that most requests were open-ended and not limited as to numbers). Even the limited request of submitter 29, for 500 burners in Airshed A, is well in excess of estimated capacity even with attrition and favourable BCP results regardless of whether that involves ULEB or NES-type burners[49]. If that situation changes in the future, because of the BCP or other factors, the appropriate forum for re-considering the potential for additional burners in Airshed A is via the forthcoming Plan review or a later Plan change. The evidence does not support the changes requested at this time. In light of the absence of airshed capacity for additional burners, the liberalisation requested in submissions would result in degradation of air quality which would be contrary to the Plan's stated policies.

137. In Airshed B1, there is similarly no capacity for additional burners in the foreseeable future unless pre-2004 wood burners are replaced over a 20-year phase-out period. Dr Wilton's evidence was that there may be some capacity for ULEBs in Airshed B1 (up to a maximum of 500 ULEBs) if, over time, the pre-

47 Submissions 2, 53, 75, 76, 89

48 Submissions 6, 36, 58, 60 and (implicitly although not explicitly) 108

49 Jason Jones '*Responses to matters raised in Minute of 13 May 2016'* (dated 19 May 2016) updated Table 4 suggests maximum capacity for a maximum of 100 ULEBs or 25 NES-compliant burners with phase-out of 2004 burners and 10% BCP reduction and maintenance of air quality in other airsheds.

2004 burners are phased out and there is no further reduction in ambient air quality from any other source[50]. The evidence does not support a change to permitted activity provision immediately for even ULEBs. Any airshed capacity gains of any substantive volume have yet to materialise and are a future, not immediate, possibility. Submitters' requests were not restricted to ULEBs but were for NES-type burners or a mix of ULEB and NES type and, with the exception of submission 29, were not limited as to number. Provision for even 500 ULEBs in Airshed B1 has the potential to exceed actual available capacity unless reductions in emissions from other sources could be achieved in the foreseeable future. Provision for that number of ULEBs would not address the affordability concerns raised by submitters who were clearly seeking permitted activity status for NES-type burners. Provision for NES-type burners would mean a much-reduced potential number of burners (Dr Wilton's evidence is that 2 NES-type burners equates, in terms of emissions, to 9 ULEBs[51]). Our view is that would be an unsustainable and inefficient use of the available airshed capacity. Also, given the limited but highly speculative potential for future airshed capacity, there is potential for any permitted activity provision for additional burners to result in degradation of air quality which would be contrary to the Plan's stated policies.

Main Findings: Airshed A and B1 capacity

138. We are satisfied that there were submissions requesting further relaxation of the rules to permit or allow a range of burners (not exclusively ULEBs) in Airsheds A and B1. We also note that other submissions explicitly requested that no provision be made for any additional burners in those two airsheds.

139. However, even with the requests for relaxation and taking a generous view as to whether the explicit nature (scope) of the changes requested was expressed with sufficient specificity, the next step in the analysis is even more problematic.

140. This step in the analysis requires that the submission be "on" the plan change (RMA Schedule 1 clause 6). What does being "on" the plan change mean? Two cases have addressed this question: *Clearwater Resort Ltd v. Christchurch City Council*, HC Christchurch AP34/02, 14 March 2003 and *Palmerston North City Council v. Motor Machinists* [2013] NZHC 1290 at [91]. Those cases, and particularly the *Motor Machinists* decision, articulate two criteria:

141.1 Is the submission within the ambit of the plan change?

141.2 Would allowing the relief sought in the submission affect the opportunity of others to participate?

141. The supplementary legal submissions reason that the activity status for ULEBs within Airsheds A and B1 is within the ambit of PCA3 because PCA3 immediately changes consent status from prohibited to non-complying and provides for the *potential* in future to allow some ULEBs as permitted activities (if

50 Environet Ltd report '*Air quality management in Nelson – modelling of additional scenarios – 2015'* dated November 2015 – section 3.2.

51 Wilton section 42A report paragraph 3.27 and Jason Jones '*Responses to matters raised in Minute of 13 May 2016'* (dated 19 May 2016) updated Table 3 which confirms no change in the estimated capacity for ULEB or NES-compliant burners as a result of reviewing the BCP + phase-out of pre-2004 burners scenario.

the future capacity requirements of Appendix AQ2B are met for those two Airsheds). In our view, it is a stretch to suggest that, because PCA3 introduces a non-complying activity consent pathway for ULEBs, this somehow opens the way for *any* activity status and especially not permitted activity status. Similarly, we consider it a stretch to suggest that the possibility of permitted activity status at some undefined future time could be seen as contemplating amendments that would enable immediate permitted activity provision. The explanatory text of Appendix AQ2B as notified is clear that new appliances could not be accommodated currently in Airsheds A and B1 and that any ULEB proposals for those two Airsheds should be considered on a case-by-case application (not a permitted activity) basis. The evidence supports that approach. None of the purported legal submissions of submitters received during the hearing adjournment alter that conclusion. No part of the plan change sought to immediately change the permitted activity status in those two airsheds. Therefore requests to do so cannot be within the ambit of the plan change. They are requests to advance a different plan change. The appropriate process for pursuing those would be by variation, or new plan change, or through the Air Plan review.

142. The second criterion is even more demonstrably failed. An interested party (i.e. a notional or potential submitter) who might be opposed to the requested relaxation would be denied the opportunity to participate. Even without being alert to the possibility of permitted activity provision in Airsheds A and B1, some first-round submitters stated their opposition to any relaxation in those Airsheds. It is reasonable to conclude that there would be opposition to the relaxation requested, potentially also from others. Proceeding now on the basis that permitted activity provision is somehow within scope would deny interested persons the opportunity to oppose that proposal. They have been denied the opportunity to present evidence to the hearing on that matter. Furthermore, the precise wording of any such permitted activity provision was not made plain in the submissions. Submitters' requests for relaxation span a very broad spectrum, expressed in very general terms, and the specific detail of rule changes cannot be said to have been explicitly detailed either in submissions or (it follows) in the summary of submissions. It would be entirely wrong for us to endorse plan provisions that have not been the subject of a properly transparent process. In this respect, we are surprised that the Council's legal advisers take so different a view.

143. For completeness, we note that there was no evidence presented to the hearing that demonstrated any capacity within Airsheds A or B1 at this time for the extent of additional burners requested in submissions. It is also relevant that Airshed B1 contains a substantial industrial area. The submissions on behalf of some industries there (South Pine, Eurocell, Fulton Hogan) opposed the reservation of airshed capacity exclusively to domestic heating. It is our view that full consideration of all relevant, competing, interests and effects would be necessary before determining the balance of allocation of any available airshed capacity (if there were any). That has not been possible through this hearing given the confined scope of PCA3.

144. We have considered carefully the further submissions received from some submitters following our 13 May 2016 minute which variously express their expectation that the purpose of PCA3 was to decide on what new woodburner regulations should be implemented in each Nelson airshed, so as to meet or

improve the welfare of the community. However, that is not the stated purpose of PCA3. Its purpose is much more confined and therefore the scope of our decision-making is confined. The stated purpose of this Plan change is[52] 'to update the Plan by responding to the most recent air quality data available for the District. It strikes an appropriate balance between the competing costs and benefits associated with particulate matter discharge from domestic heating by providing for a limited number of small scale ultra-low emission wood burners ('ULEB') in appropriate areas'. The 17 December 2015 report to Council that recommended PCA3 stated that it was a short term response to community concern regarding the prohibition of woodburners, that it recognised the current Plan policy of continuing air quality improvement and that it was to provide for (only) ULEBs and other technology that meets a specified emission standard. The documents supporting PCA3 do not claim that it seeks to address community welfare or the issues of affordability submitters were raising with us. Whilst PCA3 is intentionally a short term response addressing a narrow issue, the Council has also resolved to bring forward its comprehensive review of the entire Air Plan. The wider issues of affordability, non-regulatory market interventions and inter-airshed inequalities should more properly be considered in the course of that comprehensive review.

The potential for PCA3 to degrade the air quality improvements gained

145. Some submitters oppose the proposed relaxation of the rules, through PCA3, to permit any additional burners of any variety.

146. Dr Wilton's evidence is that the extent of relaxation proposed by PCA3 will not result in degradation of current ambient air quality in Airsheds B2 and C. The underlying reason for that is the positive impact of natural attrition (meaning the phase out or replacement of existing older burners with better performing ones). This is illustrated in the graphs in the Environet background reports and in Dr Wilton's evidence to the hearing. The graphs suggest that, even without any gains achieved from the BCP, ambient air quality in both Airsheds will improve and get very close to the 'acceptable' NES standard over time. This meets the Air Plan's objective and policies of maintenance and long term enhancement. If a 10% improvement is achieved from the BCP, the improvement is enhanced and, for Airshed C would mean the 'acceptable' level is exceeded. No submitter presented any evidence to refute the improvement trends detailed in Dr Wilton's evidence.

147. Some submitters suggested that it will be important to continue monitoring so that actual trends can be compared with projections. Some went as far as suggesting that the PCA3 provisions should be reviewed after three or five years. Dr Wilton agreed that on-going monitoring should continue and it is implicit in the framework of the 'future allocation' method that the Council would continue to collect ambient air quality data. The NES also requires the Council to continue to monitor ambient air quality. There is no evidence to suggest that the Council will not do so.

52 Page 2 of the section 32 report

Main Findings: Potential air quality degradation

148. We are satisfied that implementation of PCA3 will not erode the ambient air quality of Airsheds B2 and C or conflict with the objective and policies of the Air Plan.

The question of whether PCA3 should be delayed until further monitoring information is available

149. The Ministry of Education (MoE) submission[53], presented by Ms Harwood, requested the introduction of an additional 1600 ULEBs to be installed in Airsheds B2 and C be delayed until 1 January 2018 when more monitoring data will be available for these airsheds. We heard that an additional 1600 ULEBs into Airsheds B2 and C may result in there being less "room' available for school heating systems.

150. Ms Harwood tells us there is insufficient information and therefore there is uncertainty regarding the actual air quality within the Airsheds (B2 and C) at present and the size of any "room" that there may or may not be within the airshed for allowing additional discharges. The suggestion was that this uncertainty could result in requirements for school heating systems becoming stricter, making it more expensive and difficult for schools to heat their schools and renew their resource consents.

151. Having regard to MoE concerns, we heard evidence[54] that initial trends evaluation for Airsheds B2 and C has not been undertaken, owing to the limited PM_{10} data available. However the relative derivation method used for B2 (whereby there is an established relationship to Airshed A concentrations) is also not an option for Airshed C, owing to low correlation in monitoring data between Airshed A and Airshed C.

152. Dr Wilton addressed the abovementioned evidence, telling us that the modelling[55] assessment has been used for Airshed B2 and C to identify the number of new ULEB burners that could be installed whilst maintaining the projected status quo improvements in air quality.[56]

153. The Nelson Environment Centre[57] submission advocates a cautious approach to the allocation of ULEBs in Airsheds B2 and C. The submission requests ULEBs not be allocated in one stage but that they be phased in over a period of 5 years, once monitoring clearly indicates that there is an on-going improvement in air quality.

Main Findings: Delaying the implementation of PCA3

154. Whilst acknowledging MoE's concerns, we lean toward the view that the operational requirements of schools in regard to discharges to air are subject to the AQP in place at the time. We are comfortable that the evidence provided at the

53 Submission 92
54 PCA3 pages 13 and 15
55 Air Quality Management in Nelson – modelling of additional scenarios - 2015
56 S42a, Appendix 4, Wilton, para 2.16 – 2.17
57 Submission 103

hearing as to the robustness of the predicted trends for air quality in Airsheds B2 and C does not require delaying or staging the introduction of additional ULEBs. That is further reinforced by the expected improvement in air quality achieved by implementation of the BCP. We heard no evidence from the Nelson Environment Centre or MoE that convinces us otherwise.

Whether allowance for industrial growth has been wrongly excluded

155. An interesting and forceful argument was made on behalf of the industrial submitters concerning the "allocation" regime in proposed Rule AQ2B.3. At its most fundamental level, the point being made was that this regime was inappropriately and unlawfully focused exclusively on an outcome that provided any new capacity would be allocated to the residential users, and no-one else. Indeed, these submitters pointed to evidence that a good deal of the 'gains' were in fact attributable to improvements by the industrial users in the first place.

156. An exploration of that priority type issue would be an interesting exercise – both as a matter of law and as a matter of planning principle. However, given the view that we have reached below concerning what could loosely be described as the 'future allocation rules', it is unnecessary to determine those issues in this plan change.

The viability of the 'future allocation' provisions

157. Two distinct legal issues are raised insofar as the proposed plan change makes provision for Council to authorise an increase in ULEB installations in specific airsheds in future as permitted activities when improvements in air quality have occurred:

    157.1 Whether the degree to which a discretion is reserved in order to create permitted activities is ultra vires and contrary to the RMA;

    157.2 Whether the 'future allocation' rules effectively create a plan change outside of the RMA Schedule 1 procedure.

158. While the concept of attempting to allow for future allocation was in some ways admirable, it was evident that the issue of reservation of discretions to achieve it was always going to be problematic. In the version of Rule AQ2B.3 that was notified, there were a number of aspects where discretions were plainly reserved. It is unnecessary to examine those in detail because a number of those were eliminated or minimised in a further version of the Rule recommended in the s.42A Report. However, again that version still contained reserved discretions.

159. After the submissions on behalf of industrial users had been heard and in the course of the Council reply, a further version of the Rule was suggested that arguably cleansed it of all discretions save for assessment of the "data". There was some debate as to whether this remaining aspect still triggered an ultra vires issue.

160. The relevant RMA provision is s.87A(1) which provides:

> *"If an activity is described in this Act … a plan, or a proposed plan as a permitted activity, a resource consent is not required for the activity if it complies with the requirements, conditions, and permissions, if any, specified in the Act, regulations, plan or proposed plan."*

161. It is well established that for a permitted activity rule to be valid the rule must be sufficiently certain so as to avoid invalidity: refer *Countdown Properties Ltd v. Dunedin City Council* [1994] NZRMA 145 and *AR & MC McLeod Holdings Ltd v. Countdown Properties Ltd* [1990] 14 NZTPA 362.

162. Does the discretion concerning assessment of "data" still offend the requirement of s.87A(1) requiring that the permitted activity be "specified"? We are inclined to the view that it probably does, but given our concern on the other issues discussed below, it is unnecessary to determine this.

Main Findings: Future allocation provisions

163. Looking at the "future allocation" provisions in the round, it is clear to us that what is intended is to create a mechanism whereby new permitted activity thresholds will be created. We see that as problematic. Essentially what it is seeking to do is to create new 'headroom' for permitted activity status that the plan at present does not permit without change. Further, that additional 'headroom' is effectively entirely allocated to a particular type of activity – residential activity. In our view, the unavoidable conclusion is that this is a plan change by the backdoor that has sidestepped the requirements of RMA Schedule 1 where both the 'headroom' and its allocation could be properly tested.

164. However, even if we were found to be wrong about that, we are struck by the overwhelming complexity of these provisions. Whilst a certain degree of complexity and sophistication is to be expected in contemporary environmental regulation (and the certification process in another part of the plan change here is an example of that), where expert analysis is required to determine whether or not an activity will be a permitted activity, the proposed provision can be rejected. For an example of the Environment Court taking that approach see *Carter Holt Harvey v. Waikato Regional Council* EnvC Auckland A123/2008.

165. We consider that while a laudable attempt has been made to provide for "future allocation", even without our concerns as to reservation of a discretion in respect of "data" or that this is effectively a pre-emptive further plan change by the backdoor, we consider that these provisions are far too complex. Part of the reason for that complexity is indeed that they are attempting to be pre-emptive in postulating a way forward once certain environmental states are achieved in the future.

166. Achievement of the NES long term targets in Airshed A will require something in the order of a 14% improvement. Dr Wilton predicts that there will not be any capacity for additional burners in Airshed A within the foreseeable future and certainly not within the 10-year life of the Air Plan. This makes the 'future allocation' rule somewhat meaningless for Airshed A. The complexity of the proposed provisions may not even be able to be implemented within the life of the Plan.

167. In our view, a far more appropriate way to achieve the objectives would be to notify a plan change once those future environmental states are actually achieved (or when they become imminent) and that will remove a great deal of unnecessary complexity.

168. We therefore determine that submissions opposing PCA3 be allowed to the extent of excision of the "future allocation" aspects of the plan change.

169. The issue that immediately emerges is whether or not such excision still leaves the residue of the plan change viable and coherent. We consider that it does. This is addressed in the next section.

PCA3 Rules and Methods

170. As explained at the outset, provisions including rules are to be evaluated according to whether they are the most appropriate way of achieving the objectives.

171. The Air Plan's existing rules for authorising and controlling solid fuel burners are complex. The PCA3 initiative to relax those rules by providing for a limited number of ULEBs necessarily has to fit into that complex framework. Addressing that complexity or achieving any simplification is an exercise beyond this PCA3 process but we would hope will be undertaken for the forthcoming full Plan review.

172. We have carefully considered the matters raised by submitters and are satisfied that, acknowledging the complexity, the rules proposed are the most appropriate to achieve the purpose of PCA3 and the Plan's objective with the exception of the following matters raised in the s.42A report and in evidence to the hearing:

Definition of 'small-scale ultra-low emission burning appliance' and 'real-life testing':

173. Mr Jones suggested some amendments to the definition of 'small-scale ultra-low emission burning appliance' including clarification of what 'real-life testing' means. His suggested amendments also clarify that burners that are not ULEBs are authorised under separate rules. We agree that those amendments are appropriate and necessary to support achievement of the objective.

Replacement of existing authorised non-ULEBs with ULEBs

174. To overcome the anomaly that the proposed rules do not explicitly (but should) permit replacement of any existing authorised burner with an ULEB, we consider it is necessary to include clarification in Rule AQr.26A.1 that replacement of an existing authorised burner with an ULEB is permitted (subject to all of the applicable standards for ULEBs).

Activity status for non-compliant ULEB stacks

175. As publicly notified, PCA3 would make non-compliance with stack requirements for ULEBs a non-complying activity. We note that existing Rule AQr.25.3 treats as a restricted discretionary activity any small-scale solid fuel burning appliance that fails the Appendix AQ4 stack requirements. The PCA3 section 32 report does not address why the activity status for ULEBs that fail the stack requirements

should be so much more stringent or why non-complying activity status is appropriate. There seems to be no reason for such a difference in approach when the potential effects on the environment are similar. Our conclusion is that, given the similarity in potential environmental effects arising for non-compliant stacks associated with either ULEBs or NES-compliant burners, the approach to considering non-compliant stacks should be equivalent under the rules. We have amended Rule AQr.26A.3 to clarify that ULEBs that have non-compliant stacks will be considered as restricted discretionary activities (assuming they are compliant with all other standards). We have inserted the identical restricted matters from Rule AQr.25.3. ULEBs that fail to comply with other standards will, as currently proposed, be considered as non-complying activities under Rule AQr.26A.3.

Appendix AQ2B Specification of maximum numbers of ULEBs

176. Appendix AQ2B currently states that a burner allocation certificate will be issued if there are, at that time, no more than 1000 and 600 ULEBs in Airsheds B2 and C respectively. However, that would mean that when the total number reaches 1000 or 600 an additional one in each airshed would be able to be certified. Although it is a small point, the Council's expert evidence was on the basis of a maximum of 1000 and 600 (not 1001 and 601). On that basis, we have adjusted the maximum number in clause AQ2B.3.2 to make it clear that the last application for burner allocation certificates will be granted when the tally in the airsheds is 999 and 599 respectively (making a total of 1,600 as intended).

Rule AQr.26A title

177. We agree that the amendment to the wording of the title of Rule AQr.26A suggested by Ms McNae, in support of the submission by McCashin's Brewery, assists to clarify the scope of the rule and does not alter the substance or effect of the rule itself.

Excision of 'future allocation' provisions of Appendix AQ2B

178. For the reasons earlier explained, we do not consider that the 'future allocation' provisions are appropriate at all or the most appropriate way of achieving either the PCA3 purpose or the Plan's objective. Our conclusion is that a more appropriate approach is to delete all of the 'future allocation' provisions from Appendix AQ2B.

179. We have considered whether that is technically feasible without consequential changes to other parts of the PCA3 provisions. It would seem that amendment is required to the explanatory text in AQr.26A.5, deleting reference to the 'future allocation' provisions. We also consider that some additional explanatory text is appropriate within Appendix AQ2B clarifying the process by which future changes to the location or quantum of ULEB allocation will be made.

180. We consider that it is appropriate to retain the default non-complying activity rule (AQr.26A.3) for any proposed burner that does not meet the requirements of Rule AQr.26A.1 rather than reverting to the current prohibited activity status. We also consider that some amendment to the explanatory text in Appendix AQ2B is necessary to support this non-complying activity default rule.

181. In addition, we consider that the explanatory text that was included within parts of the Appendix AQ2B provisions should be placed under the heading 'Explanatory Note', consistent with the format of other appendices.

182. As a result of the above changes, there are also some changes to paragraph numbering.

183. Given the overall complexity in the provisions, we also consider that it would assist clarity if there is a 'road-map' note somewhere stating that the requirements of Appendix AQ2, for small-scale solid fuel burning appliances, do not apply to ULEBs and that the ULEB requirements are specified separately in Appendix AQ2B. There is one aspect of Appendix AQ2 that is relevant, however. That is the list of information required to accompany applications for authorization of appliances. PCA3 did not propose to alter these as they relate to ULEBs (as a subset of small-scale solid fuel burning appliances) and these requirements should be retained.

184. With the above amendments, we are satisfied that the provisions for ULEBs are the most appropriate way to achieve the purpose of PCA3 and the Plan's objective.

Editorial Correction – Rule AQr.26A.3 (B)

185. In addition to the above matters, we note that the reference in this rule to the definition of 'ultra-low emission burner in part (B) (i) is incorrect. The reference should be to A2-76 and not A2-74A.

Section 32 requirements

186. The stated aim of PCA3 is to respond to the most recent air quality data available for the district and to strike an appropriate balance by providing for a limited number of ULEBs in appropriate areas[58]. Section 32 (6) of the RMA clarifies that, for a proposal that does not explicitly state an objective, the relevant objectives for the purpose of s.32 evaluation means the purpose of the proposal. The purpose is clearly stated and highly confined. Section 32 (3) further clarifies that, for an amending proposal such as PCA3, the examination that is required must relate to the provisions and objectives of the amending proposal and to the objectives of the existing proposal to the extent that those objectives are relevant to the amending proposal and are unchanged by the amending proposal[59].

187. We are required to consider whether the provisions (the proposed rules and methods) are the most appropriate way to achieve the objectives (in this case, both the confined purpose of PCA3 and the existing Plan objective).

188. Counsel for South Pine and others challenged the adequacy of the s.32 evaluation that accompanied PCA3 and its failure to incorporate analysis of industrial opportunity cost associated with the 'future allocation' rules.

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58 Abbreviating the text on page 2 of the s.32 report

59 PCA3 is an 'amending proposal' because it will amend a plan that already exists (s. 32 (3))

189. To overcome that potential issue, Mr McIlrath explained in supplementary oral evidence the broad scope of benefits and costs associated with determining the balance of Airshed allocation between domestic heating and industrial activity. The explanation was helpful but probably not sufficiently detailed to meet the usual requirements of s.32. However, in the event, Mr McFadden confirmed that the industry submitters did not take issue with the use of Airshed capacity by allocation of 1,600 ULEBs in Airsheds B2 and C. He and Dr Jackson confirmed that their concern lay with the 'future allocation' provision and we have addressed that by excising those provisions.

190. Section 32AA of the RMA requires us to undertake a further evaluation of the s.32 matters where changes are proposed to be made to the proposal since the original s.32 report was completed. The evaluation is required only for the further changes proposed and must be undertaken at a level of detail that corresponds to the scale and significance of the changes proposed (s.32AA (1) (c)). We are not required to 're-do' the original s.32 report. We are required to either publish our evaluation in a separate report that is made available for public inspection *or* in this decision-making record (provided sufficient detail is included to demonstrate that the further evaluation was undertaken in accordance with the requirements of s.32AA). We have elected to provide our evaluation in this decision: in the evaluation and findings set out earlier and in the following paragraphs.

191. We have summarised above the further changes we propose to make to PCA3 and our reasons for concluding why those are the most appropriate way of achieving the PCA3 purpose and Plan objective. In addition to those conclusions, we observe that most of the changes are minor in nature and will not create any new or additional costs for the community than originally proposed by PCA3. The changes will potentially yield some benefits in ease of Plan implementation (although probably minor in the broad scheme of things). The one material change that we have made, being the excision of the 'future allocation' provisions, may limit the opportunities for new ULEBs in Airsheds B2 and C but possibly not (or not materially) in Airsheds A and B1 because of the uncertainty about the ability of the BCP to generate airshed capacity gains there. We are unable to quantify that reduced opportunity because it is not known, at this stage, exactly how many additional ULEBs might have been authorised under the 'future allocation' provisions or when they would. Indeed, that is a fundamental failing of that 'future allocation' proposal. The evidence of Mr McIlrath satisfies us that there are potentially substantial opportunities for industrial and community-wide economic growth that are protected or enabled by not prioritising future airshed capacity for use by domestic heating as the 'future allocation' provisions would have done.

192. We have considered other alternative options, suggested by submitters, to the extent reasonably practicable noting our earlier findings about lack of scope to pursue some suggested alternatives.

193. Our conclusion is that the changes we propose to make to PCA3 are a more appropriate method for achieving the Plan's objective and will better promote the sustainable management of Nelson's ambient air quality than would the publicly notified PCA3.

VI. Conclusions

194. For the reasons set out in our evaluation of the issues, and taking into account all the evidence, the submissions and the relevant statutory matters, we conclude that PCA3 should be accepted and adopted except in respect of the further changes we propose above. We also consider we are unable to accede to the liberalisation relief sought by submitters in respect of Airsheds A and B1. There are four reasons for our conclusion on these requests: we consider that the requests for additional burners within Airsheds A and B1 are beyond the legal scope of PCA3, we are not satisfied there is capacity to provide the extent of liberalisation requested, there is demonstrable potential for the liberalisation requested to result in degradation of air quality in those airsheds, and this would be contrary to the Plan's stated policy. With the future allocation aspects excised, we are satisfied that with some consequential amendments, PCA3 remains viable and ought to be adopted for the reasons already covered in our evaluation section.

195. Accordingly, our formal decision is:

195.1 The plan change is accepted as amended in Annexure 2 and all submissions on the plan change are accepted or rejected to the extent that the relief sought in those submissions is in conformity or otherwise with that annexure. A summary of submission outcome is attached as Annexure 3;

195.2 Pursuant to clause 10 of the First Schedule of the Resource Management Act 1991, the Council is directed to give notice of this decision on submissions to the plan change as soon as practicable.

VII. Additional Recommendations

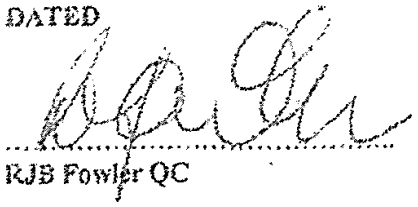
196. We also make the following recommendations to the Council addressing some of the points made by submitters that are not addressed by changes to the Plan provisions. There is no legal obligation on the Council to adopt these recommendations but we make them because we consider that they are important to achieving the assumptions on which PCA3 has been founded. Our recommendations are:

196.1 That the Council maintains and bolsters its ongoing funding commitment to the behaviour change programme so as to achieve the reductions in emissions in all airsheds that were described as possible by Council's experts in evidence to the hearing. This is important not only for Airsheds B2 and C, within which PCA3 permits the installation of new ULEB appliances. It is also essential for Airsheds A and B1 where, without some substantive reduction in emissions, it will be very difficult to achieve the stated Air Plan policy of continued air quality improvement or to create airshed capacity that might be made available for domestic heating in the future. Dr Wilton described to us, in evidence, what an effective behaviour change programme would look like. Her advice, which we commend to the Council, is that the programme should involve a specialist team with appropriate skills and training ready to intervene where poorly-performing burners are identified so as to change burner practice. Dr Wilton's advice was clear that such intervention might need to include enforcement action

and that it would be resource intensive during the relevant (winter) period. Her advice was, also, that reliance on very passive measures such as pamphlets would not be effective.

196.2 That the Council continues to monitor ambient air quality in all urban airsheds so as to understand, over time, the capacity that is available to be taken up by new sources of emissions including by domestic heating. Useful work was done by Council advisers in developing the methodologies for evaluating available airshed capacity in PCA3. We consider those methodologies provide a useful basis for assessment of airshed capacity for any future Plan change or for the forthcoming Plan review or for assessment of individual applications for consent.

DATED



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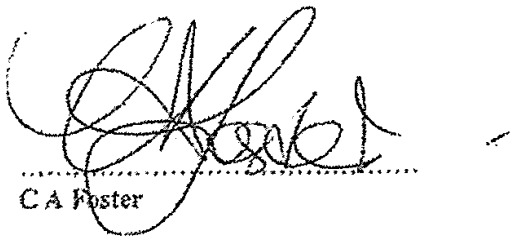

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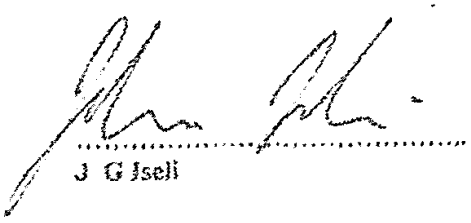

J G Iseli

S G Paine

ANNEXURE 1

The following persons attended the hearing 3-5 May 2016 and made submissions or gave evidence:

For Nelson City Council:

- Mr Jason Jones, Consultant Planner employed by Resource Management Group Limited
- Dr Emily Wilton, Consultant Air Quality Scientist
- Mr Lawrence McIlrath, Consultant Economist and Associate Director, Price Waterhouse Cooper (NZ)
- Mr Richard Popenhagen, NCC Environmental Programmes Adviser
- Mr Matt Heale, NCC Manager – Planning
- Ms Clare Barton, NCC Group Manager – Strategy and Environment
- Ms Julia White, Legal Counsel

Submitters:

- Mr Brendan Santorini
- Mr John (Brent) Higgins
- On behalf of the Nelson Marlborough District Health Board Public Health Services:
  - Mr Peter Burton
  - Dr Ed Kiddle, Medical Officer of Health, Nelson Marlborough District
- Mr Harry Pearson
- Mr Tim Skinner
- On behalf of the Ministry of Education:
  - Mr Alan Roberts, Regional Property Adviser, Ministry of Education
  - Ms Prue Harwood, Senior Associate – Environmental Engineering and air quality specialist employed by Beca Limited
- Mr Greg West
- On behalf of Eurocell Wood Products Limited and Southpine (Nelson) Limited:
  - Mr Nigel McFadden

  - Mr Darryn Adams, General Manager, Southpine (Nelson) Limited
  - Dr David Jackson, Senior Resource Management Planner, Opus International Consultants Limited
- Mr Grant Bosma, Industries Manager, Fulton Hogan
- Mr Richard Adams
- Dr Rene Haeberli
- Ms Melissa Short
- Mr Neville Male
- On behalf of McCashin's Brewery:
  - Ms Jacqui McNae, Consultant Planner
  - Mr Dean McCashin
- Ms Charmian Koed
- On behalf of the Nelson Woodburner Group:
  - Mr Peter Olerenshaw
  - Mr Gair Thompson
  - Mr Graeme O'Brien
- Mr Darryl Ware on behalf of Darryl and Sandra Ware