

Objective AQL3 Objective for ambient air quality in Christchurch ## 03-035 01 00 - 03-035 05 00

52	S. Corry	Retain objective.
89	J. McSweeney	Support.
90	H. Black	Change 2012 to 2006.
103	G. I. Town	Add PM2.5 criteria.
136	Association For Independent Research (AIR)	Research needed to establish the relevance of indoor air pollution in Christchurch.
137	L. Griffiths	Retain.
159	J. C. Elliott	Delete objective AQL3.
187	T. Cormack	Delete Objective AQL3.
188	D. Stanford	Delete Objective AQL3.
200	J. Ponsonby	Set sustainable air emission targets which enable and encourage innovation and technological improvements to meet standards or targets over time rather than prescribing the method of achieving such targets.
215	Canterbury Aoraki Conservation Board	Support. Cite the results of an EPA study of the health effects of smog in the USA.
223	P. F. Dobbs	Extend the target date e.g. a minimum of 25 years to minimise costs and disruption of change.
228	W. & R. Teeuwen	Replace the year '2012' with 'by the year 2007', and add to the objective: 'By the year 2012 there will be a reduction in the concentration of PM10 to less than 50 microgram/m3 (24hours average) with no exceedances.'
271	D. Kelly	Proceed with Objective AQL3, and ensure air quality targets are met as soon as possible.
275	Ravensdown Fertiliser Co-Operative Ltd	Support Objective AQL 3.
314	R. E. Scott	Re-examine Objective AQL 3 using more correct assumptions and more current data.
321	B. J. Swale	Revise the annual exceedance to permit more, e.g. 5.
338	Transit New Zealand, Christchurch	Retain as worded.

369	Orion New Zealand Ltd	Consider whether low emission domestic fuel burners be allowed and whether cost/benefit analysis indicates more efficient ways of reducing air pollution levels.
372	New Zealand Post	Retain as worded.
379 (point 1)	Christchurch City Council, Civic Offices	Clarify the boundaries contained in the clean air zone maps.
379 (point 2)	Christchurch City Council, Civic Offices	Object to the fixed nature of the target contained in the objective.
379 (point 3)	Christchurch City Council Civic Offices	Object to inadequate section 32 analysis.
402	Alan Brown Energy Resource (1988) Ltd	Support.
426	Housing New Zealand Corporation, Papanui	Amend Objective 3 as necessary to a target that is satisfactory to HNZA and is realistic and achievable, and addresses the concerns raised by HNZA in relation to the package of methods to achieve the specified target.
903 (point 1)	D. R. Hay	Reconsider the science used to support the objective.
903 (point 2)	D. R. Hay	ECan should continue to have an annual average PM ₁₀ target.
906	Canterbury Horticultural Society Inc	Consider whether Objective 3 is realistic.
907	P. L. Tilley	Delete Objective 3.
F426 (point 1)	Housing NZ Corp	Oppose submission 90.
F426 (point 2)	Housing NZ Corp	Support submission 223: Extend the target date e.g. a minimum of 25 years.

Submission Clarification

Submission 52

This submitter wishes to see Objective AQL3 retained, but accepts that additional exceedances may need to be allowed for.

Submissions 187, 188

The summary of submissions recorded that the policy referred to Policy AQL3. It should have read Objective AQL3. These submissions are considered in this context. The submitters oppose Objective AQL3 as they are happy with the status quo allowing the unrestricted use of wood burners in Christchurch.

Submission 215

This submission contained a typographical error. It referred to Objective AQL 13. It clearly intended to refer to Objective AQL 3 and is considered at this point.

Submission 379 (point 1)

The submission relates to '3.10 Air quality maps'. It is considered in that context, ## 03-225.

Submission 369

The provision this submission refers to is: *“Chapter 3 including any policies, objectives, rules, methods, issues, explanations and reasons relating to domestic fuel burners.”* The submission was summarised under Objective AQL3. It is considered at this point.

Consideration

Submissions 159, 187, 188, 907

These submitters sought that Objective AQL3 should either be deleted or reconsidered. Reasons included assertions that the status quo is appropriate (187, 188), and that the timeframes involved are unrealistic.

None of the submitters suggested a replacement objective. If the submissions were to be accepted, the consequence would be that Policies AQL13 to AQL21 and the related methods (including rules) would also need to be deleted except insofar as they relate to Objectives AQL1 and AQL2. Making this change would also mean that the resource management issue identified in Issue AQL2 would not be addressed Chapter 3. Further, deletion of Objective AQL3 would mean that Chapter 3 would fail to be consistent with the Canterbury Regional Policy Statement, in particular with Chapter 13 Air, Objective 1 and Policy 3. One of the two methods identified in the Regional Policy Statement for its implementation is Chapter 3. Finally, as noted above - Chapter 3, Overview - the NES has been introduced. It reinforces the timeframe proposed by ECan. The Commissioners consider that Objective AQL3 - or something similar to it - is appropriate and that it must remain. No change is recommended, and it is recommended that the submissions are rejected.

Submission 314, 903(point 1)

These submitters query the science used by Environment Canterbury to justify Objective 3. The substance of these submissions has been considered above - Chapter 3, Overview ## 03 000 00 00, 49, 71, 81 (points 1 and 2), 134, 136 (point 2), 162, 164, 190, 231, 423 (points 1 and 2), and 891; ## 03-027 01 00, 903. The reasoning there given is adopted. It is recommended that the submissions are rejected.

The Commissioners note that the NES has overtaken any debate about scientific uncertainty.

Submissions 90, 223, 228, 271, 379(point 2 and 3), 906, F426(points 1 and 2)

These various submitters query the date set in Objective AQL 3. Submitter 379 objects to the fixed target contained in Objective AQL3. It also raised the issue of the adequacy of Environment Canterbury's section 32 evaluation. It considers that in setting the objective, insufficient account was taken of social, economic and environmental sustainability criteria. No specific change to Objective AQL3 was detailed in this part of the submission. Submitters 223 and 426 sought that the target should be extended. Submitter 90 (opposed by further submitter F426) sought that '2012' should be changed to '2006'. Submitter 228 sought that the change should be to '2007'.

As set out in the 'explanation and principal reasons' for Objective AQL3, specifying the year 2012 puts in place a target. The Commissioners were told that the year 2012 was put in the objective after an analysis of the different measures proposed in Chapter 3, including their effectiveness and impact (social, environmental and economic). Changing 2012 to an earlier date would require that the methods controlling the discharge of PM₁₀, particularly from domestic home heating, would need to be significantly strengthened - there would be consequent social and economic disruption. Removing or significantly extending the date would slow down the implementation of Chapter 3 and delay a reduction in air pollution in Christchurch. The NES has now been introduced. It reinforces the 2012 timeframe in that it specifies the year 2013. Moreover it mandates compliance by that date if various draconian consequences are to be avoided.

The decision on the appropriate timeframe is not a single task. It requires an overall broad judgment. None of the submitters are suggesting that, within Christchurch, there is no need to manage the air resource to improve air quality. None (in this context) are disputing the degree of improvement required. All are focussed on what is the appropriate timeframe for improvements in air quality.

Christchurch has been subject to controls designed to reduce PM₁₀ emissions from domestic home heating for many years. Notwithstanding the submission to the contrary, the Commissioners accept that ECan undertook an appropriate section 32 analysis. It considered and weighed: -

- the health and nuisance effects of current and predicted ambient air quality;
- the requirement to safeguard the life supporting capacity of the air; and
- the enablement of people and communities to provide for their social, economic and cultural well-being;

It also addressed: -

- the health effects associated with any requirement to change domestic home heating methods;
- the disabling of people and communities; and
- the financial cost to individual households and house owners in changing domestic home heating methods

It took into account Environment Canterbury's Clean Heat Project and the financial assistance it provides to individual households.

The section 32 report sets out alternative methods to improve air quality and their relative merits (pgs 258 to 289). Based on the information before it, Environment Canterbury came to the view that '2012' was the most appropriate timeframe to achieve the purpose of the RMA. The Commissioners do not believe that they should second-guess this analysis. They agree with and accept the reasoning in the relevant part of the section 32 report.

The NES has been introduced. It requires that pollution PM_{10} will be no more than 50 g/m^3 (24 hour average) with a maximum of 1 allowable exceedance per year by the year 2013. The NES and Chapter 3 are similar but Objective AQL3 takes an averaging approach which results in a less strict exceedance regime than the NES. This will need to be dealt with by a variation - given the provision of section 43B of the RMA. Chapter 3 sets a target for achievement of its less strict target one year earlier (2012 versus 2013). There is no legal difficulty with this.

Failure to achieve the NES for PM_{10} is likely to have significant consequences for the consenting of new emissions. No change is recommended at this time, and it is recommended that the submissions are rejected (with the exception of F426 (point 1)). ECan will however have to consider a variation to deal with the exceedance issue.

Submission 321

Submitter 321 sought that the number of exceedance days should be revised to allow for 'perhaps' as many as five.

Relaxing the number of exceedance days would slow improvements to air quality in Christchurch. It is also inconsistent with the NES and this is not permitted - see section 43B of the RMA. No change is recommended, and it is recommended that the submission be rejected.

Submission 903 (point 2)

Submitter 903 considers that Environment Canterbury should continue with an annual average PM_{10} target. The specific target sought by the submitter is not specified in the submission, but it is implied that the Council should relax the target in Objective AQL3.

The 50 g/m^3 (24 average) target is the same as the ambient air target set for PM_{10} in the NAAQG (pg. 11). It is also the same as the target in the NES.

The submitter refers to United States of America, Environmental Protection Agency, PM_{10} standard of 150 g/m^3 (24 hour average). The point is made in the Section 32 Report that this standard was maintained at this higher level because of the introduction of a $PM_{2.5}$ standard (pg. 229).

The NAAQG sets an annual target for PM_{10} of 20 g/m^3 .

Given the seasonality and weather dependence of Christchurch's PM_{10} air pollution issue, and the health risks associated with PM_{10} exposure, the Commissioners accept that a 24-hour target is more appropriate than the annual target. No change is recommended, and it is recommended that the submission is rejected.

Submission 426

Submitter 426 sought that Objective AQL3 should be amended to a target that is satisfactory to the submitter, is realistic and is achievable. No specific change to Objective 3 was identified in the submission.

The submitter is concerned with:

1. the timeframe available to convert its open fires (Rule AQL10);
2. the lack of available in-built log burners to meet the emission and thermal efficiency criteria (Rule AQL2); and
3. the number of units the submitter must convert.

The 2001 Taylor Baines report (*Assessment of the likely social impacts resulting from the proposed domestic heating rules contained in the Air Quality chapter of the Natural Resources Regional Plan*, Environment Canterbury Report U01/83) provides some indication of the scale of the issue facing the submitter. In 2001 it owned approximately 5300 rental properties with 1150 open fires and 1035 enclosed wood burners (pgs 54 and 55).

The conversion of these open fires is a priority because of the significant contribution they make to Christchurch's PM₁₀ pollution issue. There however are now a number of in-built log burners available that meet the requirements of Rule AQL2. The conversion of the existing log burners is not so urgent, but it must occur within the timeframes set out in Rule AQL11 – the later of 1 January 2008 or 15 years from the date of installation of the log burners. Therefore, 'Woodsman burners' recently installed by the submitter can be used for their 15 year life and thereafter be replaced as part of a normal replacement programme.

The NES has been introduced. The NES PM₁₀ standard is 50 g/m³ (24 hour average) with a maximum of 1 allowable exceedance per year, to be achieved by the year 2013. There is no time to further delay matters. There will be a significant burden on the submitter but that cannot be avoided.

No change is recommended, and it is recommended that the submission is rejected.

Submission 103

The submitter sought that a PM_{2.5} criterion be added to Objective AQL3. The criterion sought was not specified in the submission.

The Commissioners were told that during the development of the NAAQG, there was discussion of the need for a PM_{2.5} guideline given the adverse health effects of these smaller particles. The NAAQG indicates a PM_{2.5} monitoring value (25 g/m³, 24 hour average) but stated that it is premature to set a guideline value (pg. 11). The NES does not contain a PM_{2.5} standard. The majority of Environment Canterbury's research and policy evaluation has been in relation to PM₁₀. Given this, and given the lack of specificity in the submission, no change is recommended at present. It may be that future work will result in a variation to deal with PM_{2.5}. At present it is recommended that the submission be rejected.

Submission 136

Submitter 136 sought that an indoor pollution standard should be established.

The substance of this submission has been considered above (see 3.1 Introduction - Paragraph 1 ## 03-001 04 00, 136 and F136). That analysis is adopted. The submitter also refers to the USA, EPA PM₁₀ standard. The evaluation above ## 03-035 01 00 - 03-035 05 00, 903 (point 2) is relevant and it is adopted. No change is recommended, and it is recommended that the submission is rejected.

Submission 369

Submitter 369 sought that low emission domestic fuel burners should be allowed, and queried whether a cost/benefit analysis would indicate that there are more efficient ways of reducing air pollution levels.

The Commissioners note that Objective AQL3 does not preclude low emission fuel burners. Rather it details an objective for ambient air quality in Christchurch. Environment Canterbury was satisfied that Objective 3 was necessary, and indeed the most appropriate way, to achieve the purpose of the RMA. The passing of the NES endorses that approach. No change is recommended, and it is recommended that the submission is rejected.

Submission 200

Submitter 200 sought that emission targets should be set, which enable and encourage innovation and technological improvements to meet standards or targets over time rather than prescribing the method of achieving such targets.

Objective AQL3 does not prescribe how the target is to be achieved. However, the resulting policies and methods (including rules) do. Provision is made for different forms of technology provided the emission standards necessary to achieve the objective can be met. This does and should enable innovation and technical improvements to be made throughout the life of Chapter 3. Further, it is possible to amend Chapter 3 through the plan change process if in the future technological changes made it desirable to do so. No change is recommended, and it is recommended that the submission is rejected.

Submission 215

Submitter 215 supports Objective AQL3 but sought that mention should be made of recent research by the USA EPA.

Health-based research material formed part of Environment Canterbury's Section 32 Report. In the Commissioners' view individual reports and detailed research material do not need to be referred to in Chapter 3 - or specifically in Objective AQL 3. No change is recommended, and it is recommended that the submission is rejected.

Submissions 52, 89, 137, 275, 338, 372, 402

These submitters support Objective AQL3. Given the above recommendations it is recommended that they be accepted.

Recommendation

Reject

Submissions 90, 103, 136, 159, 187, 188, 200, 215, 223, 228, 271, 314, 321, 369, 379(point 2 and 3), 426, 903(points 1 and 2), 906, 907, F426 (point 2).

Accept

Submissions 52, 89, 137, 275, 338, 372, 402.

Accept in part

Submissions 215, F426 (point 1).

Amendment Required

None required.

Explanation and principal reasons ## 03-035 07 00

82	P. Wardle	Clarify whether a variable is missing – i.e. how many hours or days per year does a specific PM ₁₀ level have to be maintained to effect the stated mortalities?
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ConsiderationSubmission 82

The substance of this submission was considered above (see 3.1.3 Ambient air quality issues, ## 03-002 42 00 - 03-002 44 00, 82). The reasoning is adopted. The recommendation is the same – that no change be made, and that the submission be rejected.

Recommendation**Reject**

Submission 82.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 2 ## 03-035 14 00

903	D. Hay	Clarify what is meant by 'premature'.
F136	Association For Independent Research (AIR)	Support submission 903.

ConsiderationSubmissions 903, F136

Submitter 903, supported by submitter 136, was summarised as seeking clarification of what is meant by use of the word 'premature'.

Reading the submission, it is clear that the assertion being made by the submitter is that the underlying research on the health effects of PM₁₀ exposure is either uncertain or is flawed.

This issue has been considered above (see ## 03-027 01 00, 903 and the various references there given). The views there expressed are adopted. Reference is also made to the overview to Chapter 3 where the health effects research undertaken and relied on by ECan was summarised - paragraphs 46 and 47. That material is also relied on. The recommendation is the same – that no change be made at this time, and that the submission be rejected.

Recommendation

Reject

Submission 903, F136.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 5, clause (c) ## 03-035 35 00

82	P. Wardle	Last sentence presumably means 300,000 - 600,000 person days per annum.
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Consideration

Submission 82

This submission seeks clarification.

The Commissioners refer to the summary in the overview to Chapter 3, paragraph 44. No change need be made, and it is recommended that the submission is rejected.

Recommendation

Reject

Submission 82.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 6 ## 03-036 01 00

350	J Syddall	Submitter challenges the assumptions underlying the achievement of the targets by 2012. No decision requested.
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Consideration

Submission 350

Submitter 350 challenges some of the assumptions underlying the achievement of the target by 2012. The assumptions challenged, and what changes if any are sought to Chapter 3, are not identified.

The material set out in the Explanation and Principal Reasons for Objective AQL3 records the assumptions made by Environment Canterbury in the development of Objective AQL3. Unless there is some factual error made in recording the assumptions made, there can be no basis for challenging them. They may or may not be sound assumptions but that is a different issue. Indeed Chapter 3 records that ECan accepts there is some uncertainty. It is not obvious to the Commissioners that there is any error in recording ECan's assumptions. No change is recommended, and it is recommended that the submission is rejected.

Recommendation

Reject

Submission 350.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 7, clause (d) ## 03-036 08 00

68	M. J. Duncan	Amend to read " ...installation of enclosed burners..."
310	Pellet Fuels New Zealand Ltd	Exclude pellet fires from the solid fuel classification and reclassify pellet fires as a Hi Tech Engineered Biomass combustion burner.
322	Pellet Fireplaces New Zealand Ltd	Exclude pellet fires from the solid fuel classification and reclassify pellet fires as a Hi Tech Engineered Biomass combustion burner.

Consideration

Submission 68

Submitter 68 sought a change in wording of the assumption (d).

In the Commissioners' view the present wording (*solid fuel burners*) better reflects the terminology used throughout Chapter 3. To introduce different terminology in this one location would potentially cause confusion. No change is recommended in response to this submission, and it is recommended that it be rejected.

Submissions 310, 322

These submitters sought amendments to assumption (d) so as to differentiate pellet fires from small scale solid fuel burning devices. They made a number of submissions on Chapter 3 that if accepted would have the effect of including specific provision for pellet fires.

The assumptions set out in the ‘explanation and principal reasons’ to Objective AQL3 are a factual record of the assumptions made by Environment Canterbury in the development of Objective AQL3. Setting out the assumptions clarifies the basis upon which Environment Canterbury considered that Objective AQL3 can be achieved. It allows monitoring of the validity of the assumptions over time. There is no suggestion that there is any factual error in the wording of the assumptions. The Commissioners do not consider that they should alter them. They refer to the analysis immediately above, ## 03-036 01 00, 350. No change is recommended, and it is recommended that the submission be rejected.

Recommendation

Reject

Submissions 68, 310, 322.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 7, clauses (e) and (f) ## 03-036 10 00

310	Pellet Fuels New Zealand Ltd	Add: '(excluding pellet fireplaces)'.
322	Pellet Fireplaces New Zealand Ltd	Add: '(excluding pellet fireplaces)'.

Consideration

Submissions 310, 322

These submitters sought amendments to assumption (e) so as to differentiate pellet fires from small scale solid fuel burning devices.

The Commissioners refer to and adopt this reasoning set out above in relation to submission 350 and in relation to these submitters’ submissions on clause (d) ## 03-036 01 00, 350, and ## 03-036 08 00, 310 and 322. No change is recommended and it is recommended that the submissions are rejected.

Recommendation

Reject

Submissions 310, 322.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 7, clause (g) ## 03-036 14 00

310	Pellet Fuels New Zealand Ltd	Change to zero in 2005 so that TSP will reduce sooner.
322	Pellet Fireplaces New Zealand Ltd	Change to zero in 2005 so that TSP will reduce sooner.

ConsiderationSubmissions 310, 322

These submitters sought amendments to assumption (g) to speed up the reduction in TSP.

Laudable though this may be, it would not accurately record ECan's assumptions. The views expressed in relation to paragraphs (d), (e) and (f) immediately above are adopted, ## 03-036 01 00, 350 to ## 03-036 110 00, 310 and 322. No change is recommended, and it is recommended that the submission is rejected.

Recommendation**Reject**

Submissions 310, 322.

Amendment Required

None required.

Explanation and principal reasons - Paragraph 7, clauses (h) and (i) ## 03-036 15 00

128	P. Zegerman	Review the provision when actual data is available, after lowering the number of burners and after open and coal fires have been phased out.
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ConsiderationSubmission 128

Submitter 128 sought that assumption (h) should be reviewed when actual data is available.

There is nothing to stop this occurring. The Commissioners refer to and adopt the views set out in relation to paragraphs (c), (d), (e), (f) and (g) above, ## 03-036 01 00, 350 to ## 03-036 14 00, 310 and 322. No change is recommended, and it is recommended that the submission is rejected.

Recommendation**Reject**

Submission 128.

Amendment Required

None required.