

## Submission on the proposed amendments to the National Environmental Standards for Air Quality

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### 1.0 Introduction

Firstly, I would like to thank the Ministry for the Environment (MfE) for giving me an opportunity to make a submission on the proposed amendments to the air quality standards. With the deadline for full compliance looming and the report cards showing a very mixed bag of results, a review is indeed timely.

The health risks associated with PM<sub>10</sub> exposure are well documented and internationally accepted. I happen to live in Timaru, which is in an airshed that consistently appears amongst the worst offenders in the country for PM<sub>10</sub> pollution levels. From my point of view, what I'm looking for in terms of policy direction is to have measures put in place that will ensure the worst offenders can finally start to make some progress towards achieving a safe and healthy quality of air.

### 2.0 Problem Definition

I don't believe that the problem definition as outlined in the *Terms of Reference for the Ministerial Review (TOR)* addresses the key problem of ensuring that all airsheds are making progress towards achieving compliance.

I do agree however, that the three problems set down in the ToR (to review the permitted number of exceedances, to review the target timeline and to consider the implications for industry) do need looking at.

Ultimately, questions need to be asked around why the timeline to 2013 has not been achievable. If the timeline is going to be relaxed to 2018, then we need to ensure that the reasons for not meeting the 2013 timeline do not hinder the chances of meeting the 2018 timeline. In regards to this, I will cover some reasons for the lack of progress in the Timaru airshed below.

### 3.0 Options Covered

The Technical Advisory Group (TAG) set out a fairly straight forward argument for moving the number of allowable annual exceedances from 1 to 3 and for exempting exceptional events as being counted as exceedances. I am comfortable with both those recommendations being adopted.

The argument for excluding industry doesn't stack up however. The argument that the TAG used goes like this: It is not fair to solely target industry because they generally only produce a small proportion of the emissions, therefore they should be excluded from being penalised. To start with, this argument ignores airsheds like Washdyke, where Environment Canterbury (ECan) estimate industry accounts for more than 80% of emissions<sup>1</sup>.

There are two parts to the rules for industry, pre and post 2013 (or 2018 if the timeline is relaxed).

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<sup>1</sup> <http://www.stuff.co.nz/timaru-herald/news/3491114/Coal-boilers-gain-consent>  
9 July 2010

The pre-timeline rules only exclude industry consents to emit where an airshed is not meeting its curved or straight line path to compliance and the level of emission will result in a significant increase of emissions into the airshed. The 2008 Report on Progress: National Environmental Standards for Air Quality report has a discussion on consents granted for airsheds with straight line paths. Of the 100 consents granted nationally since 2005, not one was deemed to be a significant increase. This included 65 and 5 consents that were granted in the heavily over-allocated Christchurch and Timaru airsheds respectively. Industry has yet to suffer any effects from the pre-timeline rules.

The post-timeline rules exclude all industry consents from being granted for non-complaint airsheds. I agree with the TAG and the ToR that this has put a disproportionate burden on industry. I strongly disagree that industry should be exempt altogether though. I would like to see industry play a role that is in proportion to their emissions. The often quoted example of how New Zealand Dairies Ltd voluntarily offset their emissions at the Studholme Dairy Factory by displacing 36 open fires and inefficient burners in the neighbouring Waimate airshed demonstrates how industry can play a role in emissions reduction.

In summary, for industry the pre-timeline rules aren't working, the post-timeline rules are unfair and so too is the TAG's recommendation to exempt industry altogether. Instead I support requiring industry to offset their emissions both for the pre-timeline airsheds that are not meeting their compliance straight line or curved path (regardless of significance) and for post-timeline airsheds that are not meeting compliance.

The remaining TAG recommendation for discussion is the relaxing of the compliance timeline. I'll cover that in the conclusion. First I'd like to review an airshed that I think will be one of, if not the hardest airshed to bring to compliance.

#### 4.0 The Timaru Airshed

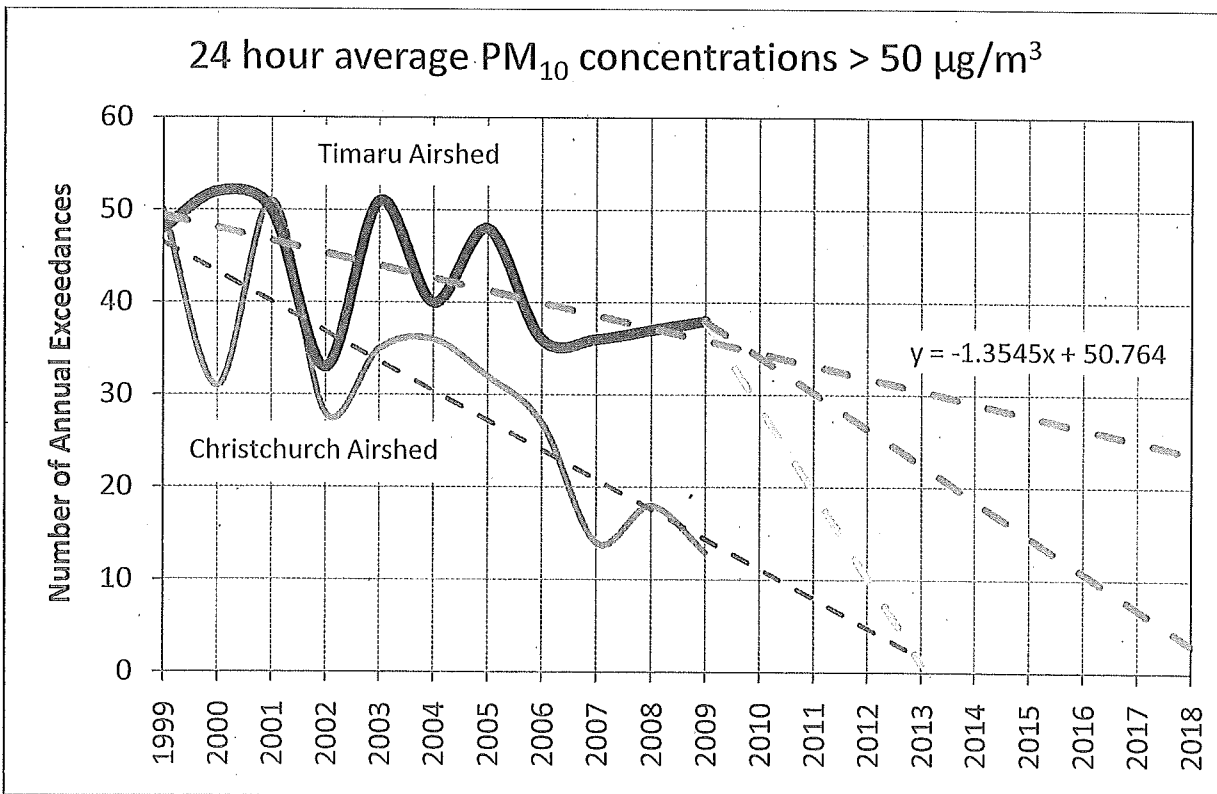


Chart 1: This chart depicts the Number of Annual Exceedances of 24 hour average  $PM_{10}$  concentrations  $> 50 \mu g/m^3$  for the Christchurch and Timaru airsheds. The straight line trend for Christchurch (purple) points to meeting compliance in 2013. Solving the straight line trend for Timaru (blue) where  $y = 3$  gives  $x = 35.3$ , which equates to the year 2034 (which is off the chart). The

yellow line represents Timaru's target path to status quo compliance while the grey line represents Timaru's target path to the proposed compliance.

The straight line trending analysis in Chart 1 depicts stark differences between two of ECan's heavily over allocated airsheds. The analysis includes readings for 2009, which were not made available to the TAG. The trend line for the Christchurch airshed indicates that compliance could possibly be met in 2013 if the airshed can continue to achieve the same consistent rate of reduction. The trend line for Timaru indicates that at its current rate of reduction, compliance is likely to be met in 2034. Timaru's target line to the proposed 2018 timeline is slightly steeper than Christchurch's current trend line. This indicates that Timaru would need to obtain a rate of reduction better than what Christchurch currently has to achieve compliance by 2018. It's still technically possible for Timaru to meet the status quo compliance target of 2013, but it is clear that it won't be achieved without a drastic change in direction.

The annual exceedances in the Timaru airshed have trended upwards for the last three consecutive years. On top of that, 2010 is proving to be another bad year. As at 7 July, there have been 28 high pollution nights recorded for the year in the Timaru airshed. For the last four years (2006-2009) the number of exceedances recorded by 7 July was 22, 16, 25 and 12 respectively<sup>2</sup>.

#### **4.1 ECan's Clean Heat Project**

In terms of reporting high pollution nights, ECan have done a fairly reasonable job, but when it comes to obtaining data on what needs to be done to progress towards compliance there is simply no information available. This means that one has to rely on figures reported by the media, which have proven rather inconsistent.

In July of 2008, an *Otago Daily Times (ODT)* article stated that "ECan estimates Timaru has 6000 to 6500 properties that have an open fire or coal and wood-burning appliance"<sup>3</sup>. Then in November of 2008, an ECan press release quoted their Director of Operations as saying "it is estimated that 5,000 homes in Timaru need to convert to cleaner forms of heating if Timaru is to meet the National Environmental Standards for Air Quality (NES) by 2013"<sup>4</sup>. The ODT article was written at the time that ECan's Clean Heat subsidy was launched in Timaru, with a budget for 280 subsidies for the 2008-2009 financial year.

In May of 2009, the *Timaru Herald* reported that "more than 150 Timaru households have converted their old log burners since the Clean Heat programme began three years ago" and "more than 430 Timaru homes had been assessed for conversion and are awaiting approval"<sup>5</sup>. It then stated that "ECan hopes to have converted more than 3500 Timaru homes by the time the Clean Programme is completed".

In June of 2010, the *Timaru Herald* reported ECan's Regulations Director as saying "more than 300 Timaru households had converted to cleaner forms of heating – such as pellet fires and heat pumps – through the Clean Heat programme since it was introduced to the city in 2007" and that "the regional council has budgeted for more than 1400 conversions in Timaru under the scheme by 2013"<sup>6</sup>.

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<sup>2</sup> Detailed historical data was sourced from the ECan web site in 2009. Following an ECan web site redesign, this data is no longer available for download.

<sup>3</sup> <http://www.odt.co.nz/your-town/timaru/14885/ecan-fires-its-heating-project-timaru>

<sup>4</sup> <http://www.infonews.co.nz/news.cfm?id=5803>

<sup>5</sup> <http://www.stuff.co.nz/timaru-herald/news/2397463/Timaru-air-pollution-records-on-ECan-site>

<sup>6</sup> <http://www.stuff.co.nz/timaru-herald/news/3799954/Clean-air-target-lowered>

The following day, the *Timaru Herald* again reported on ECan's Clean Heat Project stating that "it is likely Timaru's allocation will be extended from 300 to 446<sup>7</sup>". The article also noted that "there have been about 336 conversions under the scheme" and "there would need to be at least 1100 more conversions within the next two years" to achieve compliance. It also stated that "Since Clean Heat began in Timaru in 2007, the number of 'non-complying' burners within Timaru has dropped from 3180 to about 2940" and that "ECan has budgeted for a downturn of 280 a year until 2013".

In reality, it seems that ECan have dropped their targets for Clean Heat conversions from 5,000 in 2008 to 3,500 in 2009 and finally to 1,400 in 2010. The initial budget in 2008 was for 280 conversions and in 2010 the annual budget is still for 280 per year until 2013. A budget for 280 conversions per year over five years results in a total budget for 1,400 conversions. It appears that ECan have annually adjusted their target to meet the allocated budget, as opposed to what they had originally planned to do back in 2008, to annually adjust the budget to meet the target (of 5,000 conversions).

Targets and budgets are one thing, actual conversions are another. The *Timaru Herald* reported that around 336 conversions have been carried out since the Clean Heat scheme started. The *Timaru Herald* have reported various dates for when the Clean Heat scheme was introduced to Timaru, however both the ODT and ECan<sup>8</sup> themselves report that it started in 2008. After running for almost two years, only 336 conversions have been completed. That is around 168 conversions a year which is only 60% of the allocated budget. At a consistent rate over 5 years from 2008 to 2013, this will only result in 840 conversions.

In 2003, Christchurch had an estimated 50,000<sup>9</sup> open fires and mixed fuel burners and a target to convert 26,464<sup>10</sup> of them to cleaner forms of heating by 2013. By July 2007, around 12,000<sup>11</sup> homes had been converted to more efficient forms of heating, which means the scheme is roughly on track for completion in 2013.

The main difference between Christchurch's Clean Heat scheme and that of Timaru is that the Timaru scheme only offers options for subsidies and interest free loans. The Christchurch scheme offers two other options, full assistance (for low income households) and substantial assistance (for people who hold a community services card).

#### **4.2 The Snow Storm of 2006**

The snow storm in June of 2006 caused chaos in South Canterbury by bringing down power poles and overhead electricity lines, which left many people without electricity, in some cases for up to 14 days. As a result, in 2008 when ECan proposed bringing in the Clean Heat scheme, the Timaru District Council (TDC) lobbied ECan to allow households to keep their open fire or inefficient burner as an emergency backup when they had their new form of heating installed<sup>12</sup>. I see this move as being a huge mistake.

Firstly, not all conversions are to electrical forms of heating. Orion Energy's report on the Clean Heat scheme's impact on electricity consumption shows that for Christchurch, 60% of conversions were to a heat pump, while the remaining 40% were to either a wood burner or a pellet fire. Pellet fires require electricity

<sup>7</sup> <http://www.stuff.co.nz/timaru-herald/news/3804730/Heat-subsidy-loss-Timarus-gain-for-2011>

<sup>8</sup> <http://www.crc.govt.nz/news-and-notice/news/pages/ecan-expands-clean-heat-project-timaru.aspx>

<sup>9</sup> <http://www.encyclopedia.com/doc/1P2-12131463.html>

<sup>10</sup> [http://www.ecan.govt.nz/publications/Plans/OCONNELLANDGAUDIN\\_SB07\\_Paper496.pdf](http://www.ecan.govt.nz/publications/Plans/OCONNELLANDGAUDIN_SB07_Paper496.pdf)

<sup>11</sup> [http://www.oriongroup.co.nz/downloads/Clean\\_Heat\\_electricity\\_report\\_Nov09.pdf](http://www.oriongroup.co.nz/downloads/Clean_Heat_electricity_report_Nov09.pdf)

<sup>12</sup> <http://www.stuff.co.nz/timaru-herald/406340>

to run a small convection fan, although there is no reason why the fan can't be hooked up to a battery back up at an economical price.

Secondly, a large portion of the Timaru Township is fed by underground reticulated cable. The bulk of which, was unaffected in terms of electricity supply during to the snow storm.

Finally, other than asking the home owner to sign a form stating that they will only use the open fire or inefficient burner during an emergency, there are no other measures in place to ensure that the fires aren't used. Even worse, where the home owner has signed a document to retain the fire or inefficient burner, they may feel that they have a legal privilege that supersedes any future ban that may be placed on it.

#### **4.3 The Population Age Profile**

Timaru has a population age profile heavily skewed towards the elderly. At the 2006 census, 18.3% of the population of the Timaru District were the age of 65 years or over. This compares to 12.3% nationally.

An aging population not only has less disposable income but also suffers the most from the effects relating to poor air quality. Also, they are vulnerable in terms of having change forced on them. I have experienced this first hand. My Grandmother had to move to a smaller home as she aged and became less mobile. The shift was a big change for her but by far the biggest anxiety came from losing her fire and having to come to terms with a heat pump. Ultimately she developed depression from which she never recovered.

#### **5.0 Conclusion - The Key Steps to Compliance**

I have enjoyed reading through the Discussion Document along with all the related material. Lining that up against the example of the Timaru airshed has crystallised in my mind what I see as being some of the key steps to achieving not just compliance, but quality and healthy air.

##### **5.1 Education and Developing Buy In**

This is paramount. There is a very real lack of understanding as to how harmful air pollution can be. There is also a lack of understanding as to how easy it is to fix the problem. Unlike breast and prostate cancer (to which the number of related deaths each year is comparable), you can beat air pollution with money.

##### **5.2 Measure**

The Discussion Document mentions that the Temuka airshed is not likely to meet compliance. Firstly, there is no way to tell if it's compliant if no measurements are taken and secondly if it's not compliant then without a history of data it will be impossible to determine whether it's trending towards compliance and at what rate.

##### **5.3 Clear Plan for Compliance**

If we have the buy in, then attaining compliance is not a matter of if but when. There are airsheds that are well managed and on the path to compliance or already compliant. Then there are airsheds like Timaru. Timaru will continue to stand out as a poor performer while there is no clear and concise plan in place. Year on year the targeted number of conversions have been reduced while compliance has got further and further away.

##### **5.4 Targeted Conversions**

Christchurch has shown phenomenal progress when you look at where they started and what they have managed to achieve so far. I expect that a large part of their success is due to the full and substantial packages that they offer, where households are either fully or heavily subsidised. I would urge both local and central government to consider similar funding packages for all over allocated airsheds.

### **5.5 Phase out Open Fires and Ban Coal for Domestic Use**

Open fires are inefficient and unhealthy. They have no place in an urban setting and should be phased out.

In 2009 *The Southland Times* reported on the release of an Environment Southland-commissioned air quality management report, which argued that “banning coal would be most effective in reducing PM<sub>10</sub>, combined with banning outdoor and open fires and the mandatory replacement of non-compliant solid-fuel burner”<sup>13</sup>.

### **5.5 Adequate Funding**

The Timaru airshed seems to have a target that follows the funding. It’s vitally important that the target precedes the funding and that adequate funding is made available to achieve the target.

### **5.7 A Final Word**

This submission has been geared towards taking a pragmatic approach to achieving compliance. Looking at the Timaru example, the Discussion Document identifies the forming of a working group between ECan and the TDC as being part of the plan to achieve compliance. The TDC have historically staunchly supported relaxing targets towards compliance and removing industry’s role in achieving compliance.

The most significant decision that the government needs to make regarding the proposed changes to the air quality standards is around deciding what timeline will be used to target compliance by. Following that, the government needs to put measures in place to ensure that all airsheds are working towards the compliance target. It would be extremely disappointing if the target was relaxed to 2018, only for a review in another five years to find that some airsheds have still made little or no progress towards achieving compliance.

For the Timaru airshed I personally support extending the timeline to 2018 if and only if measures are put in place to ensure the airshed makes a real effort to move towards compliance. As it currently stands, I can’t see either ECan or the TDC championing those efforts without strong leadership coming from central government.

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<sup>13</sup> <http://www.stuff.co.nz/southland-times/news/3121375/Coal-fire-ban-may-clear-air-report>  
9 July 2010