

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an appeal under Clause 14 of the
First Schedule to the Act

BETWEEN SOLID ENERGY NEW ZEALAND
LIMITED

(ENV-2007-CHC-272)

(Topic: ENV-2007-308-050)

Appellant

AND CANTERBURY REGIONAL
COUNCIL

Respondent

BEFORE THE ENVIRONMENT COURT

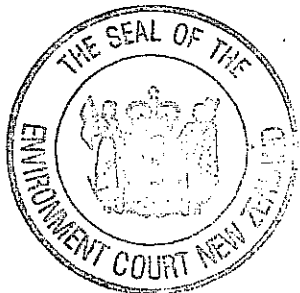
Environment Judge J E Borthwick sitting alone under section 279 of the Act

In Chambers at Christchurch

CONSENT ORDER

Introduction

- [1] The Court has read and considered the appeal, the respondent's reply, and the memorandum of the parties received on or about 31 March 2009.
- [2] Horticulture New Zealand has given notice of an intention to become a party under s274 and has signed the memorandum setting out the relief sought.



[3] The Court is making this order under s279(1)(b) of the Act, such order being by consent, rather than representing a decision or determination on the merits pursuant to section 297. The Court understands for present purposes that:

- (a) All parties to the proceedings have executed the memorandum requesting this order;
- (b) All parties are satisfied that all matters proposed for the Court's endorsement fall within the Court's jurisdiction, and conform to relevant requirements and objectives of the Resource Management Act, including in particular Part 2.

Order

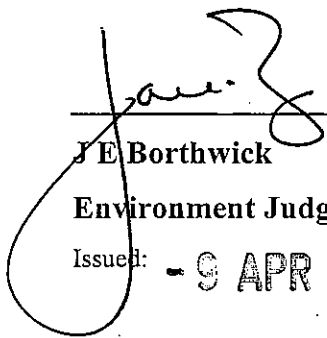
[4] Therefore the Court orders, by consent, that the appeal is allowed to the extent that the Canterbury Regional Council is directed to modify Chapter 3 of the Proposed Canterbury Natural Resources Regional Plan as set out in **Appendix One** attached to and forming part of this consent order.

[5] The appeal, as it relates to topic ENV-2008-308-050 (*Large Scale Fuel Burning Devices - Treatment of Pellet Fires and Sulphur Content of Fuel*) is otherwise dismissed.

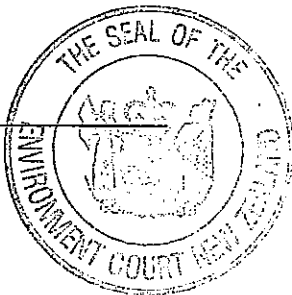
[6] There is no order for costs.

DATED at CHRISTCHURCH

9th April 2008.


J E Borthwick
Environment Judge

Issued: - 9 APR 2009



Appendix One: Changes to Chapters 1 and 3 of the Proposed Canterbury Natural Resources Regional Plan

Chapter 1

1. Large scale wood pellet burning device

Add to 1.2.2 Definition of terms the following new definition:

Large scale wood pellet burning device is a large scale fuel burning device which is designed to burn only wood pellet fuel or converted to burn only wood pellet fuel

2. Wood pellet fuel

Add to 1.2.2 Definition of terms the following new definition:

Wood pellet fuel means pellets made from wood shavings or sawdust bonded together by the wood's natural resins through the process of pelletisation, creating individual pellets of between 6mm and 8mm in diameter and a maximum length of 38mm.



Chapter 3

3. Table 3.1 Summary of Rules

a. Amend Table 3.1 Summary of Rules by adding after Rule AQL18

<u>Christchurch Clean Air Zones 1 and 2</u>	<u>AQL18B</u>	<u>Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 40 kw and less than or equal to 500 kw with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 40 kw and less than or equal to 500 kw in the Christchurch Clean Air Zones 1 and 2</u>	<u>Controlled</u>
	<u>AQL18C</u>	<u>Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 500 kw and less than or equal to 1MW with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 500 kw and less than or equal to 1MW in the Christchurch Clean Air Zones 1 and 2</u>	<u>Restricted discretionary</u>
	<u>AQL18D</u>	<u>New large scale wood pellet burning devices with a combined heat output of less than or equal to 500 kw, or large scale wood pellet burning devices with a combined heat output of less than or equal to 500 kw replacing existing large scale fuel burning devices not burning solid fuel, in the Christchurch Clean Air Zones 1 and 2</u>	<u>Restricted discretionary</u>

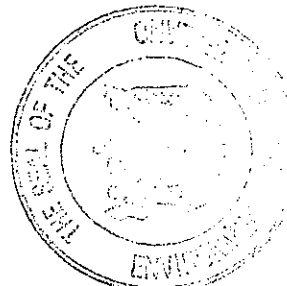


4. Rule AQL18B

Add Rule AQL18B – controlled activity as follows:

Rule AQL18B Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 40 kw and less than or equal to 500 kw with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 40 kw and less than or equal to 500 kw in the Christchurch Clean Air Zones 1 and 2 – controlled activity

Activity	Standards / Terms	Restriction of Discretion	Cross Ref.
<p>Notwithstanding Rules AQL18, AQL18A and 18D, and except where prohibited by Rule AQL12, the discharge of contaminants into air from burning of wood pellet fuel in the Christchurch Clean Air Zones 1 and 2 in any large scale wood pellet burning devices having a net combined heat output capacity within one property of greater than 40 kilowatts and less than or equal to 500 kilowatts is a controlled activity.</p>	<ol style="list-style-type: none"> Any discharge to air from a large scale wood pellet burning device shall be in replacement of discharges to air from a large scale fuel burning device burning solid fuel of the same or greater heat output capacity which was legally established and operating up to the time of replacement. Any discharge of contaminant into air shall not be of a greater rate or quantum than which could have been lawfully discharged on 1 September 2008. The concentration of total suspended particulate in combustion gas discharged from all emission stack(s), measured according to the requirements described in Schedule AQL6, shall not exceed 125 milligrams per cubic metre of air adjusted to 0 Celsius, dry gas basis, 101.3 kilopascals, and 8% oxygen or 12% carbon dioxide. The discharge into air shall occur via an emission stack at a height of at least 7 metres above ground level and at least 3 metres above the 	<p>Environment Canterbury will reserve control over the following matters in imposing any conditions:</p> <ol style="list-style-type: none"> Localised adverse effects from the discharge of contaminants to air relating to odour, suspended particulate and deposited particulate The extent to which the best practicable option in relation to the concentration of total suspended particulate in combustion gas discharged is or should be adopted to prevent or minimise localised adverse effects and adverse effects on ambient air quality. The fuel burning rate. Any measures necessary to ensure the ability of the equipment to disperse contaminants, including chimney height, chimney design and emission velocity. Any steps to be taken to ensure maintenance of the fuel-burning equipment. Carrying out of measurements, samples, analyses, surveys, investigations, or inspection, including: 	



Activity	Standards / Terms	Restriction of Discretion	Cross Ref.
	<p>ridge line of the roof of any building, land or other substantial structure within a distance of five times the height of that building, land or structure.</p> <p>5. <u>The discharge shall be directed vertically into air and shall not be impeded by any obstruction above the stack which decreases the vertical efflux velocity, below that which would occur in the absence of such obstruction.</u></p> <p>6. <u>The discharge shall only be a result of the combustion of wood pellet fuel meeting the criteria in AS/NZS 4014:6:2007 (except that pellets may be made from wood sawdust or wood shavings containing a minor or incidental amount of antiseptain chemicals).</u></p> <p>7. <u>The opacity of the discharge at the emission exit shall not be darker than Ringelmann Shade No. 1, as described in New Zealand Standard 5201:1973, except:</u></p> <p>(a) <u>in the case of a cold start for a period not exceeding 30 minutes in operation; and</u></p> <p>(b) <u>for a period not exceeding a total of four minutes in each succeeding hour of operation.</u></p>	<p>(a) <u>monitoring contaminant concentrations;</u></p> <p>(b) <u>monitoring the opacity of the discharge;</u></p> <p>(c) <u>recording of the quantity of fuel used;</u></p> <p>(d) <u>monitoring the emission rate of contaminants; and</u></p> <p>(e) <u>analysing the cumulative effects of the discharge, in combination with discharges from other sources.</u></p> <p>7. <u>Provisions of information to the consent authority at specified times.</u></p> <p>8. <u>Compliance with monitoring, sampling and analysis conditions at the consent holder's expense.</u></p> <p>9. <u>Duration of consent.</u></p> <p>10. <u>Review of conditions of consent and the timing and purpose of the review.</u></p> <p>Notification</p> <p><u>In accordance with section 94D(2), an application for resource consent required by this rule does not need to be notified, and in accordance with section 94D(3), notice of such an application does not need to be served.</u></p>	



5. Rule 18C

Add Rule AQL18C Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 500 kw to 1MW or less with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 500 kw to 1MW or less in the Christchurch Clean Air Zones 1 and 2 – restricted discretionary activity as follows:

Rule AQL18C Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 500 kw and less than or equal to 1MW with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 500 kw and less than or equal to 1MW in the Christchurch Clean Air Zones 1 and 2 – restricted discretionary activity

Activity	Standards / Terms	Restriction of Discretion	Cross Ref.
<p>Notwithstanding Rules AQL18, AQL18A and 18D, and except where prohibited by Rule AQL12, the discharge of contaminants into air from burning of wood pellet fuel in the Christchurch Clean Air Zones 1 and 2 in any large scale wood pellet burning devices having a net combined heat output capacity within one property of greater than 500 kilowatt and less than or equal to 1megawatt is a restricted discretionary activity.</p>	<p>1. Any discharge to air from a large scale wood pellet burning device shall be in replacement of discharges to air from a large scale fuel burning device burning solid fuel of the same or greater heat output capacity which was legally established and operating up to the time of replacement.</p> <p>2. Any discharge of contaminant into air shall not be of a greater rate or quantum than which could have been lawfully discharged on 1 September 2008.</p> <p>3. The concentration of total suspended particulate in combustion gas discharged from all emission stack(s), measured according to the requirements described in Schedule AQL6, shall not exceed 125 milligrams per cubic metre of air adjusted to 0 Celsius, dry gas basis, 101.3 kilopascals, and 8% oxygen or 12% carbon dioxide.</p>	<p>Environment Canterbury's discretion is restricted to the following matters:</p> <ol style="list-style-type: none"> 1. Localised adverse effects from the discharge of contaminants to air relating to odour, suspended particulate and deposited particulate 2. The extent to which the best practicable option in relation to the concentration of total suspended particulate in combustion gas discharged is or should be adopted to prevent or minimise localised adverse effects and adverse effects on ambient air quality. 3. The fuel burning rate. 4. Any measures necessary to ensure the ability of the equipment to disperse contaminants, including chimney height, chimney design and emission velocity. 5. Any steps to be taken to ensure maintenance of the fuel-burning equipment. 	



Activity

Standards / Terms

Restriction of Discretion

Cross Ref.

4. The discharge into air shall occur via a emission stack at a height of at least 7 metres above ground level and at least 3 metres above the ridge line of the roof of any building, land or other substantial structure within a distance of five times the height of that building, land or structure.

5. The discharge shall be directed vertically into air and shall not be impeded by any obstruction above the stack which decreases the vertical efflux velocity, below that which would occur in the absence of such obstruction.

6. The discharge shall only be a result of the combustion of wood pellet fuel meeting the criteria in AS/NZS 4014:6:2007 (except that pellets may be made from wood sawdust or wood shavings containing a minor or incidental amount of antiseptain chemicals).

7. The opacity of the discharge at the emission exit shall not be darker than Ringelmann Shade No. 1, as described in New Zealand Standard 5201:1973, except:

(a) in the case of a cold start for a period not exceeding 30 minutes in operation; and

(b) for a period not exceeding a total of four minutes in each succeeding hour of operation.

6. Carrying out of measurements, samples, analyses, surveys, investigations, or inspection, including:

(a) monitoring contaminant concentrations;

(b) monitoring the opacity of the discharge;

(c) recording of the quantity of fuel used;

(d) monitoring the emission rate of contaminants; and

(e) analysing the cumulative effects of the discharge, in combination with discharges from other sources.

7. Provisions of information to the consent authority at specified times.

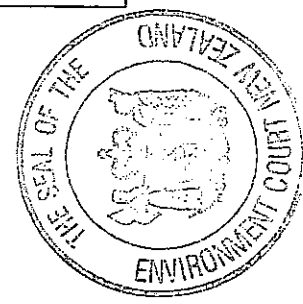
8. Compliance with monitoring, sampling and analysis conditions at the consent holder's expense.

9. Duration of consent.

10. Review of conditions of consent and the timing and purpose of the review.

Notification

In accordance with section 94D(2), an application for resource consent required by this rule does not need to be notified.

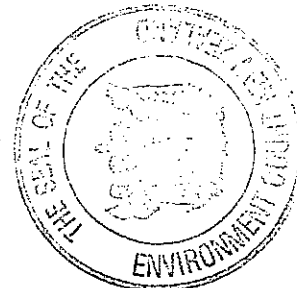


6. Rule AQL18D

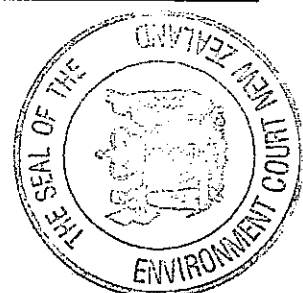
Add Rule AQL18D – restricted discretionary as follows:

Rule AQL18D New large scale wood pellet burning devices with a combined heat output of less than or equal to 500 kw, or large scale wood pellet burning devices with a combined heat output of less than or equal to 500 kw replacing existing large scale fuel burning devices not burning solid fuel, in the Christchurch Clean Air Zones 1 and 2 – restricted discretionary activity

<u>Activity</u>	<u>Standards/Terms</u>	<u>Restriction of discretion</u>	<u>Cross Ref.</u>
<p>Notwithstanding Rule AQL18 and AQL18A, except where subject to Rules AQL18B and AQL18C, and except where prohibited by Rule AQL12, the discharge of contaminants into air from burning of wood pellet fuel in the Christchurch Clean Air Zones 1 and 2 in any large scale wood pellet burning devices having a net combined heat output capacity within one property of less than or equal to 500 kilowatt is a restricted discretionary activity.</p>	<ol style="list-style-type: none"> 1. The concentration of total suspended particulate in combustion gas discharged from all emission stack(s), measured according to the requirements described in Schedule AQL6, shall not exceed 72 milligrams per cubic metre of air adjusted to 0 Celsius, dry gas basis, 101.3 kilopascals, and 8% oxygen or 12% carbon dioxide. 2. The discharge into air shall occur via a emission stack at a height of at least 7 metres above ground level and at least 3 metres above the ridge line of the roof of any building, land or other substantial structure within a distance of five times the height of that building, land or structure. 3. The discharge shall be directed vertically into air and shall not be impeded by any obstruction above the stack which decreases the vertical efflux velocity, below that which would occur in the absence of such obstruction. 4. The discharge shall only be a result of the combustion of wood pellet fuel meeting the criteria in AS/NZS 4014:6:2007 (except that pellets may be 	<p>Environment Canterbury's discretion is restricted to the following matters:</p> <ol style="list-style-type: none"> 1. In the context of Policy AQL19, existing and predicted PM₁₀ ambient air quality, including the achievement of any relevant national environment standard. 2. Localised adverse effects from the discharge of contaminants to air relating to odour, suspended particulate and deposited particulate 3. The extent to which the best practicable option in relation to the concentration of total suspended particulate in combustion gas discharged is or should be adopted to prevent or minimise localised adverse effects and adverse effects on ambient air quality. 4. Any offset of the PM₁₀ emissions related to the large scale wood pellet burning device. 5. The number of the large scale wood pellet burning devices sought to be authorised in relation to the projected demand over the next 24-month period for the installation of that type of device or the equivalent to ten 300 kilowatt large scale wood pellet burning devices, whichever is the 	



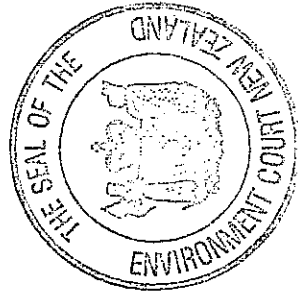
Activity	Standards/Terms	Restriction of discretion	Cross Ref.
	<p>made from wood sawdust or wood shavings containing a minor or incidental amount of antiseptain chemicals).</p> <p>5. The opacity of the discharge at the emission exit shall not be darker than Ringelmann Shade No. 1, as described in New Zealand Standard 5201:1973, except:</p> <p>(a) in the case of a cold start for a period not exceeding 30 minutes in operation, and</p> <p>(b) for a period not exceeding a total of four minutes in each succeeding hour of operation.</p>	<p>greatest.</p> <p>6. The fuel burning rate.</p> <p>7. Any measures necessary to ensure the ability of the equipment to disperse contaminants, including chimney height, chimney design and emission velocity.</p> <p>8. Any steps to be taken to ensure maintenance of the fuel-burning equipment.</p> <p>9. Carrying out of measurements, samples, analyses, surveys, investigations, or inspection, including:</p> <p>(a) monitoring contaminant concentrations;</p> <p>(b) monitoring the opacity of the discharge;</p> <p>(c) recording of the quantity of fuel used;</p> <p>(d) monitoring the emission rate of contaminants; and</p> <p>(e) analysing the cumulative effects of the discharge, in combination with discharges from other sources.</p> <p>10. Provisions of information to the consent authority at specified times.</p> <p>11. Compliance with monitoring, sampling and analysis conditions at the consent holder's expense.</p> <p>12. Duration of consent.</p> <p>13. Review of conditions of consent and the timing and purpose of the review.</p> <p>Notification</p> <p>In accordance with section 94D(2), an application for resource</p>	



<u>Activity</u>	<u>Standards/Terms</u>	<u>Restriction of discretion</u>	<u>Cross Ref.</u>
		<p>consent required by this rule does not need to be notified, and in accordance with section 94D(3), notice of such an application does not need to be served if the application is for more than one large scale wood pellet burning device located on more than one property at yet to be determined locations.</p>	

7. Explanation to Rule AQL18

Amend 3.5.9.2 Regional rules for discharges to air from large scale fuel burning devices as follows:



Rule AQL18 Large scale fuel burning devices burning solid fuel with a combined heat output 1 MW or less in the Christchurch Clean Air Zones 1 and 2 – discretionary activity

Rule AQL18B Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 40 kw and less than or equal to 500 kw with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 40 kw and less than or equal to 500 kw in the Christchurch Clean Air Zones 1 and 2 – controlled activity

Rule AQL18C Replacement of existing large scale fuel burning devices burning solid fuel with a combined heat output of greater than 500 kw and less than or equal to 1MW with large scale wood pellet burning devices burning wood pellet fuel with a combined heat output of greater than 500 kw and less than or equal to 1MW in the Christchurch Clean Air Zones 1 and 2 – restricted discretionary activity

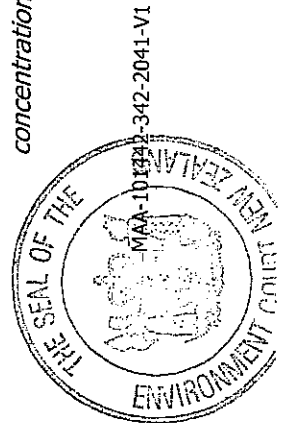
Rule AQL18D New large scale wood pellet burning devices with a combined heat output of less than or equal to 500 kw, or large scale wood pellet burning devices with a combined heat output of less than or equal to 500 kw replacing existing large scale fuel burning devices not burning solid fuel, in the Christchurch Clean Air Zones 1 and 2 – restricted discretionary activity

Rule AQL19 Large scale fuel burning devices burning solid fuel with a combined heat output greater than 1 MW in the Christchurch Clean Air Zones 1 and 2 – discretionary activity

Coal and wood burning boilers and heaters are the primary sources of particulate matter discharged from the industrial and commercial sector. Solid fuel burning is estimated to contribute approximately 92% of the PM₁₀ emissions from this sector in Christchurch. The amount of particulate matter discharged varies according to the design and operation of each appliance and the type of fuel used. Emission factors for coal and wood boilers of similar design to those used in Christchurch indicate that particulate emission rates (per kilogram of fuel burned) are in the order of 20 times the rate from diesel oil boilers.

Economic analyses indicate that fuel use by this sector is likely to increase during the life of the plan. While the contribution from this sector to ambient PM₁₀ concentrations in winter is estimated to be only approximately 8% at present, this contribution will increase in the future if emission control measures are not implemented. Because the NRRP is expected to achieve a marked reduction in emissions from the domestic sector, the proportional impact of industrial and trade emission sources will increase in the future.

The most simple and cost-effective method of reducing industrial particulate emissions is to generally require compliance with a particulate emission concentration limit of 250 mg/m³ ISP. Emission testing indicates that the majority of existing large scale fuel burning devices burning solid fuel



appliances in Christchurch can comply with this standard. All new large scale solid fuel burning equipment is expected to be able to comply with the standard.

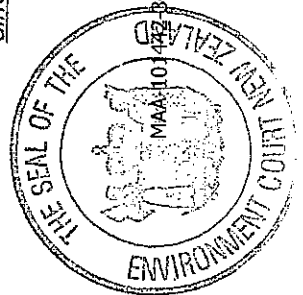
A cost-benefit analysis has been carried out for the rules controlling large scale solid fuel burning equipment. The analysis compares the costs of compliance with the 250 mg/m³ TSP emission standard with the predicted costs of the proposed domestic rules. The results indicate that the cost-effectiveness of the large scale solid fuel burning rules for large appliances (capacity more than 1 MW) is similar to the cost-effectiveness of the rules requiring upgrading of existing domestic wood burners after 15 years.

The cost-benefit analysis indicates that the cost effectiveness of rules for smaller industrial appliances (less than 1 MW in capacity) is less than that predicted for the larger appliances. This is because of the high cost of emission testing of numerous small appliances and the relatively small emissions reductions achieved. Evidence suggests that the majority of these smaller appliances are already able to comply with the 250 mg/m³ TSP emission standard. Emission testing of these smaller appliances will therefore only be required once every five years. Existing small appliances will not be required to comply with the emission standard until 1 January 2015. It is expected that most existing appliances will have exceeded their useful economic life by this date. This approach ensures that existing and new appliances are treated fairly by preventing long-term operation of poorly performing existing appliances.

The suggested 250 mg/m³ TSP limit is considered to be the best practicable option with regard to the emissions reductions required to meet the target, the financial costs involved and the ability to successfully implement controls. Compliance with this limit, combined with promotion of energy efficiency improvements and cleaner fuels, is expected to be able to control emissions from this sector so that the air quality target for PM₁₀ can be achieved and maintained.

Small (less than or equal to 1MW) large scale wood pellet fuel burning devices are able to achieve significantly less particulate emissions, in part because of the wood pellet fuel burned. Where such large scale wood pellet burning devices are replacing existing large scale fuel burning devices combusting solid fuel, a minimum emission standard of 125 mg/m³ TSP is currently readily achievable. Further, where large scale wood pellet fuel burning devices are purpose built and have a heat output of less than 500 kilowatt a minimum emission standard of 72mg/m³ TSP is current readily achievable. In the future, less particulate emission may be achievable, and become the best practical option technology. As this occurs, it is expected that devices considered in resource consent application processes will be subject to tighter emission standards. Rules AQL18B to AQL18D recognise and provide for this less emitting technology.

The change in resource consent application activity status for replacement large scale wood pellet fuel burning devices for those 500 kw or less, and those between 500kw and 1MW, reflects the increased potential for the larger devices to create localised adverse effects on air quality, resulting in different resource consent application outcomes.



It is possible that under Rule AQL18D a resource consent application may be made for more than one large scale wood pellet burning device located on more than one property at yet to be determined locations (a global resource consent application). The rule anticipates this may occur. Any such resource consent application will need to demonstrate that localised adverse effects and adverse effects on ambient air quality can be appropriately controlled at any property the resource consent may be exercised upon. In addition, it is important to ensure that a short term 'allocative' approach is taken to the authorisation of emissions from these large scale wood pellet burning devices. This is necessary in order to carefully manage the overall achievement of Objective AQL3 and Regulations 17, 17A, 17C and 18 of the Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004. Such a short-term allocative approach is the most effective and efficient way of controlling cumulative effects of individual resource consents and managing uncertainty.

