

**Submission NZTS Reporting Requirements**

Websters Hydrated Lime Co Ltd manufactures burnt and hydrated lime as well as a range of limestone products earning annual revenue of over \$3.5 million and employing 12 people full time (not counting indirect employment of contractors. We face potential competition from imported burnt lime and hydrated lime that is manufactured in countries that do no tax CO<sub>2</sub> emissions. Because this competition would severely affect our business (and perhaps close it) we will be seeking free allocation of NZ Units on par with McDonalds Lime and Perry Lime, the other two burnt lime manufacturers.

I wish to forward for your consideration points that need to be given a fair hearing before systems are set in place.

**Point #1 Reabsorption of CO<sub>2</sub>**

We need two factors to be considered in relation to the reabsorption of CO<sub>2</sub> by burnt and hydrated lime. First, the current calculation formula needs to include a factor that estimates the portion of CO<sub>2</sub> reabsorbed by the time the product is sold. Second, the 2006 IPCC Guidelines recognise that countries may prove that some of the burnt or hydrated lime reabsorbs a significant proportion of the CO<sub>2</sub> produced when the lime was calcinated. We believe that we will eventually be able to show that a high proportion (perhaps even 100%) of our lime products reabsorb CO<sub>2</sub> equivalent to their calcination emissions within a few months in some case and a few years in others. The regulations on removals should be written to prepare for this situation. Here are some examples of the information we will draw together in a research report.

After the process of calcination ( $\text{CaCO}_3 + \text{Heat} - \text{CO}_2 = \text{CaO} = \text{Burnt Lime}$ ) has taken place (Websters 950 degrees C) the burnt lime starts to reabsorb Co<sub>2</sub> after cooling below 835 degrees C ( $\text{CaO} + \text{Co}_2 + \text{CaCO}_3$  Limestone). The rate of Co<sub>2</sub> absorption is slower in burnt lime than it is after the Hydration process has taken place ( $\text{CaO} + \text{H}_2\text{O} = \text{CaCO}_3$ ) this is mainly due to the fineness of the calcium hydroxide particles. Most burnt lime is hydrated within its life; most hydrated lime is exposed to Co<sub>2</sub> as it is used.

- (1a) Water with high Co<sub>2</sub> levels is treated with Hydrated lime to reduce the Co<sub>2</sub> in it. This stops corrosion within copper pipes and seals the inside of them with the limestone that is produced ( $\text{Co}_2 + \text{Ca(OH)}_2 = \text{CaCO}_3$ )

Absorption of free Co<sub>2</sub> from water at one water treatment plant.

Water used per day: 180 million litres

Average of 3 plants free Co<sub>2</sub> 21.366mg/l

Average of 3 plants Hydrated Lime 47.66gm/l

- (1b) Hydrated lime is used in controlled atmosphere storage and cartage of export fruit to keep it crisp and fresh by reabsorption of Co<sub>2</sub> from the storage air.

( $\text{Ca(OH)}_2 + \text{Co}_2 = \text{CaCO}_3$ ). The figures from one cool store:

|          |                 |                                     |
|----------|-----------------|-------------------------------------|
| The sum: | 410             | bins Fruit                          |
|          | <u>x450kgs</u>  | fruit per bin                       |
|          | 184500kgs       | fruit per room                      |
|          | <u>/2000kgs</u> | Ca(OH) <sub>2</sub> lime per room   |
|          | =92.25kgs       | of fruit per kg Ca(OH) <sub>2</sub> |

\*1000kg of Ca(OH)<sub>2</sub> will absorb 770kg of Co<sub>2</sub> over 3/4 months.

**Point #2 MgO**