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**Submission to the Ministry for the Environment on “New Zealand Emissions Trading Scheme Review 2015/2016”**

Horticulture New Zealand, along with Tomatoes New Zealand and Vegetables NZ Inc. welcome the opportunity to provide a submission to the Ministry for the Environment on the NZETS review. HortNZ and TNZ recognise that changes are required to reflect recent international climate change negotiations.

Horticulture New Zealand (HortNZ) represents the interests of New Zealand’s 5,600 commercial fruit and vegetable growers. The horticulture industry is valued at over \$6 billion annually to the New Zealand economy.

Tomatoes New Zealand Inc. (TNZ) is the national organisation representing New Zealand’s 150 fresh tomato growers, almost all of whom grow in greenhouses. The fresh tomato industry has an annual farm gate value of \$100m.

Vegetables NZ Inc. (VNZI) is the national organisation representing 950 fresh vegetable growers (total gate sale value \$340m) including 128 greenhouse growers who produce domestic and export sales of over \$140m

HortNZ, TNZ and VNZI made a submission to the February review of Priority Issues, covering:

1. Moving to full surrender obligations
2. Managing the costs of moving to full surrender obligations

This submission covers the other review issues, namely:

1. Business responses to the NZ ETS
2. Protecting competitiveness through free allocation
3. Managing unit supply, including issues relating to international units and selling NZU’s by auction
4. Managing price stability
5. Operational and technical matters
6. Addressing barriers for uptake of low emissions technologies.

Questions from the two technical notes (Forestry, and Operational Matters) have not been addressed in this submission, as they are not relevant to commercial growers of fruit and vegetables.

## Executive summary- key points

Considerations that need to be taken into account when deciding on the structure of the NZETS from a horticultural perspective

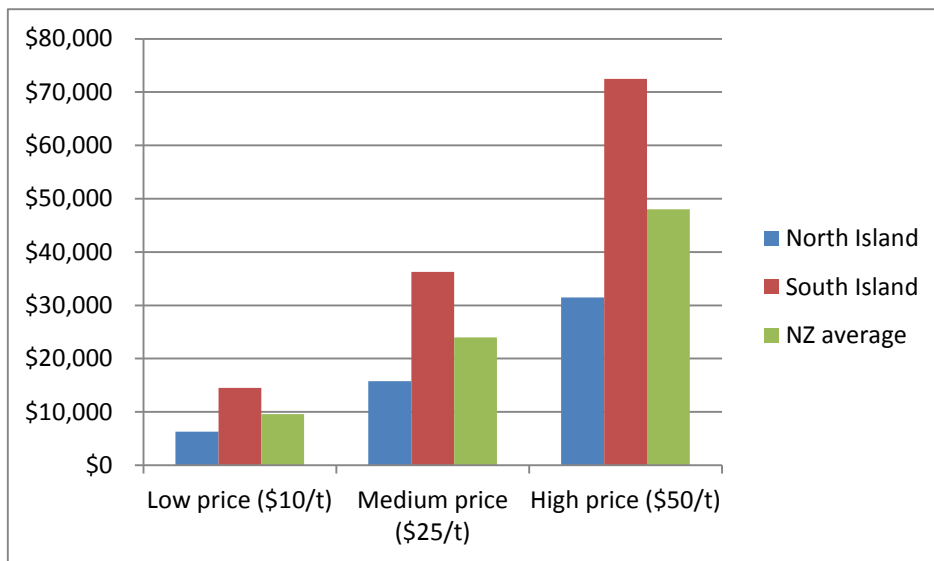
- Growers do not have the ability to pass on any ETS cost increase on a “cost plus” basis to their customers.
- Growers report that if carbon costs rise significantly, they will not invest in replacing aging greenhouses;
- This could lead to a demise of domestic production where growers find they are unable to pass rising ETS costs on;
- The lack of options, cost and practicality of covered crops growers moving to biofuels and the security of supply of these biofuels;
- The ability to achieve government goals of doubling primary sector exports in New Zealand whilst competing with countries that have not imposed a cost of carbon on exporters
- The ability to administer and understand the system and the willingness of brokers to deal with small parcels of credits, (an efficient aggregation and brokering process is needed).

## BACKGROUND

The costs of energy incurred by horticultural businesses includes direct energy costs as well as those indirect costs passed on to them through the price of the inputs they purchase (packaging, fertiliser, machinery etc.), and any costs passed to them by post-harvest operators such as pack houses, cool stores, and freight companies.

For the greenhouse vegetable industry, including fresh tomatoes, capsicums and cucumbers, energy is the second highest single input cost in greenhouse expenses following closely behind wages. In climate controlled greenhouses (excluding those that either do not heat or only have frost control) energy costs are greater than 20% of expenses, or between 15% and 18% of revenue. Therefore they are highly vulnerable to rising energy costs and additional energy related taxes. Because the vast majority of fruit and vegetable growers sell in a commodity market, neither the direct nor indirect costs can be passed on to the consumers of the produce, instead incurring a direct net loss to the business. Figure 1 shows the total ETS costs per hectare (excluding the 2-for-1 transition measure) for North and South Island growers at three different carbon prices. Growers do not have the ability to pass on any ETS cost increase on a “cost plus” basis to their customers.

Figure 1: Carbon costs per hectare of greenhouse, without transition measures



As such they have been recognised under the EITE (Emissions Intensive Trade Exposed) scheme with free allocations. HortNZ, TNZ and VNZI are encouraged to see that the discussion document states that ‘The government supports keeping the free allocation regime in place until at least 2020’<sup>1</sup>. For the reasons explained below, the cost of carbon to many indoor growers is impossible to pass on to consumers, and will have negative consequences on the availability of New Zealand grown vegetables.

Horticulture is a commodity based business, being price takers rather than cost plus. The horticulture industry in New Zealand operates in a global market with over 60% of our production exported and we face strong competition here in New Zealand from imports from Asia particularly for processed products such as frozen vegetables and canned fruit and vegetables. Greenhouse growers face direct competition with Australian product, both on the New Zealand domestic market and in the Australian market, and with product from many other countries in Asian markets.

There has been considerable talk about the ability to switch fuel sources, in particular among South Island greenhouse vegetable producers with coal boilers and the idea that they could convert to wood fuel, or perhaps waste oil. While some growers have converted, it is not an industry wide solution. For many growers the logistics of stockpiling the quantity of wood required, transporting a bulky low energy density product, resource consent requirements for storage facilities and the scarcity and inconsistency of supply precludes this as a viable option for most. The capital cost of conversion to alternative fuels is high, particularly for small and medium sized operations. In most cases there is no commercially viable alternative.

Greenhouse growers are delaying future investment in New Zealand until there is some determination as to the future of the ETS. This is not just a South Island phenomenon, as there has been little significant investment in new vegetable greenhouse production facilities in the whole of New Zealand in the last few years, and the total area of covered vegetable production has remained stable in the past five years other than one capsicum grower who has invested in expanding their production for anticipated increased exports.

<sup>1</sup> Page 3, section 1.

Because there has been little re-investment in replacement of existing greenhouses during the past 10 years, most will approach the end of their efficient productive lifespans in the next 5 -10 years. Growers in both islands report that they are unlikely to reinvest in new production facilities if ETS costs continue to rise to a point that makes production un-economic.

With no new production area, increasing domestic food demand will likely be met by imports from countries with significantly higher greenhouse gas emitting production systems. The uncertain future of the ETS and the scarcity of capital are the key factors holding back investment in alternative technologies and any new investment in greenhouse vegetable production.

HortNZ, TNZ and VNZI recognise the need for a robust framework for carbon trading and the requirement for businesses to plan for a more carbon constrained future. However the fact that New Zealand does not currently have access to units on the international market and has a closed market trading at a higher unit rate than the international rate with no agreed rules on forestry and land-use is a cause for concern. The international market places we export to either do not have schemes placing a value on carbon, or are likely to provide exemptions to their domestic growers, who are our competitors.

HortNZ represents fruit and vegetable growers with varying carbon footprints from orchards with a relatively small carbon footprint to covered crops using fossil fuel to heat. There has been a lot of work done on carbon footprinting (carbon emissions) and potential carbon sequestration and whilst this is not being considered in the current framework and is in the 'too hard basket' along with soil carbon and agricultural emissions, it is worth noting for future reference. The main focus of the discussion document is on protecting New Zealand's export based economy but horticulture is also important to the domestic market. The importance of being able to source New Zealand grown fruit and vegetables should not be overlooked, considering national nutritional health and future-proofing NZ's food security.

Relying on imported produce ultimately leads to increased prices for our consumers, and almost certainly higher global carbon emissions.

## QUESTIONS

### Context and drivers for the review

#### 1. Do you agree with the drivers for the review?

Yes, a robust framework that provides certainty for growers is needed. We do support the need for businesses to prepare for a more carbon constrained future and recognise that the "NZETS is the principle policy response to climate change".

However, the international context and global policy response to the climate change issues is uncertain as are the rules governing international carbon markets and access for New Zealand to those markets at affordable prices. It would be prudent therefore to consider longer timeframes of transition to ensure that New Zealand policy does not adversely impact our export based economy and ability to produce fruit and vegetables for the domestic and international markets.

#### 3. What other factors should the Government be considering in this NZ ETS review?

This review should consider NZ's food security; export earning potential; and possible unintended consequences and perverse outcomes of an increasing carbon price. In 2013

New Zealand imported \$85 million of fresh vegetables and \$30 million of processed vegetables.

The ability of New Zealand's horticulture to feed New Zealand and increase exports to boost the economy depends on a multitude of factors including access to high quality soils, infrastructure, labour, power, fuel and water.

We are supportive of growers improving sustainability and lowering their carbon footprint where possible.

However as a small country exposed to international market competition both domestically and internationally, several factors outside of the government's control could affect the viability of the sector. These include:

- Potential increased cost of the domestic food supply if full surrender is implemented and the potential demise of domestic production where growers find they are unable to pass costs on;
- The lack of options, cost and practicality of covered crops growers moving to biofuels and the security of supply of these biofuels;
- Ability to achieve government goals of doubling primary sector exports in New Zealand whilst competing with countries that have not imposed a cost of carbon on exporters

The impact of policy decisions relating to the NZETS will have an effect on the bottom line of horticultural businesses in varying ways depending on fuel use, fertiliser use and other downstream supply chain costs that may not have been considered in the NZIER report.

By 2050, the global population is predicted to increase to more than nine billion people, and the horticultural produce required to feed them will be almost double that of today. Close to four billion tonnes of fruits, vegetables and pulses will be required, in a world of increasing environmental pressures and decreasing land availability<sup>2</sup>.

New Zealand will have an important role to play in this changing landscape, providing high quality food both for its own people and for the growing global population. It is important that the market is balanced and that it is cost effective for New Zealand to produce its own food. This balance may be threatened especially in the winter months if the ETS targets greenhouse growers. It is important that industries are treated in an equitable way when assessing the effects of the industry. It is noted that there are no plans at present to offset agricultural emissions and industrial processing activities related to this industry are also not being offset or taxed for their emissions. As such it is inequitable to target New Zealand's greenhouse growers whilst other industries are not having to address their impacts. If the EITE scheme is not increased when the 2 for 1 surrender is imposed this could seriously affect the viability of growers and may put them out of business.

### **Other issues: business responses to the NZ ETS**

#### **Background to greenhouse sector business responses to the NZ ETS**

A carbon footprinting study in 2008 of greenhouse production found that 86% of carbon emissions were generated from the heating stage in a vegetable crops lifecycle from production to consumer. This rose to 92% for a coal heated tomato crop in Christchurch.

A grower survey in 2004 (67% response rate) on greenhouse energy use found the average greenhouse heating system released 96 kgCO<sub>2</sub>/m<sup>2</sup>. This varied between 70 and 175 kgCO<sub>2</sub>/m<sup>2</sup> for a North Island gas heated operation and South Island coal powered operation respectively.

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<sup>2</sup> (<http://www.plantandfood.co.nz/growingfutures/horticulture>)

**Impact of ETS and carbon price changes**

South Island operations have high emissions due to a combination of cooler climate and coal being the predominant fuel heating source. These growers obviously cannot control external air temperatures, and there are negligible opportunities to change to an alternative fuel source.

Table 1 shows that the ETS Industrial Allocation Scheme covers approximately 60% the average ETS costs; slightly more than offsetting the costs for carbon efficient Auckland operations, and less than half for South Island operations.

Table 1: The impact of higher carbon prices and removing the 1 for 2 obligation for a one hectare greenhouse tomato operation.

	Carbon emissions (tCO <sub>2</sub> /ha)	Low price (\$10/t)	Medium price (\$25/t)	High price (\$50/t)
<b>North Island</b>	630	\$6,300	\$15,750	\$31,500
<b>South Island</b>	1,450	\$14,500	\$36,250	\$72,500
<b>NZ average</b>	960	\$9,600	\$24,000	\$48,000
<b>ETS Allocation*</b>	450t tomatoes/ha	\$7,000	\$17,600	\$35,100

\* allocative baseline 2.6006

**QUESTIONS**

**9. Do you consider the future cost of emissions in your business planning?**

**If yes, how do you do this? If no, please explain your answer?**

Greenhouse growers, particularly in the South Island, are considering the future cost of emissions in their business planning as the NZU price rises and with the possibility of of the 2-for-1 surrender and industrial allocation schemes phasing out.

At the lower carbon prices South Island operations have been forced to absorb the additional carbon costs that have not been offset through the Allocation Scheme. However, as the carbon price approaches \$25 and upwards the net carbon cost of \$37,000 (\$72k - \$35k) will make South Island coal burning operations uneconomic. Without question, removing the Allocation Scheme will force these operations out of business.

There has been no expansion of greenhouse production in the South Island since the NZ ETS scheme began, and unless there is a viable, cost effective and low emission energy source made available in the next five years, those operations will become un-economic. As the carbon price reaches \$50/t, carbon will become the 3<sup>rd</sup> most expensive operating cost behind labour and energy.

**10. What would improve your ability to take into account the future cost of emissions in your business planning?**

- Increased certainty about the availability of the Industrial Allocations Scheme;
- Certainty of the carbon price (e.g. price ceiling); and,
- Minimal variability in price.

**Other issues: protecting competitiveness through free allocation**

**11. Under what conditions should free allocation rates start to be reduced after 2020?**

Free allocations should not be reduced until NZ's trading partners and potential international competitors face the same carbon price burden as New Zealand producers, and cost-effective, viable, alternative low-carbon fuel sources are widely available.

**12. What impact would it have on your investment decisions over the next few years if there was a clear pathway or criteria for phasing out of free allocation after 2020?**

Growing in the South Island would become uneconomic using coal, adding \$31,000 per hectare to production costs, unless there are viable energy alternatives.

Even North Island producers using more carbon-efficient natural gas will be significantly impacted without an offset (Industrial Allocation) of their carbon costs, and report that they will be unlikely to re-invest in new glasshouses as their old ones become uneconomic.

Other high value inputs high inputs like fertiliser and transplants are also likely to become more expensive due to increasing carbon costs, further eroding profitability.

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**Other issues: managing unit supply - forestry**

**13. – 15. Not applicable**

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**Other issues: managing unit supply – international units**

**16. If international units are eligible for NZ ETS compliance in the 2020s, should any of the following restrictions be placed on their use?**

- a) restrictions on where units can be sourced from (location of and/or types of projects)**

International units should be available to ensure growers can maintain international competitiveness. If higher carbon-footprint imports replace NZ-grown produce because those imports pay lower carbon costs, then NZ will have lost its own more efficient growers and the domestic and export income that goes with them.

- b) restrictions on how many units can be surrendered**

As above, any restrictions on availability would limit international competitiveness.

**Other issues: managing unit supply – auctioning**

**17. Should auctioning be introduced in the NZ ETS?**

Auctioning should not be introduced at the expense of industrial allocations.

**18. What should be the role or purpose of an auctioning function in the NZ ETS, if one were introduced?**

**a) to align supply in the NZ ETS more closely with our international target**

Yes, but only if industrial allocations continue.

**b) to more actively manage NZU prices**

Price certainty is important to producers so that rational business decisions can be made. The benefits of actively managing prices through an auction system would depend on the management policy – if stability was the key goal then this is a positive role.

**c) other**

Auctioning could be of value if it increases the price transparency of NZU's, preventing energy companies charging inflated prices.

### **Other issues: managing price stability**

**20. What impact has carbon price volatility in the NZ ETS had on your business?**

While the prices have been low, volatility has had minimal impact. However, as prices increase, any volatility will begin to have a greater impact on horticultural businesses. Volatility at higher carbon prices would likely affect businesses profitability from year to year, adding to uncertainty, making planning difficult, and making it more likely for growers to exit the industry.

**21. Do you think measures should be in place to manage price stability?**

Yes, the upper price limit should remain, to prevent price spikes putting grower-businesses at risk.

**22. What do you consider are important factors for managing price stability?**

**a) upper price limits (eg, fixed price option, or a price ceiling implemented through an auctioning mechanism)**

Yes

**b) lower price limits (eg, price floor)**

Less important as low prices have less effect on grower profitability.

**23. What should the Government consider when managing price stability?**

Business competitiveness in comparison to trading partners; and the carbon emissions of potential import substitutes.



### Other issues: operational and technical matters

#### **24. Are you aware of ways the administrative efficiency of the NZ ETS could be improved?**

The median sized heated greenhouse operation is 2,400 m<sup>2</sup>, while the largest is over 200,000 m<sup>2</sup>. The larger operations have been able to organise carbon exchange programmes directly with their energy supplies, however this is administratively too onerous for the value involved for the majority of businesses. The allocation of carbon for the majority of operations is less than 170 t carbon per annum, valued at less than \$1,000 (at \$5/tCO<sub>2</sub>). Brokers have been unwilling to deal with such small parcels and even if growers could aggregate them, the administration cost is likely to be prohibitive. Effectively the cost of carbon has become another expense that growers have absorbed, as they are unable to pass this onto their customers. While higher carbon prices will make accessing the Allocation Scheme more important, an efficient aggregation and brokering process is needed.

### Other issues: addressing barriers to the uptake of low emissions technologies

#### **26. Are there any barriers or market failures that will prevent the efficient uptake of opportunities and technologies for reducing emissions?**

Yes. There are significant barriers to uptake of technologies to reduce emissions for greenhouse growers.

The area under greenhouse production has been fairly static in the past 10-15 years, with only a few new glasshouses having been erected. Those newer glasshouses have greater energy efficiency. They are more airtight, and they have built-in energy and sunscreens, although these can cause problems with humidity in warmer Northern climates, but are effective in cooler climates<sup>1</sup>

Most greenhouses are at least 15 years old. These were not built with energy efficiency in mind, and retro-fitting of energy saving technologies is expensive and tends to make relatively small energy savings<sup>1, i</sup>

Following the introduction of the ETS, the industry explored ways of improving energy efficiency and worked with EECA to communicate to growers the possibility of converting to lower-carbon fuels<sup>1</sup>.

A handful of South Island greenhouse growers converted to wood chip, but there are issues with using wood chip and another low carbon alternative, waste oil:

1. Wood chip requires 7 – 10 times the fuel volume to generate the equivalent BTU heat rate as coal, this means 7 – 10 truckloads to provide the equivalent output of one truckload of coal
2. Our largest South Island glasshouse capsicum crop grower is in Nelson and the nearest woodchip supplier is in Blenheim over 100km away
3. Capturing CO<sub>2</sub> from the flue in order to raise the levels in the greenhouse to around 1,000 ppm, as is the case with gas, is difficult with wood chip burners, also making the switch less desirable
4. The moisture content of wood chip can be very inconsistent
5. There is no geo-thermal power supply (as there is in Taupo)
6. There is no natural gas supply (as in Taranaki to Northland)
7. There is no recycled oil supply in Nelson/Blenheim (as in Christchurch, where most of all of the available oil is under contract to schools and hospitals)

8. Electricity is cost prohibitive

**27. If so, is there a role for the Government in addressing these barriers or market failures and how should it do this?**

Industry would be prepared to work with Government on research into low emission technologies or fuels for greenhouses. However it needs to be noted that New Zealand may not have the scale in this small industry to make the conversion to such technologies viable or cost efficient for growers at this time.

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<sup>i 1</sup> Personal communication, Stefan Vogrnic, greenhouse consultant, April 2016