

SUBMISSION ON

New Zealand's second emissions reduction plan

23 August 2024

To: Ministry for the Environment

Name of Submitter: Horticulture New Zealand

Supported by: Citrus NZ, New Zealand Apples & Pears,
Strawberry Growers NZ, Tomatoes NZ, Vegetables New Zealand
Inc.

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OVERVIEW

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Our submission

Horticulture New Zealand (HortNZ) thanks the Ministry for the Environment for the opportunity to submit on the second emissions reduction plan and welcomes any opportunity to continue to work with the Ministry for the Environment and to discuss our submission.

The details of HortNZ's submission and decisions we are seeking are set out in our submission below.

HortNZ's Role

Background to HortNZ

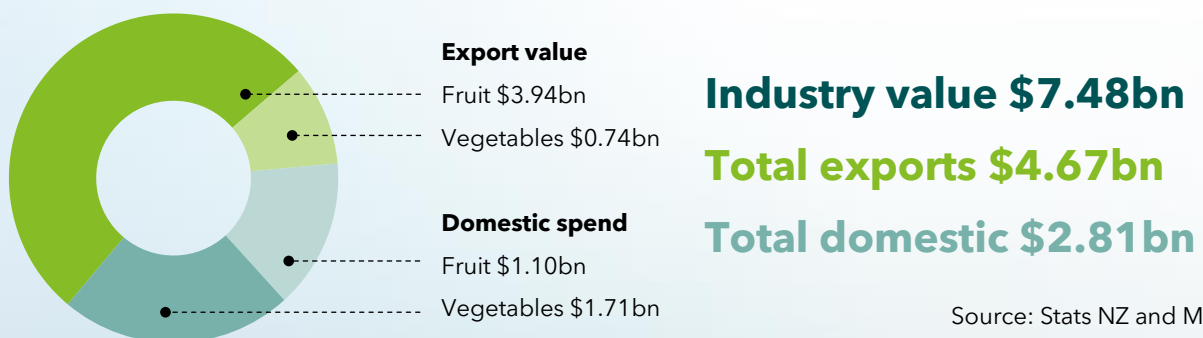
HortNZ represents the interests of approximately 4,200 commercial fruit and vegetable growers in New Zealand who grow around 100 different fruits and vegetables. The horticultural sector provides over 40,000 jobs.

There are approximately 80,000 hectares of land in New Zealand producing fruit and vegetables for domestic consumers and supplying our global trading partners with high quality food.

It is not just the direct economic benefits associated with horticultural production that are important. Horticulture production provides a platform for long term prosperity for communities, supports the growth of knowledge-intensive agri-tech and suppliers along the supply chain; and plays a key role in helping to achieve New Zealand's climate change objectives.

The horticulture sector plays an important role in food security for New Zealanders. Over 80% of vegetables grown are for the domestic market and many varieties of fruits are grown to serve the domestic market.

HortNZ's purpose is to create an enduring environment where growers prosper. This is done through enabling, promoting and advocating for growers in New Zealand.



Executive Summary

Horticulture is Key to Meeting New Zealand's Emissions Budgets

It is questionable why the second emissions reduction plan (ERP 2) does not once mention horticulture, fruit or vegetables. Horticulture is already a low emissions land use which produces food for New Zealanders and the world, while making \$7.48 billion of value between the domestic and export markets,¹ all on less than 0.1% of New Zealand's land area² and while contributing only 1.1% of New Zealand's greenhouse gas emissions.³

It is well known that horticulture is a low emissions land use and incredibly emissions efficient, with the sector's limited greenhouse gas emissions coming from the use of fuel for farm equipment, processing, cool storage and freight. Horticulture also produces nitrous oxide emissions from fertiliser, although horticulture's share of nitrous oxide emissions is only 1% of agriculture's total.⁴

Land use change to horticulture is one option of many that the country should draw on to reach New Zealand's emissions reduction targets. For the least risk pathway to net-zero, the Government should be developing a diverse portfolio of emissions reduction policies, rather than banking the country's success on a few uncertain technological developments. The Climate Change Commission accounted for 14,000 hectares of land use change from livestock farming to horticulture as one of twenty-one benchmarks for action in their demonstration path to meet the second emissions budget.⁵ ERP 2 should include policy direction to enable this transition as part of its broader emissions reduction programme.

Reducing Emissions While Doubling Export Value

The Government has committed to double export value by 2035. Fruit-growing, in particular, is a low-emissions, high-value export industry. Global demand for New Zealand fruit is far from saturated and the horticulture industry is actively finding new value streams for crops like cherries, blackcurrants and onions. Horticulture has room to grow, and yet that opportunity for the transition to a low emissions economy has been missed in the Government's proposed second emissions reduction plan.

HortNZ calls on the Government to state their commitment to doubling horticultural value as part of their plan to reduce New Zealand's emissions, which is the aim of the Aotearoa Horticulture Action Plan, a strategy that is co-owned by Government, Industry, Science and Māori.⁶

¹ [Annual-Report-2024-final.pdf \(hortnz.co.nz\)](#)

² [Agricultural and horticultural land use | Stats NZ](#)

³ [StatsNZ. Greenhouse gas emissions \(industry and household\): Year ended 2022](#)

⁴ [StatsNZ. Greenhouse gas emissions \(industry and household\): Year ended 2022](#)

⁵ [ERP2-Final-Advice-for-web.pdf \(climatecommission.govt.nz\)](#)

⁶ [Aotearoa Horticulture Action Plan | Horticulture New Zealand – Ahumāra Kai Aotearoa \(hortnz.co.nz\)](#)

Doubling horticultural value will require reducing regulatory barriers to horticulture, which are detailed in this submission.

To remedy the omission of horticulture from ERP 2, this submission focuses on two topics that should be included in the final version:

1. Policy levers to enable horticultural expansion as a strategy for low emissions food production and;
2. Resources needed for horticulture to further decarbonise.

Policy levers to enable horticultural expansion

NATIONAL PLANNING AND POLICY DIRECTION

- Include diversification to horticulture as a key proposed policy under ERP 2.
- Make “enabling the supply of fresh fruits and vegetables” a matter of national importance under the RMA and its replacement legislation.
- Implement national direction for commercial vegetable production to remedy the consequences of unworkable regional rules.

Policy levers to enable horticultural decarbonisation

COVERED CROPPING

- Establish a Sustainable Food Systems Fund to reinvest ETS proceeds in greenhouse decarbonisation to support climate adaptive food production for domestic supply.
- Delay the allocative baseline change until funding is available, no earlier than July 2025, to allow time for gas contracts to expire and for growers to make fuel or efficiency changes.
- Make enabling the use of CO₂ for food production an objective in any new regulatory system for carbon capture, utilisation and storage.

INCENTIVISE CARBON REMOVALS THROUGH NON-FORESTRY PLANTINGS

- Develop a standardised measurement system for non-forestry removals, including wetlands, shelterbelts and riparian plantings.

TRANSPORTATION AND SHIPPING

- Establish green shipping corridors and invest in low or zero-emissions fuels for maritime transportation.
- Fast-track port upgrades to allow for larger, low or zero-emissions shipping vessels.

Submission

1. Horticulture and Climate Policy

Horticulture has a role to play in New Zealand’s transition to a low emissions economy and in meeting our 2050 targets. We welcome the opportunity to provide feedback on the second emissions reduction plan (ERP 2).

Horticulture New Zealand (HortNZ) engaged in previous consultation, making detailed submissions on the Climate Change Commission’s Advice to Government, the discussion document preceding the first emissions reduction plan, and participating in He Waka Eke Noa.

2. Reducing Emissions While Doubling Export Value

The Government has committed to double export value by 2035. Fruit-growing, in particular, is a low-emissions, high-value export industry. Global demand for New Zealand fruit has not been saturated. For instance, kiwifruit represents less than 1% of the global fruit bowl but is still rising in popularity in key markets.⁷ Zespri estimates that license for 450-800 hectares of SunGold and RubyRed™ kiwifruit will be released per annum between 2026 and 2028 (including some transition from green kiwifruit).⁸ Crops like cherries,⁹ blackcurrants¹⁰ and onions¹¹ are all finding new value streams. Horticulture has room to grow, and yet that opportunity for the transition to a low emissions economy has been missed in ERP 2.

HortNZ calls on the Government to plan to double horticultural value in this timeframe as part of their plan to reduce New Zealand’s emissions, which is the aim of the Aotearoa Horticulture Action Plan, a strategy that is co-owned by Government, Industry, Science and Māori.¹²

Doubling horticultural value will require reducing regulatory barriers to horticulture. Examples include a water allocation framework that considers the sustainability and efficiency of activities, recognition of industry assurance programmes to deliver Freshwater Farm Plans and breaking down barriers for crop protection approvals.

3. Climate Change, Food Security, and Human Health

HortNZ sees food security and reducing emissions as a dual focus for climate action, where these two priorities are held equally without one compromising the other. The cover decision for COP 27 was the first ever to mention food, recognising “the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food

⁷ [2023-Outlook.pdf \(zespri.com\)](#)

⁸ [2023-Outlook.pdf \(zespri.com\)](#)

⁹ [Eden Orchards | 100% Pure NZ Cherry Juice](#),

¹⁰ [Blackcurrant Benefits - Blackcurrants New Zealand Inc.](#)

¹¹ Onions NZ. Humble to Hero project.

¹² [Aotearoa Horticulture Action Plan | Horticulture New Zealand – Ahumāra Kai Aotearoa \(hortnz.co.nz\)](#)

production systems to the adverse impacts of climate change.”¹³ This put food at the top of the global environmental agenda, and it should also be a priority for New Zealand. Food is simultaneously a necessity for human survival, a possible casualty of climate change, and a sector that can be leveraged to reduce greenhouse gas emissions. The New Zealand government should work toward emissions reduction through land use change for health and climate impacts.

3.1. Food Security and Human Health

Zero hunger is the second United Nations sustainable development goal, and good health and well-being is the third.¹⁴ There is a strong link between climate action and human health particularly regarding food security and hunger.

Improving food security requires sustainable local market and regulatory conditions to feed the population. Changes in environmental regulations and extreme weather events may also lead to increases in the cost of food in New Zealand.

Outcomes sought:

- Make food security an explicit consideration in climate policy assistance, including investment, industrial allocation and research funding.

3.2. Role of Plant-Based Industries in Reducing Emissions

This section responds to question 7.6 of the discussion document, “Please provide any additional feedback on the Government’s thinking about how to reduce emissions in the agriculture sector.”

It is questionable why ERP 2 does not once mention horticulture, fruit or vegetables. Horticulture is already a low emissions land use which produces food for New Zealanders and the world, while making \$7.48 billion of value between the domestic and export markets,¹⁵ all on less than 0.1% of New Zealand’s land area¹⁶ and while contributing only 1.1% of New Zealand’s greenhouse gas emissions.¹⁷

It is well known that horticulture is a low emissions land use and incredibly emissions efficient, with the sector’s limited carbon dioxide emissions coming from the use of fuel for farm equipment, processing, cool storage and freight. Horticulture also produces nitrous oxide emissions from fertiliser, although horticulture’s share of nitrous oxide emissions is only 1% of New Zealand agriculture’s total, compared to 99% from livestock farming.¹⁸

¹³ Sharm el-Sheikh Implementation Plan. 2022. Accessed 21/04/23 [COP27 AUV 2 \(unfccc.int\)](https://unfccc.int/cop27-auv-2) (p. 1)

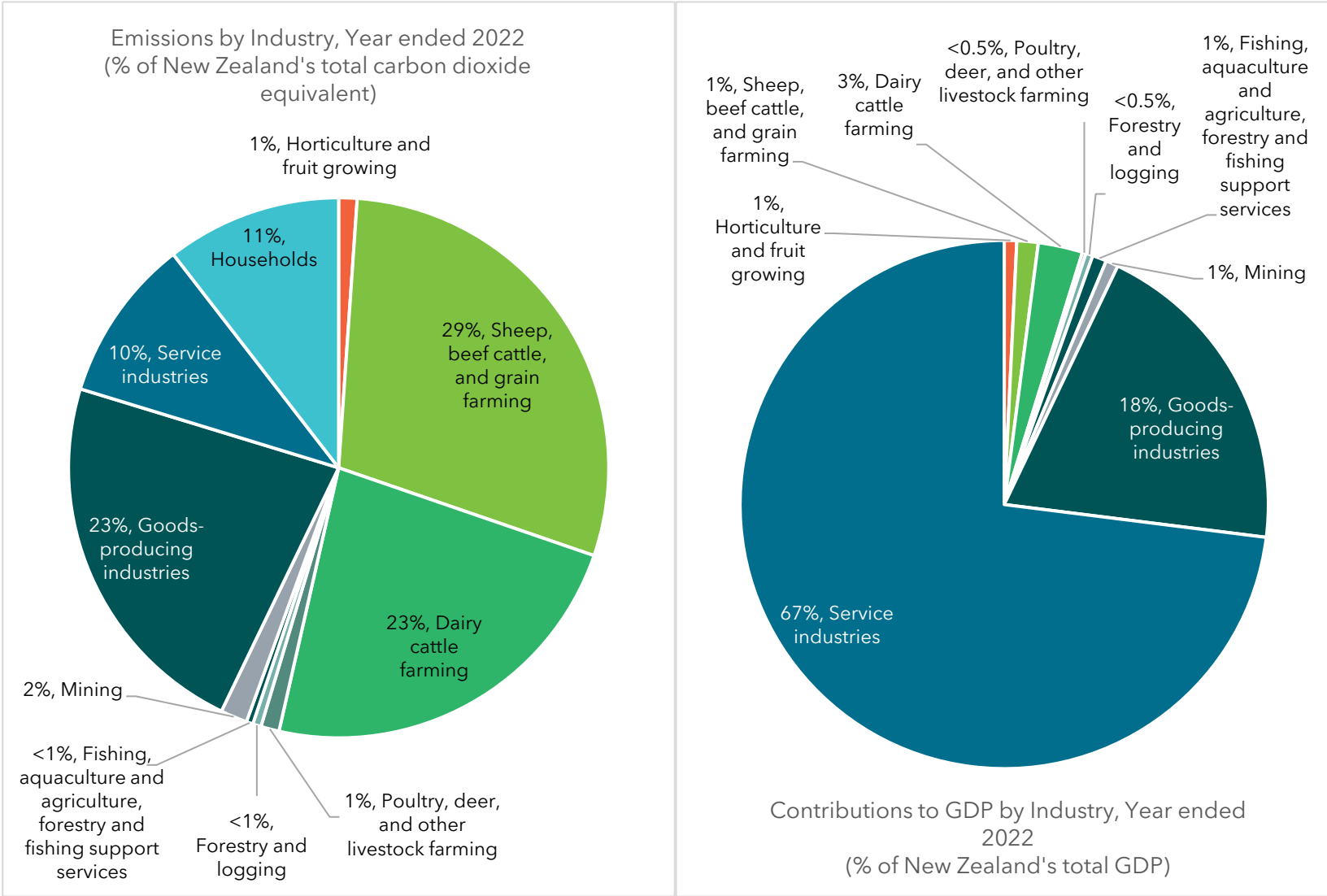
¹⁴ [THE 17 GOALS | Sustainable Development \(un.org\)](https://www.un.org/sustainabledevelopment/)

¹⁵ [Annual-Report-2024-final.pdf \(hortnz.co.nz\)](https://www.hortnz.co.nz/annual-report-2024-final.pdf)

¹⁶ [Agricultural and horticultural land use | Stats NZ](https://www.stats.govt.nz/agricultural-and-horticultural-land-use)

¹⁷ [StatsNZ. Greenhouse gas emissions \(industry and household\): Year ended 2022](https://www.stats.govt.nz/greenhouse-gas-emissions-industry-and-household-year-ended-2022)

¹⁸ [StatsNZ. Greenhouse gas emissions \(industry and household\): Year ended 2022](https://www.stats.govt.nz/greenhouse-gas-emissions-industry-and-household-year-ended-2022)



Source: StatsNZ. [Greenhouse gas emissions \(industry and household\): Year ended 2022](#). 30 May 2024.

Oceania has the highest per capita agricultural emissions of any continent (6.5 t CO₂eq per capita).¹⁹ Given the predominance of food production to our national and regional emissions, New Zealand has a vested interest in acquiring agricultural technology and best practices to reduce our contributions. In 2021, food made up 65% of New Zealand's merchandise exports.²⁰ As climate change threatens worsening world hunger,²¹ and New Zealand produces enough food to feed over 40 million people,²² our focus should be on learning how to reduce emissions from food production rather than reduce the presence of the sector. This is in line with the UNFCCC Global Mitigation Work Programme for 2023, which calls for "Promoting sustainable development and understanding socioeconomic effects."²³ That means enabling sustainable growth of food production to both bolster the economy and provide for global nutrition and wellbeing.

Horticulture is New Zealand's lowest emissions food source. We seek a robust discussion of the policies needed to enable horticulture for a high-nutrition, low-emissions future. The ERP 2 discussion document's agriculture chapter is focused on continuing current rates of pastoral farming while waiting on uncertain technological solutions which are "several years away from use or are still at an early stage of research".²⁴

4. Enabling Land Use Change to Horticulture

Diversification to horticulture presents an opportunity to reduce emissions while increasing food production. Land use change to horticulture is one option of many that the country should draw on to reach New Zealand's emissions reduction targets. For the least risk pathway to net-zero, the Government should be developing a diverse portfolio of emissions reduction policies, rather than relying on a few "deus ex machina" technological developments. The Climate Change Commission accounted for 14,000 hectares of land use change from livestock farming to horticulture as one of twenty-one benchmarks for action in their demonstration path to meet the second emissions budget.²⁵

In New Zealand, there are 1,000,000 ha of land that could potentially be converted to horticulture to meet increased demand for plant-based foods. If this land was converted to horticulture, it would be as effective at reducing New Zealand's agricultural emissions as a methane vaccine.²⁶ There are further gains to be made in reducing emissions within horticulture with support for greenhouse decarbonisation (discussed in Section 6.1 of this

¹⁹ FAO. 2022. Greenhouse gas emissions from agri-food systems – Global, regional and country trends, 2000–2020. FAOSTAT Analytical Brief No. 50. Rome. Accessed 20/04/23 [Greenhouse gas emissions from agrifood systems \(fao.org\)](#) (p. 2)

²⁰ [World Development Indicators | DataBank \(worldbank.org\)](#)

²¹ AO, IFAD, UNICEF, WFP and WHO. 2022. The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. Rome, FAO. Accessed 21/04/23 <https://doi.org/10.4060/cc0639en> (p. 16)

²² Rush, E., Obolonkin, V. Food exports and imports of New Zealand in relation to the food-based dietary guidelines. *Eur J Clin Nutr* 74, 307–313 (2020). <https://doi.org/10.1038/s41430-019-0557-z>
²³ <https://unfccc.int/topics/mitigation/workstreams/mitigation-work-programme#Topics-for-2023>

²⁴ [New-Zealands-second-emissions-reduction-plan-Discussion-document.pdf \(environment.govt.nz\)](#) (p. 71)

²⁵ [ERP2-Final-Advice-for-web.pdf \(climatecommission.govt.nz\)](#)

²⁶ Dörner, Z et al. (2018) Land-use Change as a Mitigation Option for Climate Change. Report to the Biological Emissions Reference Group (Project No. 18398) <https://www.mpi.govt.nz/dmsdocument/32140/direct> Accessed 24/04/23. (p. 12)

submission) research into regenerative farming, soil health best practices, and alternatives or improvements to synthetic fertiliser.

Both the first emissions reduction plan and the Climate Change Commission's advice for the second discuss a transition to lower emissions systems and land uses, but the focus in ERP 2 remains on making systems changes to pastoral farming, rather than supporting and enabling land use change to horticulture. We see this as a missed opportunity. While regenerative farming and technological advancements may offer opportunities on the margin to reduce emissions from pastoral farming, much more significant emissions reductions could be achieved through land use change. Unlike many of the initiatives within the emissions reduction plan, the emissions reductions are certain.

Outcomes sought:

- Include diversification to horticulture as a key proposed policy under ERP 2.

5. Policy levers to enable horticultural expansion

Enabling a transition to a low emissions economy will require removing regulatory barriers to horticultural expansion.

5.1. Enabling the supply of fresh fruits and vegetables

Fresh fruit and vegetables are nationally significant for the health of the nation, for domestic nutrition and food security and for export value as low emissions, high value products. Recognition of the importance of fresh fruit and vegetables is needed at a national level because regional and district councils cannot be expected to make policy for national value without Central Government direction.

The supply of fresh fruits and vegetables should be enabled as a matter that all RMA practitioners should have particular regard to under Section 7 of the Resource Management Act 1991 (RMA). This wording is preceded in Section 129 of the repealed Natural and Built Environment Act 2023²⁷ and Section 3.33 of the National Policy Statement for Freshwater Management (NPS-FM) 2020.²⁸

This proposal aligns with the Government's target to double export value in the next ten years²⁹ and coalition agreements to lift New Zealand's productivity and economic growth to increase opportunities and prosperity for all New Zealanders and "grow the economy to ease the cost of living".³⁰

Outcome sought:

- Make "enabling the supply of fresh fruits and vegetables" a matter of national importance under the RMA and its replacement.

²⁷ [Natural and Built Environment Act 2023 No 46 \(as at 23 December 2023\), Public Act 129 National planning framework must provide direction on certain matters - New Zealand Legislation](#)

²⁸ This section was quashed only due to deficiencies in the consultation process, not due to the content of the policy. [National Policy Statement for Freshwater Management 2020.pdf \(environment.govt.nz\)](#)

²⁹ https://www.national.org.nz/national_sets_bold_target_for_export_growth

³⁰ [Coalition Agreement: New Zealand National Party & ACT New Zealand, 54th Parliament](#)

5.2. National direction for commercial vegetable production

HortNZ seeks national direction for commercial vegetable production (CVP) to make vegetable growing a permitted activity. This needs to be progressed urgently. Over 20% of New Zealand's fresh vegetable supply is seriously threatened by unworkable freshwater regulations likely to become operative in 2024-25. If over one-fifth of the country's supply of fresh vegetables is disrupted by unworkable regulations, the impact on the price and access to fresh vegetables for New Zealanders will be severe. This threatens the viability of a sector that is both low emissions and essential for the health of New Zealanders. In order for the country to meet our emissions budgets, we need to enable, rather than stifle, low emissions industry.

A consistent approach is needed to ensure that New Zealanders' access to fresh, affordable domestically grown vegetables is not put at risk by regional freshwater regulations. We believe that this can be best provided through a new National Environmental Standard. Workable rules for vegetable production are possible while progressing aspirations for protecting and improving our freshwater.

HortNZ has written an extensive policy position document on this topic, which can be found on our website.³¹

Outcome sought:

- Implement national direction for commercial vegetable production to remedy the consequences of unworkable regional rules.

6. Policy levers to enable horticultural decarbonisation

6.1. Covered cropping

This section responds to question 3.2 of the discussion document, "What are the potential risks of using the NZ ETS as a key tool to reduce emissions?"

The horticulture sector supports New Zealand's net-zero target and market mechanisms to achieve that goal. The horticulture industry is undergoing decarbonisation, including switching greenhouses to renewable energy sources. Many greenhouses use heating sources powered by fossil fuels in colder months and rely on the CO₂ captured when burning natural gas to pump into the greenhouses to boost plant productivity.

6.1.1. GREENHOUSES ARE NEEDED TO ADAPT OUR FOOD SYSTEM

Growing indoors, also known as covered cropping, is what allows New Zealanders to buy tomatoes, cucumbers, capsicum, courgettes, eggplants, leafy greens and herbs year-round. Covered crop growers even out the supply of fresh produce, extending the availability of seasonal crops when outdoor cropping is challenging. Consumers expect access to these crops, which drives production. If these crops were not grown in New

³¹ [National-Direction-Vegetables-HortNZ-position-paper.pdf](#)

Zealand, consumer demand would drive greater imports from other countries without an ETS, driving carbon leakage and further emissions associated with international freight.

An increase in covered cropping will be essential to adapt the food production system to the variable weather that comes with a changing climate while still producing enough food for our population. Indoor growing systems are less vulnerable to environmental conditions and pressures such as significant weather events. During Cyclone Gabrielle, 80% of the tomatoes grown outdoors for processing were destroyed, whereas the supply of indoor grown greenhouse tomatoes was relatively unaffected.³²

Greenhouses are efficient users of water compared to other primary production, in terms of both quality and quantity. Greenhouse growers are precise about exactly how much of a nutrient input they use. Because greenhouses are controlled systems, it is easy to know exactly how much of different nutrients like nitrogen and phosphorus plants need to reach the correct size for market requirements at the right time. Because greenhouses are mostly a closed system, they do not contribute to degradation of freshwater quality. As efficient land and resource users, greenhouses will be an essential growing system for the ongoing resilience of New Zealand's food supply.

6.1.2. GREENHOUSES IN THE EMISSIONS TRADING SCHEME

Growers of fresh tomatoes, cucumbers and capsicums are eligible for industrial allocation which recognises their "Emissions Intensive and Trade Exposed" status, whether they grow indoors or outdoors.³³ This policy was designed to prevent carbon leakage because these crops compete in the commercial market with imported vegetables not subject to the same emissions policies. All growers of these crops, regardless of energy source or growing outdoors, are eligible for industrial allocation to incentivise growing systems without carbon emissions (such as those which have decarbonised, grow with better carbon-efficiency or manage without heating in warmer climates).

Most growers use their industrial allocation to offset their NZ ETS obligations for fuel use. The rest struggle to trade their allocation because it is too small or due to administrative difficulties.³⁴ HortNZ also supports that the Government seeks to instil credibility in the ETS and improve market governance, as indicated in ERP 2.

The Government is investing hundreds of millions of dollars in helping the livestock farming sector reduce emissions, including \$400 million announced in Budget 2024, while delaying agricultural emissions pricing.³⁵ It would be appropriate for decarbonising greenhouses to fit into the overall investment programme, particularly because the vegetables produced are healthy food grown primarily to feed New Zealanders.

Energy-switching is prohibitively expensive, particularly for small and medium-sized growers. The covered cropping sector needs similar support for decarbonisation, and a delay in changing their allocative baseline until technology change is financially accessible through Government support. This financial support used to exist in the form

³² Tomatoes NZ

³³ Environmental Protection Authority. "[Horticulture](#)". Accessed 11/07/24.

³⁴ Tomatoes NZ

³⁵ [New support for agricultural emissions reduction | Beehive.govt.nz](#)

of the Government Investment in Decarbonising Industry (GIDI) Fund, which was officially disestablished with ERP 2.

When road users pay tolls, they are funding the roads they drive. In a similar vein, when greenhouse growers pay into the ETS, they should be funding greenhouse decarbonisation. Matching taxes to the benefit taxpayers receive is a fair allocation of Government revenue.³⁶

We agree with Business NZ's submission that industrial allocations incentivise emission reduction projects. Reducing those allocations removes the incentive for businesses to make emissions reductions and fund that long-term investment with their extra allocation. Periodically reviewing the industrial allocation, removing that payback for investment, increases risk for the business, disincentivising decarbonising sooner rather than later. This is a worse outcome for emissions reductions.³⁷

Outcomes sought:

- Establish a Sustainable Food Systems Fund to reinvest ETS proceeds in greenhouse decarbonisation to support climate adaptive food production for domestic supply.
- Delay the allocative baseline change until funding is available, no earlier than July 2025, to allow time for gas contracts to expire and for growers to make fuel or efficiency changes.

Our policy recommendations align with the second pillar of the Government's climate strategy - "Credible markets support the climate transition: Pricing emissions fairly and effectively to incentivise emissions reductions" - and the fourth pillar - "World-leading climate innovation boosts the economy", which contains the aim, "Agriculture industry uses technology to lower emissions while lifting productivity".³⁸

6.1.3. FUNDING FOR DECARBONISING GREENHOUSES

The cost for a greenhouse grower to decarbonise is roughly \$1 million per hectare.³⁹ Vegetable growing already has incredibly slim margins, so this transition cost and the slow return on investment makes the change to renewable energy sources unachievable for most covered cropping businesses. Efficiency and emissions improvements can also be made through mitigations like installing screens, which reduce the amount of fuel needed.

Only 25 ha of greenhouses from the largest companies have already decarbonised. These companies were able to make the transition with co-investment from the GIDI Fund.⁴⁰ GIDI funding was only available to the largest greenhouse companies because small and medium-scale growers could not meet the emissions threshold for eligibility. It seems ill-advised that the GIDI fund has been discontinued in the proposed ERP 2, just as new

³⁶ This is known as the "benefit principle" in economic theory. ([Understanding Different Approaches to Benefit-Based Taxation \(nber.org\)](#))

³⁷ Business NZ and BEC submission on ERP 2

³⁸ Ministry for the Environment. "[Responding to a changing climate: The Government's climate strategy](#)". July 2024. Accessed 10/07/24.

³⁹ Vegetables NZ, Inc. estimate

⁴⁰ EECA. "[Final stage of energy strategy for fresh produce company](#)". 28 July 2022. Accessed 25/07/24.

baselines are announced, doubly reducing the assistance for New Zealand producers to decarbonise while avoiding carbon leakage.⁴¹

Funding is the most important way the Government can help the covered cropping sector to decarbonise. Small and medium-scale growers, who make up half of the industry at current estimates, do not have the capital on hand to make these changes. There are still 216-285 ha of greenhouses that are not decarbonised, which would cost roughly \$216-285 million to transition.⁴² These growers need grants for co-investment to either switch fuels or improve energy efficiency. Easily accessible low interest loans would also help.

Should the Government decide to change course and reinvest ETS proceeds in decarbonisation again, the funding should not have an emissions threshold for greenhouse businesses to participate. Resourcing should be available for both fuel switching and efficiency improvements, which have a 100% chance to decrease emissions. These mitigations are proven and do not bank on experimental technologies or development of entirely new science.

6.1.4. SUPPORT FOR ALL BUSINESS SIZES FOR INDUSTRY DIVERSITY AND RESILIENCE

Currently, only biggest growers can afford to change energy systems, which is leading to rapid consolidation of the sector. This reduces competition, potentially increasing prices for consumers. It hurts small business owners who support the local economy and employment in rural communities.

Since specific surveying began in late 2022, 15 greenhouse growers were confirmed to have gone out of business, with additional growers expressing that they will be looking at halting their operations within the next year.⁴³ There is a serious risk that more businesses will join their ranks under the proposed policy regime.

Hectares of greenhouse production are still growing overall while the biggest businesses expand, but the risk of losing more small and medium operations threatens the diversity and resilience of the industry. Co-investment from Government without an emissions threshold for eligibility is one way to reverse this trend.

6.1.5. CARBON CAPTURE, UTILISATION AND STORAGE

Limited sources of CO₂ for this purpose are one of the key barriers to greenhouse decarbonisation. Currently, the most common way to get CO₂ is by capturing the byproduct of heating greenhouses with natural gas. Greenhouses already need to be heated in the colder months to continue growing, and capturing CO₂ outputs from natural gas to boost production creates a dual benefit. 1-2% of the CO₂ inside the greenhouse is converted by plants to O₂, offsetting some of the emissions from burning natural gas.⁴⁴

Alternative CO₂ sources are in development in New Zealand but not yet commercialised at scale or accessible to all growers. These projects and uptake of their technology can

⁴¹ Ministry for the Environment. "[Discussion document: New Zealand's second emission reduction plan](#)". July 2024. Accessed 24/07/24.

⁴² Vegetables NZ, Inc. estimates

⁴³ Vegetables NZ, Inc.

⁴⁴ Vegetables NZ, Inc., personal communication.

be enabled by Government. New Zealand could be a global leader in developing alternative CO₂ sources, because access to CO₂ for indoor growing is a problem in every country with glasshouses. Transition away from natural gas will be more possible with the availability of these alternatives.

Waiting to increase greenhouse growers' ETS obligations (through reducing their industrial allocation) until CO₂ alternatives and supportive funding for transition are available would be more consistent with the Government's approach to agricultural emissions.

Any new regulatory system for carbon capture, utilisation and storage should be designed to prevent the perverse outcome where incentives are so high for storing CO₂, that it becomes unavailable for commercial purchase and use for food production. This unintended policy consequence occurred in the Netherlands, where a "system of subsidies and tariffs stimulates burying CO₂ deep underground rather than supplying CO₂ to glasshouses."⁴⁵

Outcome sought:

- Make enabling the use of CO₂ for food production an objective in any new regulatory system for carbon capture, utilisation and storage.

6.2. Incentivise carbon removals through non-forestry plantings

Growers restore wetlands and plant shelterbelts (hedgerows), riparian plantings, diverse inter- and under-plantings and green buffers on horticultural properties for their numerous benefits, including water quality, biodiversity and shelter for crops from the elements. Horticultural properties generally do not have the space for ETS forest planting, but these other plantings sequester carbon, and that benefit should be recognised. Growers should be compensated for this benefit with a standardised measurement approach for non-forestry removals and the opportunity to earn carbon credits.

Outcome sought:

- Develop a standardised measurement system for non-forestry removals, including wetlands, shelterbelts and riparian plantings.

6.3. Transportation and shipping

HortNZ agrees that the Government has a role to play in enabling the use of low- or zero-carbon shipping on trade routes.⁴⁶ HortNZ fully supports accelerating green shipping opportunities through targeted investment from the New Zealand government.

Horticulture exports are dependent on maritime freight to travel to their destination, although some highly perishable, high value crops like cherries are transported via air

⁴⁵ Nederhoff, Elly. "[Covered Crops: Greenhouse energy efficiency](#)". Produced for Tomatoes NZ, Vegetables NZ Inc.

⁴⁶ [New-Zealands-second-emissions-reduction-plan-Discussion-document.pdf \(environment.govt.nz\)](#) (p. 65)

freight. Horticulture is already a low emissions industry on-farm, so international freight is the emissions category where we have the greatest opportunity to reduce.

As the “food miles” conversation becomes more prevalent, New Zealand will be at a disadvantage in its trade due to distance, unless we can access greener ways of transporting product. This will be a critical consideration for our export markets as supply chains are coming under more scrutiny.⁴⁷

HortNZ encourages the Government to continue its support for green hydrogen as the basis for green fuel, as indicated in the Energy Strategy for New Zealand,⁴⁸ the Hydrogen Roadmap⁴⁹ and the Regional Hydrogen Transition programme.⁵⁰ The 2023 Coalition Agreement between the National Party and New Zealand First calls for a plan for infrastructure to increase hydrogen use and facilitate port development and efficiency.⁵¹

In order for green shipping alternatives to be accessible to New Zealand suppliers, the Government needs to invest in building bigger ports that can handle the larger, low-emissions ships. Just slowing down the boats (“slow steaming”) is not suitable for horticultural trade because fruit and vegetables have a limited shelf life. From the moment the product is harvested, the countdown begins to get that produce to the consumer at the right ripeness.

Action is needed on green shipping; or else, New Zealand risks reputational damage, as well as being left out of international green shipping programmes and paying more to use older, higher emissions vessels.

Outcomes sought:

- Establish green shipping corridors and invest in low or zero-emissions fuels for maritime transportation.
- Fast-track port upgrades to allow for larger, low or zero-emissions shipping vessels.

⁴⁷ WBCSD (2024) *Briefing on Key Trends for 2024*,

<https://www.wbcsd.org/Overview/Resources/General/Briefing-on-key-trends-for-2024>

⁴⁸ <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-consultations-and-reviews/advancing-new-zealands-energy-transition-consultation-document/towards-an-energy-strategy-for-new-zealand>

⁴⁹ <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-strategies-for-new-zealand/hydrogen-in-new-zealand>

⁵⁰ <https://www.mbie.govt.nz/business-and-employment/economic-development/just-transition/regional-hydrogen-transition>

⁵¹ <https://www.nzfirst.nz/coalition-agreement>