

AgriTechNZ submission on New Zealand's second emissions reduction plan



Opening Statement

AgriTech New Zealand (AgriTechNZ) thanks the Ministry for the Environment (MfE) and the Ministry for Primary Industries (MPI) for the opportunity to provide feedback on the *Second Emissions Reduction Plan for New Zealand*, specifically for agriculture.

The AgriTechNZ community is deeply committed to developing innovative technologies and solutions to drive climate mitigation and enable New Zealand's best producers to thrive in an increasingly challenging environment. Our mission is to deliver the world's best tools, services, and insights that empower sustainable and productive practices amidst a climate crisis.

We recognise that our solutions do not exist in isolation; they are part of a broader ecosystem that must adapt to actual emissions, additional sequestration efforts, and the availability of technology. Our commitment is to ensure that technology roadmaps and adoption are effectively communicated as part of an adaptive system, ideally guided by communication tools such as marginal abatement cost curves. This approach emphasises the necessity of achieving net emissions reductions and the critical timing and impact of decisions to meet these goals. We need an agile system to enable decisions between more trees / fewer ruminants / new technologies....

We also believe new approaches are needed if the primary sector is to take advantage of the technologies that will change New Zealand's food production emissions profile. New methods should include a collection of supports and incentives to accelerate the uptake of technologies that enable reduced emissions or increased sequestration. The challenges we face in emissions reduction will require acceleration that moves faster than pure economic market demands.

By working together within this adaptive and incentivised framework, we can support the resilience and success of New Zealand's agricultural sector and ensure that it remains a global leader in sustainable and productive practices.

Background

AgriTechNZ is an independent industry association funded through membership.

We have over 170 members representing the entire agritech ecosystem: established agritech businesses, start-ups, accelerators, CRIs, universities, investment funds, banks, leading NZ co-operatives, agribusinesses, enablers and levy groups representing farmers and growers.

We advance the ecosystem through connection, promotion, advocacy, industry working groups and championing collaborative practice.

AgriTechNZ is governed by an Executive Council elected by the community.

Responses to consultation questions

0. General Consultation Questions

0.1. What do you think is working well in New Zealand to reduce our emissions and achieve the 2050 net zero target?

Many things that are 'working well' are establishing capabilities that will reduce emissions in the future (i.e. how well they are working is yet to be seen):

- The high adoption of farm business management tools and the increasing levels of data mobility create a strong network of platforms for emissions tracking and reporting. We highly commend MPI's approach of creating a standardised GHG calculator with technical documentation for integration into such management tools.
- AgriTechNZ believes implementing a farm-level agricultural emissions system and practice change is best supported by an equitable system that does not penalise farmers who started protection and restoration before others. We note that the work is already underway by farmers and their agritech partners. Registration and monitoring of carbon sequestering areas, livestock reconciliations, heritage reporting, and fertiliser proof of placement reporting are all existing capabilities from various agritech providers well-positioned to support their customers in new practices.
- The increasing adoption of tools that improve per-animal productivity and virtual fencing to prevent animal excursion into sequestering areas enable the capability to reduce emissions while maintaining productive capacity.
- Our leading agribusinesses' role in connecting farming businesses to Scope 3 market requirements is a valuable and necessary step in highlighting the need for emissions reductions on farms. Linking farmer adaptation to these visible metrics is also promising.

- The deployment of tools that help landowners restore native forests and generate carbon credits through a process that involves assessment, restoration, monitoring, and verification is an excellent resource in enabling actual sequestration gains.
- The AgriZeroNZ joint venture approach to funding and accelerating methane and nitrous oxide mitigations is a world-class approach to creating a portfolio of options for New Zealand farmers, faster.
- The Ministry for Regulation's review of the approval path for agricultural and horticultural products is a potentially positive step toward faster approval of products that can safely reduce emissions.
- The legislative review of regulations controlling genetic technologies is also a potentially positive step for enabling the utilisation of new interventions through plant and animal solutions.

However, what 'working well' means is unclear unless we can evaluate and discuss assumptions on the expected level, timing, and cost of emissions reductions and net zero progress through comparison with scenario tools such as a marginal abatement cost curve. Progress can only be assessed by considering the relative efficacy, timing, and cost per unit of reduced emissions against the target.

0.2. The Government is taking a 'net-based approach' that uses both emissions reductions and removals to reduce overall emissions in the atmosphere (rather than an approach that focuses only on reducing emissions at the source). A net-based approach is helpful for managing emissions in a cost-effective way that helps grow the economy and increase productivity in New Zealand.

What do you see as the key advantages of taking a net-based approach?

- **Flexibility in achieving targets:**
 - A net-based approach allows for flexibility by enabling reductions in emissions through various methods, such as improving efficiency, adopting new technologies, or enhancing carbon sequestration. We believe this flexibility can make it easier for the industry to meet targets – if those targets are clarified on a time and impact basis.
- **Encourages innovation:**
 - This approach encourages developing and adopting innovative practices and technologies that reduce emissions or enhance carbon sinks (e.g., emissions inhibitors, vaccines, genetics, improved livestock management, soil carbon sequestration techniques, and restoration of native forests).
- **Integrated land management:**

- It promotes integrated land management practices that simultaneously enhance productivity, biodiversity, and resilience to climate change while reducing net emissions.
- **Alignment with carbon markets:**
 - A net-based approach aligns well with carbon trading and offset markets, allowing farmers to potentially generate additional income by selling carbon credits for activities that sequester carbon or reduce emissions.
- **Holistic environmental benefits:**
 - Beyond GHG emissions, practices that increase carbon sequestration often have co-benefits such as improved soil health, water retention, and biodiversity, contributing to the overall sustainability of agricultural systems.

New Zealand agritech businesses are ready to support farmers and their advisors in realising these benefits. Still, they can only do so in a system that works to ensure that it leads to genuine emissions reductions.

What do you see as the key challenges to taking a net-based approach?

- **Measurement and verification challenges:**
 - Accurately measuring and verifying both emissions and sequestration is difficult. Agritech solutions will continue to evolve to enable such measures, but they need investment and stable, transparent policy assumptions to be effective. Work to align assumptions with emissions inventory processes is vital.
- **Risks in offsetting rather than reducing; and the time lag of sequestration:**
 - A poorly managed net-based approach could rely on offsets rather than direct emissions reductions. This could lead to a situation where real reductions in emissions are not achieved. The expected level, timing, and cost of emissions reductions and net zero progress against expected scenarios are vital to ensure this doesn't occur. We need an agile system to consider the balance between more trees / fewer ruminants / new technologies ...
 - Carbon sequestration processes, such as tree planting or soil carbon enhancement, have a time lag before they begin to offset emissions ... the impact of this delay must be considered in the overall system design.
- **Dependence on policy and market stability:**
 - The effectiveness of a net-based approach is contingent on stable and supportive policy environments and markets for carbon credits. Fluctuations in these areas can undermine long-term planning and investments. Bi-partisan support and alignment with key global partners is required for existential challenges like this.

By working together within an adaptive and incentivised framework, we can support the resilience and success of New Zealand's agricultural sector in meeting its emissions reduction targets as part of the global ecosystem in which it must operate.

7. Agriculture | Te ahuwheua

7.1. What are the three main barriers or challenges to farmer uptake of emissions-reduction technology?

7.1.1. Motivation

Unless there is a clear alignment between a farmer's personal, economic and social interests there will be little motivation to uptake emissions-reduction technology.

When emissions reduction practices can be linked to both the overall progress being made at a national level and the values and goals of the farming practice, then adoption will follow (if the other barriers are also addressed). This requires clear communication of targets and progress against those targets—a full stack of components that lead to the overall emission reduction goal and the ability to “see one's place” in that effort. Individual businesses need to be able to make their calls on the levers of “more trees / fewer ruminants / new technologies....” and know what difference that will make.

Financial motivation is fundamental to offset initial costs and ensure the economic viability of adopting new practices. Relying solely on existing market dynamics will not achieve the required uptake rate. Environmental services need to be recognised, and national leadership needs to demonstrate the urgency of reducing emissions.

The work of leading farmers and catchment groups in reducing emissions must be communicated and celebrated widely to encourage a virtuous cycle of motivation to change.

7.1.2. Awareness and attraction

Farmers need to be aware of the technologies and options available. In addition to industry levy bodies and processors, farm advisors and independent technology advisory services are required. We advocate for a Consumer.Org-type approach where both independent advisors (with the proper knowledge and resources to expand that knowledge as new technologies become available) and farmer/user ratings can help drive awareness and selection.

7.1.3. Access and affordability

Access means more than just the existence of a particular technology; it must be in reach of all farmers in all applicable regions. It must also be supported efficiently. This is the role of agritech businesses as the vital connectors between ‘research outputs’ and ‘daily farmer needs’ (not just the day of acquisition).

Affordability is a critical issue in the uptake of emissions reduction technology. Agritech businesses are focused on delivering returns on investment, and if adoption rates are instrumental to national emissions reduction targets, then a supportive environment is

required. Supports may be required to accelerate adoption and offset initial costs. Relying solely on existing market dynamics may not achieve the necessary uptake rate. Also, recognition of environmental services that benefit off-farm needs is a consideration at this time. We explore potential approaches in other responses to this consultation.

7.2. How can the Government better support farm- and/or industry-led action to reduce emissions?

In addition to the positive activities noted in section 0.1, other vital approaches could support emissions reduction progress:

- **Highlight the progress** and interdependence of interventions to reduce emissions. What is the 'stack of activities' and their relative costs and impact that add to the overall reduction targets. Create visibility of progress and the trigger points at which additional interventions may be required.
- **Accelerate uptake** through the availability of low-cost finance, tax incentives, and payments for environmental services. NZ will need to pay a price if we don't meet emissions targets, so is there a way to recycle that capital risk in a positive way earlier?
- Support in establishing **pilot programs and demonstration farms** that showcase successful emission-reduction strategies can help farmers see the benefits firsthand, encouraging broader adoption.
- Support **study tours** that expose all parts of the ecosystem to activities and progress in overseas markets. Insights and perspectives gained overseas can create the 'zeal of a convert' when the more comprehensive picture and global activity is experienced first-hand.
- Develop clear, consistent, and **long-term policies** that set emission reduction targets to provide farmers with certainty about making long-term investments. These policies need bipartisan political support and the certainty that comes with it.

7.3. How should the Government prioritise support for the development of different mitigation tools and technologies across different parts of the agriculture sector?

Since the ultimate goal is emissions reduction, all prioritisations should be based on the cost and potential (adjusted for the likelihood of impact) of different tools, technologies, and interventions to reduce greenhouse gas emissions. A tool such as a Marginal Abatement Cost Curve would enable alignment between policy, research, and technology decisions.

The details included in the technical annex of the discussion document regarding assumptions mitigation technologies seem incomplete and is not presented in a manner that could drive decision-making and trade-offs to prioritise support.

7.4. What are three possible ways of encouraging farmer uptake of emissions-reduction tools?

7.4.1. Financial incentives

It is unreasonable to think that the necessary levels of change will occur without financial incentives being put into place. These incentives could take various forms including tax incentives, access to low-cost finance and/or payments for environmental services. Since part of motivation for delivering on Paris Agreement commitments is to avoid paying a price if we don't meet emissions targets, it seems appropriate to find a way to recycle that capital risk in a positive way earlier?

By providing grants or low-interest loans for projects that focus on reducing emissions, farmers would be encouraged to invest in emission reduction tools without bearing the full financial burden of the national commitments to emissions reduction.

Encouraging cooperative initiatives among farmers, such as shared access to emission-reducing technology or resources, could help reduce costs and increase participation.

7.4.2. Clarifying the 'why'

Information campaigns, pilot trials and demonstration farms are all valuable activities that AgriZeroNZ, Levy groups and others will drive. However, if these activities are conducted in a void without a clear link to the overall purpose and progress being made at a national level, then adoption will be sub-optimal.

Clear communication of targets and progress against those targets—a full stack of components that lead to the overall emission reduction goal and the ability to “see one's place” in that effort. The research, the investments, adoption rates of current technologies, levels of new sequestrations (and their forecast impacts), changed stocking rates (resulting from improved per-animal productivity), methane inhibitor/vaccine adoption and impacts, genetic selection impacts, effluent storage choices ... all need to be seen as part of the shared activity to achieve national targets.

Individual businesses need to be able to make their decisions about “more trees / fewer ruminants / new technologies...” and know what difference that will make to their own operations and the shared objectives of emission reduction.

Supporting study tours that expose all parts of the ecosystem to activities and progress in overseas markets could also be a key part of encouraging change. When the wider picture is experienced firsthand, you can create the 'zeal of a convert'.

7.4.3. Creating awareness

Support industry and levy groups in running information campaigns that raise awareness about the full-stack of options available to reduce emissions. Highlighting success stories will also encourage others to engage with the available systems and tools.

7.5. What are the key factors to consider when developing a fair and equitable pricing system?

For such long-term and existential challenges, it is vital to develop clear, consistent, and long-term policies that set emission reduction targets and associated pricing systems so that farmers can be confident in making long-term investments. These policies need bipartisan political support and the certainty that comes with it.

A transparent pricing system in which farmers understand how prices are set is vital to fostering trust and the momentum to make changes. It should be clear how much of the price is due to emissions reduction on the farm and national level.

A key factor in the pricing system is standardised reporting methods that can be embedded into the systems and providers chosen and trusted by farmers in an open market. Many agritech businesses already have support services for their farmer clients to understand and report on their operations. They are ready to assist on the enactment of standardised and transparent regulatory reporting requirements.

The pricing system should be flexible enough to adapt to actual progress against emissions reduction targets. Establishing ongoing feedback and adjustment mechanisms would enable the pricing system to evolve based on actual progress.

A fair and equitable pricing system will require inclusive decision-making. Involving key stakeholders, including producers, trade negotiators, industry representatives and climate advocates, in the pricing process can help ensure that the system is perceived as fair and meets the needs of all parties.

AgriTechNZ believes an equitable system will not penalise farmers who started mitigation and restoration before others is a key factor.

Conclusion

Thank you for the opportunity to provide feedback. We want to meet with MfE and MPI to discuss this submission and are willing to collaborate further on this important work.

Sincerely,

A handwritten signature in black ink, appearing to be "Brendan O'Connell", written over a light grey signature line.

Brendan O'Connell
Chief Executive
AgriTech New Zealand

Acknowledgements

AgriTechNZ would like to acknowledge the support of its community in forming these consultation responses.

The responses do not represent the view of any single member, and individual member views may differ from the perspectives presented. Still, the collective discussions have enabled AgriTechNZ to show an overall industry perspective.

We recognise the effort from representatives of: AgriZeroNZ, Blue Pacific Minerals, ChristchurchNZ, DairyNZ, FAR, Farm Focus, FarmIQ, Figured, FMG Insurance, Map of Agriculture NZ, NZTE, Onfarm Data, Overseer, Perrin Ag, ProTag, and Trev. Your leadership supports all of us.

AI Assistance Disclosure

Some elements of this document were partially drafted using an AI language model. The AI-generated initial content and provided suggestions; however, AgriTechNZ has reviewed and verified all information to ensure accuracy and alignment with our values and purpose.

Annex 1: Insights from Digital Adoption in Primary Industries study and report

AgriTech NZ commissioned a study and report on digital adoption in primary industries. This report was born from the belief that the best progress can be made when it is measured. The report provides an insight into quantified and qualified analysis drivers, barriers, and realities of digital adoption across primary industries that will assist in the emissions calculator, the data required and subsequent reporting.

The research is designed to provide actionable insight for agritech businesses, industry groups and public agencies seeking to unleash digital agriculture's potential and develop strategies to support farmers and growers.

Attitudes to digital adoption

- 59% of the surveyed population lean towards adopting digital technologies but for very different reasons and with other pathways to participation depending on the mix of motivations, pressures, and barriers.
- 41% sided with not seeing much value in using digital technology to run their business. This is a high proportion, though not unexpected considering knowledge levels are low, and the value of data sharing remains to be unlocked.

Attitudes to data sharing

- 64% of farmers and growers have confidence in the custodians of their data.
- 77% are happy to share data where it directly benefits them. This seemingly positive result is balanced by data showing only half of farmers and growers are data sharing.
- The most significant barriers to data sharing revealed by the survey included that farmers and growers did not believe their data would have value to anyone else. There is low recognition of the value of the data held on the farm and difficulty in unlocking the value of shared data. There is also a lack of clarity around who would want the information and why. This is what can lead to confusion, mistrust and fear. Confidence comes from knowing who is using it and for what. We believe that in the case of the emissions calculator and reporting, the need is clear, and the mistrust and fear will not be so much of a barrier; the issue will simply be gathering data from various systems.

Current use of digital technology

- Adoption is highest in business management (e.g., accounts, payroll and health & safety solutions). This may be the entry point for digital technology on farms, with many tools having been around for a long time and de-risked. It is also the case that an advisor or accountant supports these tools and that not all their functionality is realised. This is very pertinent to the discussion on the practice of emission reporting and pricing.

Digital confidence

- There is space to increase levels of confidence amongst farmers and growers. However, the number of farmers/growers attracted to technology was higher than those with low confidence.

- Knowledge levels of available technology are low, with only 24% of farmers/growers rating their knowledge as good/excellent.
- Analysis by primary activity type shows confidence levels are higher in Arable, Horticulture and Dairy and lowest amongst Beef farmers.

Key drivers and barriers of technology

When asked to rate the significance of several drivers (reasons) for adoption, the top three across the sectors were:

- Efficacy
- Ease of use
- Compliance and regulation

Population segments

An essential part of the report is the analysis of farmer and grower population segments based on a combination of intent to adopt, external pressures and barriers to adoption. We identify six population segments that will need different types and levels of support to realise the benefits of digital agriculture and will assist in the Emissions Levy System. Segmenting the data in this way enables us to better understand the pathways for digital participation for farming businesses.

- **Trailblazers:** this segment is more likely to be early adopters across operational areas and respond proactively to external pressures.
- **Persuadable:** This group is reasonably motivated to adopt and perceives fewer barriers than others. They would respond to effective communication.
- **Pragmatists:** This group is somewhat open to adoption but requires clarity on both the benefits and regulatory expectations.
- **Pressured:** This group is reluctant but recognises the need to change or use appropriate tools. For them, systems need to be easy to integrate and use.
- **Conservatives:** perceive higher barriers to adoption and believe technology may be for larger businesses. Easy access support during set-up and early-stage usage may also increase confidence.
- **Traditionalists:** more disengaged, have a low appetite for change, tend to be happy with how they have always done things or are committed to traditional farming methods.

A full copy of the report can be downloaded from [here](#)