

# Getting mitigation tools into the hands of New Zealand's farmers

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This paper provides an update on the Centre for Climate Action on Agricultural Emissions (The CCAAE). It outlines how the NZAGRC (New Zealand Agricultural Greenhouse Gas Research Centre) and AgriZero<sup>NZ</sup> (the Centre for Climate Action Joint Venture) as the parts of the CCAAE are working together and with MPI to deliver new emissions reduction technologies for New Zealand farmers.

### The Challenge

There is a clear trend that our global temperatures are warming. Those born in 2020 are facing a very different future to those born in the 1970s. We know our climate is changing, we know there will be more adverse weather events, and as a global society we need to do something about it. In New Zealand, about half of our carbon dioxide equivalent emissions are from agriculture. Emissions from agriculture are not just a New Zealand problem; this is a global problem. If we can crack being able to reduce emissions from agriculture, we can do that for others as well. We know agriculture is pivotal to New Zealand's economy, providing 75% of our exports, and farmers are a critical part of enabling us to have the lives we enjoy.

Our farmers are already efficient, but face pressures to reduce emissions further. Our global customers have set ambitious emission reduction targets through their supply chains, and this signal is growing stronger daily.

The challenge is to develop emissions reduction tools and technologies that are cost effective and fit for purpose for New Zealand farms as quickly as possible. The need for these has never been greater. Current options are better suited to barn-fed animals and more intensive farming systems; a lot easier than what we face in providing solutions for pasture-based systems. We need to ensure New Zealand's farmers have equitable access to affordable, effective solutions to reduce emissions.

What we are working to deliver is a future where farmers have the tools and technologies they need to reduce emissions and stay competitive; meeting or exceeding targets and meeting customer expectations.

We have made a lot of good progress over the last thirteen years. We can now breed low emission sheep. We understand that globally the methanogens in the rumen are largely the same. We know that we can inhibit methane and nitrous oxide, we can produce low emission feed, and there has been some progress toward a methane vaccine – but tools are not yet available that work in our systems. We understand there is not going to be a silver bullet, and what we actually need is silver buckshot - a suite of technologies that we can get over the fence for farmers so they can do what they do best.

### The Centre for Climate Action on Agricultural Emissions – overview and update

The Centre for Climate Action on Agricultural Emissions, established in 2022, is designed to accelerate the development and commercialisation of new mitigation technologies. It aligns AgriZero<sup>NZ</sup> – a new joint venture between industry and the Crown with a strong venture capital and commercial focus, and the NZAGRC – a funder and shaper of mitigations R&D established in 2009 with funding provided by the Crown. The CCAAE is supported by MPI which oversees the Crown's

investment and has a core role in ensuring effective and efficient domestic and international policy and regulatory pathways.

The CCAAE was established to address the emissions reduction challenge outlined above, respond to the desire from some of our largest agribusinesses to invest alongside government at scale in emissions reduction efforts, and to implement the work led by MPI to identify the critical R&D and other efforts required to accelerate the development of tools and technologies (Biological Emissions Reduction Science and Mātauranga Plan). All of these drivers highlighted the need for a strongly systematic approach. An R&D programme alone was insufficient. In the CCAAE we have a strong science and research arm, a strong commercial arm, and strong support from government.

While AgriZero<sup>NZ</sup>, MPI and the NZAGRC each have different focuses, they are driving towards the same outcome; tools and technologies developed as fast as possible, that are good for farmers, good for the environment, good for animals and good for our markets. The three parties have a strong operational and strategic relationship which supports our investment decisions and helps accelerate progress. We share resources and intel to collectively succeed. The whole is much greater than the sum of its parts.

### **The NZAGRC**

The NZAGRC is an R&D funder, working with research organisations across New Zealand and internationally, and hosted by AgResearch. The NZAGRC is focused on identifying the most critical research and development required, funding and managing the research, ensuring New Zealand has the capability and infrastructure required to deliver research, and ensuring everything is based upon robust science. Its investments range from cracking fundamental science questions, to supporting proof of concept of new technologies, and the R&D to help make low emissions farming a reality.

The NZAGRC has a broad research funding portfolio which includes areas such as: low methane sheep and cattle genetics programmes, methane inhibitors, methane vaccine, nitrous oxide inhibitors, looking at the viability of early life interventions to deliver long-term methane reduction, low emissions feeds, Māori based programmes focused on whole of system emissions reduction, monitoring and management of soil carbon, and exploring more radical farm system change to deliver emissions reduction. The NZAGRC also contracts work on behalf of MPI as part of its activities under the Global Research Alliance on Agricultural Greenhouse Gases, provides training for rural professionals, provides science information through the Ag Matters website, and undertakes global scanning of research progress and opportunities.

### **AgriZero<sup>NZ</sup>**

AgriZero<sup>NZ</sup> is a world first partnership between the government and major agribusiness companies, undertaking targeted investments and actions to accelerate development and commercialisation of new mitigations. Funds from agribusiness shareholders are matched by the Government dollar-for-dollar. AgriZero<sup>NZ</sup> uses a three-bucket system to guide their investments – these are the Catalyst Fund, Ventures Fund and Strategy & Engagement. The Catalyst Fund focuses on system-wide funding and unblocking constraints, while the Ventures Fund is focused on investing capital and capability to enable local and global ventures to be successful in New Zealand. With their strategy & engagement focus, AgriZero<sup>NZ</sup> is building global partnerships, providing feedback loops between New Zealand's global customers, regulators, researchers, start-ups and industry and assessing emerging trends.

AgriZero<sup>NZ</sup> is focused on having at least two to three tools suitable for our pasture-based farming systems widely in use in New Zealand by 2030 to support its ambition. It has so far confirmed over

\$17m in early investments. This includes co-investing with NZAGRC on vaccine and inhibitor research, investing alongside MPI, Massey and AgResearch in a new methane measurement facility, and ventures investments in a New Zealand startup with a slow-release bolus inhibitor technology, and a US startup developing a probiotic to reduce methane and boost productivity. More investment announcements are expected shortly.

### **Work with us**

This is very much a shared challenge – we have a strong partnership and a strong base, but in reality we will need the ideas, levers and functions of many. The Centre cannot deliver on its own – collaboration is critical to deliver on our ambition. We work together and with other public, private, and philanthropic investors, and leverage the expertise and efforts of researchers, developers, businesses, industry good organisations, farmers and growers, rural professionals, and more.

### **Links to further information:**

[AgriZero NZ | AgriZeroNZ](#)

[Progress Update | Scorecard Q2 FY24 | AgriZeroNZ](#)

[Annual Report 2023 | AgriZeroNZ](#)

[New Zealand Agricultural Greenhouse Gas Research Centre \(nzagrc.org.nz\)](https://nzagrc.org.nz)

[Home » Centre for Climate Action on Agricultural Emissions \(ccaee.govt.nz\)](#)

[Biological Emissions R&D Plan](#)

[Ag Matters website](#)