



ADIC SUBMISSION

Potential Regulatory Options for
Agricultural Emissions Inhibitor Products
in Australia

July 2026

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Executive summary

The Australian dairy industry recognises that methane-reducing technologies may become an important option alongside profitability, productivity improvements, genetics, feed management, pasture management and renewable energy, to help the dairy industry meet growing emissions reduction expectations from supply chains, financiers, customers and government.

These products are a potentially valuable tool, but not a blank cheque. Whether they are adopted at all will depend on whether they prove practical in Australia's pasture-based systems and make commercial sense for farmers. But whether they can be adopted *with confidence* depends on something prior: independent statutory assurance of animal safety, food safety, residue control, verified efficacy and ongoing post-market monitoring.

That assurance must come from government, not industry. Adoption ultimately rests on public confidence. Recent public reactions to methane inhibitors showed that confidence, that products are safe, effective and properly monitored, can only be credibly provided by independent government regulation, not industry self-assurance.

This submission therefore supports a nationally consistent regulatory framework that enables industry to adopt approved technologies with confidence.

The current regulatory framework does not provide that assurance.

Existing legislation was developed before agricultural emissions inhibitors emerged as a distinct class of products. As a result, Australia's current regulatory framework does not clearly allocate responsibility for independently assessing product efficacy, establishing food safety standards, supporting emissions accounting, or providing the public assurance needed to support widespread confidence in these technologies.

The Australian dairy industry recommends a government-led regulatory framework for methane inhibitors, with the APVMA established as the lead regulator through amendment of the Agricultural and Veterinary Chemicals Code Act 1994 (Agvet Code). This should be supported by complementary roles for FSANZ, DAFF, the Clean Energy Regulator and other relevant agencies. In contrast, nitrification inhibitors should continue to be managed through a strengthened co-regulatory approach reflecting their lower risk profile.

The proposed framework should be risk-based, proportionate and nationally consistent. It should require technology developers to bear the costs of generating safety, efficacy and residue data, while leveraging international evidence where appropriate and validating performance under Australian pasture-based conditions. The framework should also establish maximum residue limits, provide clear pathways for emissions claims and carbon accounting, include post-market surveillance, and ensure independent, government-led, public assurance and communication.

Importantly, regulation should enable informed adoption rather than mandate use. Decisions about whether and how approved technologies are adopted must remain with farmers and their supply chains. Farmers must retain choice, maintain ownership of farm data, and have a clear commercial incentive to adopt emissions reductions technologies

The role of regulation is therefore to enable safe, credible access through robust approval and surveillance, not simply to accelerate product entry. This reflects a deliberately enabling approach - as Australia has done with other agricultural innovations, the purpose of regulation is to facilitate a credible path to market for beneficial technologies rather than to impede it. The rigour of that regulation, not its absence, that gives the supply chain, consumers and trading partners the confidence which makes adoption possible at all. The role of government is to provide that independent framework, giving industry, consumers and export markets confidence in approved products, not to prescribe their adoption.

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Independent regulation benefits everyone across the supply chain.

It gives farmers confidence should they choose to adopt approved technologies, processors confidence to protect market access, governments confidence that products have been appropriately assessed, and consumers confidence that food safety remains paramount.

A practical, transparent and credible regulatory framework will support responsible innovation while protecting Australia's reputation for safe, high-quality dairy products.

Part 1: Background

1. Introduction

1.1. About the Australian dairy industry¹

Dairy is one of Australia's most significant rural industries, ranked third behind the red meat and wheat industries by farmgate value. In 2024–25, the industry generated about A\$5.97 billion in farmgate value, with 3,772 dairy farms and a national herd of about 1.3 million dairy cows producing 8,315 million litres of milk. The industry directly employs about 30,400 people across dairy farms and processing companies, predominantly in regional Australia, and supports substantial further employment through transport, distribution, farm services and research and development.

Table 1 Australian dairy industry key figures, sourced from Dairy Australia's 2025 'In Focus'.

\$5.97b Farmgate value 2024–25	8,315 ML Milk produced	3,772 Dairy farms	30,400 People employed
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The industry is a major contributor to Australia's export economy. In 2024–25, 36 per cent of Australian milk production was exported, with total dairy exports valued at A\$3.8 billion. Australia ranks fifth globally on dairy exports - behind New Zealand, the European Union, the United States and the United Kingdom. The top export markets by value are Greater China, Japan, Indonesia, Malaysia and Thailand, with about 85 per cent of exports destined for Asia. This export orientation is central to why trade-related regulatory assurance matters so much to the industry, as set out later in this submission.

Critically for this consultation, Australian dairy is overwhelmingly pasture-based. In a year of normal seasonal conditions, grazed pasture covers about 60–65 per cent of cattle feed requirements. At the same time, supplementary feeding has grown significantly as farmers adapt to drier conditions, with the national average feeding rate about 1.8 tonnes per cow per year with considerable variation in feeding systems across regions. This diversity of feeding systems has significant implications for how agricultural emissions inhibitor technologies can be delivered, independently assessed and practically adopted across the Australian dairy industry.

Any regulatory framework must be flexible enough to accommodate these different production systems.

1.2. About the Australian dairy industry Council and Dairy Australia

This submission is informed by the perspectives of the dairy industry's peak and service bodies.

¹ Dairy Australia, In Focus 2025

Australian dairy industry Council (ADIC)

The ADIC is the peak national body of the Australian dairy industry, representing the interests of dairy farmers and dairy processors through its two constituent bodies, Australian Dairy Farmers (ADF) and the Australian Dairy Products Federation (ADPF). It aims to create a more prosperous and sustainable future for the local industry and the regional communities that rely on it.

Australian Dairy Farmers

ADF is the national peak industry representative body for dairy farmers across Australia's six dairy-producing states. Its membership includes the State Dairy Farming Organisations from each state, as well as direct farmer members.

Australian Dairy Products Federation

ADPF is the national peak policy and advocacy body representing the post-farmgate members of the Australian dairy supply chain, including processors, traders and marketers. ADPF members process more than 90 per cent of Australian milk volumes and supply dairy products to domestic and export markets.

Dairy Australia

Dairy Australia is the national services body and research and development corporation (RDC) for the dairy industry. It is the industry's investment arm, funding research, development and extension that cannot be undertaken efficiently by individual farmers or companies and helping farmers adapt to a changing operating environment to achieve a profitable, sustainable industry.

1.3. Why this issue is material for dairy

The Australian dairy industry is not advocating for the adoption of any particular emissions reduction technology.

Rather, it is seeking an independent regulatory framework that gives farmers, processors, consumers and export markets confidence that products approved for use in Australia have been rigorously assessed against Australia's regulatory standards.

Enteric methane, produced through the digestive process of dairy cattle, represents about 60 per cent of the average dairy farm's greenhouse gas emissions. The dairy industry is likely to face increasing market expectations regarding emissions performance. Current evidence suggests methane mitigation technologies are likely to become an important component of achieving the deeper emissions reductions expected across the dairy supply chain. While productivity gains, herd management, feed and fertiliser optimisation and renewable energy will all contribute to reducing emissions, current evidence suggests these measures alone are unlikely to achieve the deeper reductions increasingly expected by customers, financiers, governments and supply chains.

The pressure to reduce emissions is intensifying from multiple directions simultaneously: supply chain Scope 3 expectations from processors and retailers; climate-related disclosure frameworks; processor emissions targets; retailer and financier requirements; emerging insetting and carbon market frameworks; and national and international methane emissions reduction agendas. The Australian dairy industry, through its farmers, processors and industry organisations, is collaboratively developing the Australian dairy industry Emissions Reduction Action Plan, which recognises meaningful progress will require coordinated support and access to emerging technologies.

At the same time, the industry's pasture-based structure, its export exposure, and the central importance of milk quality and composition to farmer returns mean the way these technologies are regulated matters enormously. A regulatory framework that provides independent, transparent government oversight will give dairy farmers and processors confidence to adopt approved technologies where they are appropriate, while maintaining consumer trust and protecting export markets.

Conversely, regulation that is poorly designed, disproportionate, lacks public credibility or insensitive to the realities of pasture-based systems risks slowing adoption of approved technologies, while loading costs onto farmers who are price-takers in globally competitive markets.

1.4. Why dairy's voice matters in this consultation

Australian dairy is distinct from other livestock sectors in ways directly relevant to AEI regulation:

- its pasture-based systems create delivery challenges not present in housed or feedlot operations
- its products enter the human food supply as milk, where compositional changes affect both safety perceptions and farmer payments, and
- its heavy export orientation makes trade assurance critical.

These characteristics mean Australia's dairy industry has unique regulatory requirements that should be reflected in the design of any future framework. A one-size-fits-all approach across livestock sectors risks overlooking the practical realities of pasture-based dairy systems and the importance of maintaining confidence in dairy products domestically and internationally.

Part 2: Preferred Regulatory Model

2. The problem with the status quo

The DAFF discussion paper correctly identifies Australia's existing regulatory framework was developed before agricultural emissions inhibitors emerged as a distinct class of products. As these technologies continue to evolve, there is now an opportunity to establish a clear, nationally consistent framework that provides confidence to industry, consumers and export markets.

Maintaining the current arrangements would leave uncertainty about how new technologies are independently assessed, how food safety is demonstrated and how public confidence is maintained.

The status quo carries material risks for the dairy industry that will crystallise as product availability increases and as supply chain expectations around emissions performance intensify.

As agricultural emissions technologies continue to develop, a clearer regulatory framework will become increasingly important to support confidence across the supply chain.

2.1. Legislative gap at the centre of the framework

The core of the problem is the Agricultural and Veterinary Chemicals Code Act 1994 (the Agvet Code). The definitions of 'agricultural chemical product' and 'veterinary chemical product' in that Act were designed for a world of pesticides, herbicides and veterinary medicines - products that act on pests, diseases or animal physiology. They were not designed for products whose primary purpose is reducing greenhouse gas emissions from rumen digestion or soil bacteria.

Because methane inhibitors do not treat a disease, alleviate a condition, or modify animal physiology in the sense the Code envisages, the APVMA has no legal authority to require pre-market safety assessment, set conditions of use, or establish maximum residue limits (MRLs). Because FSANZ's MRL-setting function is downstream of APVMA registration, the Food Standards Code cannot set residue limits for AEIs either. The result is a product category that can be sold, fed to animals and enter the human food supply with no government body having independently verified its safety, efficacy or residue profile.

The four functions critical to confident adoption of AEIs (efficacy verification, food safety MRLs, trade protection, and emissions accounting) have no effective home. Partial responsibilities are spread across many bodies, but no single agency can:

- assure a consumer a product is safe

- identify to a trading partner residues are controlled, or
- verify to a carbon market that an emissions reduction is real.

In the event of a safety incident or trade dispute, clearly defined regulatory responsibilities would allow government to respond quickly, consistently and transparently.

2.2. The cost of inaction is not zero

The discussion paper notes that no immediate health, environmental or safety concerns have been identified from AEIs currently on the market. This is reassuring, but it is not an argument for retaining the status quo. The absence of a known problem is not the same as the presence of adequate safeguards.

Several dynamics are converging that will make the current gap increasingly untenable. The number of AEI products seeking market entry is growing, with varying evidence bases and risk profiles that the current framework cannot distinguish between. Australia's major export markets (including the European Union, the United Kingdom, Japan and South Korea²) are actively developing or have established regulatory frameworks. Supply chain customers with sustainability commitments and climate disclosure obligations are increasingly seeking assurance that on-farm inputs have been independently assessed. And the public reaction to Bovaer in the United Kingdom and Australia in 2024 showed how rapidly consumer anxiety and misinformation can spread when there is no authoritative, government-backed source of assurance to point to.

The consequence is not simply a legislative gap. It is a confidence gap. Without clearly defined regulatory responsibilities, farmers, processors, consumers and export markets lack an independent source of assurance that products have been assessed against Australia's regulatory standards.

3. Roles a regulatory system must play

In the Australian dairy industry's view, an adequate regulatory framework for AEIs must perform eight core roles.

The role		What the system must do, and why it matters
1	Pre-market safety assessment	Independently verify that a product is safe for the animal, for humans consuming the resulting food, for workers handling it, and for the environment - before it is used at scale - not after.
2	Efficacy verification	Independently confirm a product delivers the emissions reduction it claims. Without this, every downstream claim (trade, carbon, marketing) rests on an unverified assertion.
3	Residue standards and food safety	Establish maximum residue limits (MRLs) and the testing capability to enforce them, so that 'safe' means measured against a defined, defensible standard rather than assumed.

² Tricarico, J.M. *et al.* (2025) 'Feed additives for methane mitigation: Regulatory frameworks and scientific evidence requirements for the authorization of feed additives to mitigate ruminant methane emissions', *Journal of Dairy Science*, 108(1), pp. 395–410. doi:10.3168/jds.2024-25051.

	The role	What the system must do, and why it matters
4	Trade and market access assurance	Set standards trading partners recognise, certify compliance, and engage internationally - an inherently governmental function that protects export access and cannot be performed by industry alone.
5	Emissions claim verification and accounting interoperability	Connect product approval to the carbon accounting systems (ACCU, Scope 3, national inventory) so verified reductions can be recognised consistently and credibly across frameworks.
6	Consumer assurance and communication	Provide an authoritative, independent government source of information on how products have been assessed, approved and monitored. Independent regulation gives farmers, consumers and export markets confidence while providing a trusted source of information to address misinformation when it arises.
7	Post-market surveillance	Monitor approved products in real-world use and respond to adverse signals. Pre-market assessment alone is not enough, as recent international experience has shown.
8	Coordination and single point of accountability	Provide one clear regulatory entry point and a single agency ultimately accountable for the effective operation of the framework.

3.1. How these roles should be performed

Beyond the roles themselves, the Australian dairy industry proposes a set of principles that should govern how they are carried out, regardless of which body holds each role:

- **Proportionate and risk-based:** the intensity of regulation should reflect the risk profile of the product, with methane inhibitors and nitrification inhibitors treated differently.
- **Independent where credibility matters:** safety, efficacy and consumer assurance must sit at arm's length from the party selling the product.
- **Public confidence:** the framework should provide transparent, evidence-based information that enables farmers, consumers and export markets to have confidence in approved technologies, without implying government endorsement or mandating adoption.
- **Evidence burden on the technology owner:** the party seeking commercial gain generates and funds the evidence; costs should not fall on farmers.
- **Commonwealth-level and coordinated:** a single national framework, not a fragmented state-by-state or multi-regulator patchwork.
- **Internationally aligned:** leveraging comparable jurisdictions' evidence to avoid duplication, while validating for Australian conditions and not exceeding the requirements placed on competitors.
- **Practical and enabling** fit for diverse pasture-based feeding systems - built to accommodate the full range of Australian dairy feed systems, from fully pasture-based to mixed-ration, without excluding viable products or locking out future grazing-suited technologies.
- **Regulatory transparency:** approval decisions, supporting evidence and conditions of use should be communicated transparently through publicly available government information to support confidence in Australia's regulatory system.

- **Technology neutral:** the framework should support all emissions reduction technologies that can demonstrate safety and efficacy, without favouring one technology or delivery mechanism over another.

4. Proposed future regulatory framework

The Australian dairy industry's preferred model is independent government regulation for methane inhibitors, co-designed with industry, with the APVMA as lead regulator operating under a mandate extended through amendment to the Agvet Code. This is supported by a co-regulatory approach for nitrification inhibitors, and clearly defined complementary roles for FSANZ, DAFF, the Clean Energy Regulator and state and territory authorities.

The framework must be kept at the Commonwealth level. The Australian dairy industry does not support a state-by-state 'permission to use' regime of the kind that has complicated the rollout of other emerging agricultural technologies. States may have a role in control-of-use compliance through existing audit mechanisms but should not require separate or duplicative regulation to perform it. The state/federal split should be explicitly reviewed and clarified as part of the new framework, with clear accountability and a defined process for any national-lead / state-adopt model.

The purpose of this framework is not to encourage or mandate the adoption of AElS. It is to ensure that, where products are approved for use in Australia, farmers, processors, consumers and export markets can have confidence in the integrity of the regulatory system.

4.1. Roles and responsibilities in the proposed system

The following table contains the same actors as the current state system but sets out the role each would play in a functioning future framework. The 'Roles' column links each actor to the eight roles defined in Section 3, so the allocation can be read directly against that list.

Actor / system	Level	Roles (section 3)	Role in proposed framework
APVMA (lead regulator)	Federal	1, 2, 7, 8	Lead agency for methane inhibitors under an amended Agvet Code. Conducts integrated pre-market assessment of safety, efficacy and residues; sets conditions of use; issues time-limited approvals with post-market surveillance conditions. Acts as the single regulatory entry point and authoritative source of regulatory information for approved products.
FSANZ	Federal	3	Establishes MRLs in the Food Standards Code, triggered by APVMA registration; harmonises with Codex where appropriate. MRLs may be differentiated by feeding system where residue profiles differ.
DAFF	Federal	3, 4, 8	Policy coordination and cross-agency harmonisation; National Residue Survey tests against established MRLs; Export Standards Branch engages trading partners and represents Australia at Codex. Leads whole-of-government communication on Australia's regulatory

Actor / system	Level	Roles (section 3)	Role in proposed framework
			framework for AELs, including food safety, residue monitoring and market assurance.
Clean Energy Regulator / DCCEEW	Federal	5	Develop ACCU methodologies built on APVMA-verified efficacy data; ensure interoperability with Scope 3 and national inventory accounting.
VEERG³ / research institutions	Industry / Fed	2, 5	Define emissions claim standards and provide independent efficacy review drawing on agricultural expertise; underpin the tiered claims framework.
AICIS	Federal	1	Continues active-ingredient assessment for nitrification inhibitors within the co-regulatory pathway.
State / territory authorities	State	7	Support control-of-use compliance through existing audit mechanisms - without additional standalone regulation or a separate permission-to-use regime.
ACCC	Federal	8	Provides clear guidelines on acceptable efficacy and environmental claims; enforces against misleading marketing within the agreed standards.
Technology owners (manufacturers/importers)	Market	1, 2, 3	Bear full cost recovery; generate, commission or fund all required pre-market safety, efficacy and residue data (including milk compositional data), subject to independent regulatory assessment; remain responsible for the evidence underpinning all claims. Industry should not be expected to provide primary public assurance on product safety.
Processors / RDCs / industry	Market	6	Provide guidance on use after approval; conduct local validation; integrate compliance into existing assurance systems; support consumer education and communication.

³ Voluntary Emissions Estimation and Reporting Guidelines group

4.2. Why methane inhibitors warrant government-led assurance

The assurance has to be independent to be believed

Methane inhibitors are fed directly to food-producing animals, and what enters the animal can affect the milk and meat that reach consumers and trading partners. For an assurance about that to carry weight, it cannot come from the party selling the product. Consumers, export customers and trading partners place weight on independent, government-backed assessment in a way they do not for manufacturer self-assessment - particularly for anything touching the human food supply. Industry can act responsibly and communicate accurately, but it cannot substitute for the credibility that an arm's-length government approval confers. This is the central reason self-regulation and co-regulation are not sufficient for this product class.

Independent regulation is not about government promoting methane inhibitors. It is about ensuring that, where products are approved, the public can have confidence that they have been assessed against Australia's food safety, animal health, environmental and regulatory standards.

The risks are real possibilities that must be tested, not assumed away

The relevant risks, including residues in food, effects on animal health and welfare, and impacts on productivity and milk quality, are genuine possibilities that need to be actively assessed before products are used at scale, not presumed to be neutral. The point is not that harm is known to exist; it is that no one in Australia has independently verified that it does not. Recent international experience reinforces the need for this discipline: the comprehensive EU assessment of 3-NOP required detailed residue and safety work before approval⁴, and a 2026 animal-health signal on Danish dairy farms using an approved product shows that even rigorous pre-market assessment must be paired with ongoing post-market surveillance⁵. A framework that only assesses products once, or that assumes overseas approval transfers automatically to Australian conditions, would not deliver genuine assurance.

Only government can underwrite trade and market access

Much of the value of assurance is about protecting access to markets, and that is an inherently governmental function. Only government can set the residue standards trading partners recognise, test against them, and certify compliance. International standard-setting is already moving - and as those standards land, Australia needs a domestic framework capable of demonstrating its product complies. Without one, the industry is left reactive and exposed. Industry simply cannot perform this function on its own; it depends on a government framework standing behind it.

4.3. A co-regulatory approach for nitrification inhibitors

Nitrification inhibitors present a different risk profile. They are applied to soil rather than directly to animals, their pathway to human food is indirect, and they have been used in Australian agriculture for some time, with AICIS already providing active-ingredient oversight. For these reasons, full statutory pre-market assessment by the APVMA is not proportionate at this time.

⁴ European Food Safety Authority (EFSA) FEEDAP Panel, Bampidis V, Azimonti G, Bastos M de L, et al. (2021), 'Safety and efficacy of a feed additive consisting of 3-nitrooxypropanol (Bovaer® 10) for ruminants for milk production and reproduction (DSM Nutritional Products Ltd)', *EFSA Journal*, 19(11):6905. DOI: 10.2903/j.efsa.2021.6905.

European Food Safety Authority (EFSA) (2026), *Call for data on the use of 3-nitrooxypropanol in ruminants*, EFSA-Q-2026-00024, published 3 February 2026. Available at: efsa.europa.eu/en/call/call-data-use-3-nitrooxypropanol-ruminants

The Australian dairy industry recommends nitrification inhibitors are regulated through a strengthened co-regulatory approach - building on the existing Fertiliser Australia National Code of Practice, developing national standards for labelling and efficacy claims, and clarifying state and territory enforcement responsibilities. This should be reviewed assessing whether product volumes, residue incidents or trade pressures change the risk profile. Where nitrification inhibitors are applied to pastures grazed by dairy cattle rather than to cropping soils, the indirect exposure pathway warrants closer attention, and the framework should accommodate this.

Part 3: Critical elements of proposed regulatory framework

5. Efficacy, emissions claims, and accountability

Assured efficacy underpins the credibility of the entire regulatory framework. Without independent verification a product actually reduces emissions as claimed, the entire carbon accounting system (carbon credits, Scope 3 reporting, consumer claims, market premiums) rests on an unverifiable assertion.

5.1. The evidence burden sits with the technology owner

The Australian dairy industry believes the obligation to generate and fund the evidence base sits with the technology owner (i.e., the part the stands to make the commercial gain), not with industry or farmers. Industry bodies can provide guidance on product use, but only once a product has been through proper review and granted regulatory approval. This principle should be explicit in the regulation.

5.2. A tiered, risk-based evidence framework

The Australian dairy industry supports a tiered approach in which the standard of evidence required is proportionate to the nature and magnitude of the claim being made. This is consistent with international practice and with the approach advocated in the Tricarico et al. (2025)⁶ review of evidence requirements across the UK, EU, Canada, USA, South Korea, and New Zealand.

Tier	Claim type	Evidence standard and verifying body
Tier 1	Product label claims (e.g. 'reduces methane by X%')	3+ independent in vivo long-term studies using internationally recognised measurement methods. Assessed by APVMA at approval. ACCC guidelines apply to marketing.
Tier 2	Supply chain / Scope 3 emissions reporting	VEERG-endorsed methodology aligned to GHG accounting standards. Industry-led, using government recognised methodologies. No on-farm individual measurement required.

⁶ Tricarico, J.M. et al. (2025) ‘Feed additives for methane mitigation: Regulatory frameworks and scientific evidence requirements for the authorization of feed additives to mitigate ruminant methane emissions’, *Journal of Dairy Science*, 108(1), pp. 395–410. doi:10.3168/jds.2024-25051.

Tier	Claim type	Evidence standard and verifying body
Tier 3	ACCU carbon credit claims	CER-approved methodology built on APVMA-verified efficacy data. DCCEEW policy lead. Must satisfy Offsets Integrity Standards.

This structure reserves the most resource-intensive requirements for the highest-stakes claims, provides a pathway for products to build an evidence base before seeking ACCU recognition, and creates explicit interoperability between regulatory approval and emissions accounting. A single agreed set of standards should be developed and adopted across industry, rather than competing frameworks.

5.3. Measurement, local validation and verification

The Australian dairy industry supports internationally recognised methane measurement methods as the basis for efficacy studies, consistent with EFSA's 2024 guidance. However, results from housed or total mixed ration systems overseas cannot be assumed to translate to Australian pasture-based systems. The Australian dairy industry recommends that the framework require, or strongly weight, at least one in vivo efficacy study conducted in Australian pasture-based conditions as a condition of approval, with the existing international data accepted as the primary efficacy basis.

This diversity of feeding systems also has a specific implication for residue standards. Different feeding systems may require different usage levels to achieve the same efficacy, which could in turn produce different residue profiles. Efficacy and residue evidence should therefore be generated across representative Australian feeding systems, and MRLs should be capable of being differentiated by feeding system where the evidence supports it, rather than assuming a single usage pattern.

On verification, The Australian dairy industry is clear: **individual on-farm measurement of emissions should not be required**. Verification requirements should not become a new administrative burden for farmers. Existing assurance systems should be used wherever possible and any additional reporting should only occur where there is a demonstrated regulatory need. The practical barriers make it unworkable at scale, and it would not be materially more reliable than population-level estimates derived from validated efficacy studies and dosing records. Verification should be built into existing systems (i.e., dosing records, product purchase data, and milk quality audits) rather than imposed as a standalone compliance obligation.

6. Food safety, trade, and consumer confidence

The Australian dairy industry believes that food safety and export market protection are the most time-sensitive drivers for regulatory action. Codex activity, trading partner regulation, and growing retailer and financier scrutiny are all moving faster than the domestic regulatory process. Australia needs to position itself ahead of these pressures, not in response to them.

6.1. Maximum residue limits must be established

The absence of MRLs for AElS in the Food Standards Code is the single most significant food safety and trade exposure in the current framework. The Code prohibits residues where no MRL is set, but this provides no practical assurance: there is no testing program to enforce it, no standard to test against, and no mechanism for government to credibly communicate that it has assessed the risk.

Establishing MRLs requires APVMA registration as a first step, which loops back to the need for Agvet Code amendment. As such, the Agvet Code amendment should be progressed as the priority enabling action because it unlocks every other component. Once MRLs are set - differentiated by feeding system where the evidence supports - they can be incorporated into the National Residue Survey, providing the

monitoring capability that export customers and trading partners need to see. MRLs should be established for both domestic and international assurance purposes.

6.2. Different stakeholders require different assurances

A point raised clearly in industry consultation is that different stakeholders need different things from the assurance framework. Consumers are concerned with health, food safety, environmental safety and animal welfare. Retailers, processors and financiers are concerned with Scope 3 targets, brand reputation and disclosure obligations. Trading partners are concerned with residue compliance. A framework that addresses only one of these, or assumes a single audience, will not deliver the confidence the industry needs. The tiered claims framework (Section 5) and the government-led communication function (Section 6.3) are both designed to speak to these distinct audiences.

6.3. Government must lead on consumer and market communication

The Australian dairy industry believes government has a critical role in communicating the operation of Australia's regulatory framework for approved agricultural emissions inhibitors. Independent government assessment provides consumers, processors, exporters and trading partners with confidence that approved products have been rigorously assessed against Australia's food safety and regulatory standards.

Industry has an important role in supporting implementation and providing technical guidance. However, industry should not be expected to provide primary public assurance regarding product safety or efficacy. That confidence must come from an independent regulatory system.

The Australian dairy industry recommends that any approved AEI product be listed on a publicly accessible government register, with summary information on the evidence reviewed and conditions of approval. This provides a single reference point for consumer enquiries, export due diligence and procurement decisions, and supports market assurance statements used by DAFF or individual exporters. Government communication should focus on explaining Australia's independent regulatory process, the evidence supporting approval decisions and the safeguards in place to protect food safety, rather than responding only when concerns arise. Existing dairy quality assurance programs should be recognised and utilised wherever appropriate rather than creating additional audit systems.

7. Commercial return, cost, and practical adoption

Regulatory frameworks for AEIs will only achieve their objectives if farmers actually use the products. This process also needs to consider the practical and commercial questions, such as, does it work in my system, can I afford it, will I be compensated, and what happens to my milk and my data.

7.1. Regulation should assure, not mandate

The Australian dairy industry firmly believes that the role of regulation is to assure safety, efficacy and market acceptance, not to mandate or prescribe the use of AEIs. Farmers must retain the ability to choose whether and how to use these products.

Critically, if society, government, processors or markets want the environmental outcomes that AEIs deliver, the costs cannot simply be pushed back onto farmers. There must be a demonstrated commercial benefit, or farmers must be appropriately compensated for delivering emissions reductions. There must be a clear adoption rationale.

7.2. Farm data ownership

Any data generated through AEI use, monitoring or verification must remain subject to farmer ownership, consent and privacy protections. Farmers must retain ownership and control of farm data. Farm data must not be used, disclosed, shared or commercialised without informed farmer consent and should

not be used for secondary regulatory or commercial purposes beyond those agreed by the farmer. As emissions monitoring and supply chain reporting expand, the volume of farm-level data being generated and requested is growing rapidly. The framework should make explicit that the farmer retains ownership of and control over their data, and that participation in AEI verification does not erode those rights.

7.3. International competitiveness

Australian dairy farmers should not be disadvantaged through regulatory requirements that exceed those imposed on imported products or on major international competitors. This is particularly relevant given the Australia–EU Free Trade Agreement and the broader trade environment. A framework that holds Australian producers to a higher standard than the imported product sitting next to theirs on the shelf would impose a competitive penalty without a corresponding food safety or market benefit. International alignment through leveraging comparable jurisdictions' standards rather than exceeding them without cause, protects both assurance and competitiveness.

7.4. Pasture-based delivery is the defining practical barrier

The most significant practical barrier to methane inhibitor adoption in Australian dairy is delivery. The products with the most comprehensive international approval bases are designed for or tested predominantly in systems where cattle receive a controlled ration. In Australian dairy, cattle graze pasture for much of their lives, and while many herds receive concentrate in the bail or on a feed pad at milking, offering one potential delivery point, the proportion of the diet delivered this way varies widely, and fully pasture-based systems and non-milking classes of stock may have no reliable daily supplementation event at all. DCCEE's MERiL programme is funding work on delivery technologies for grazing systems, including slow-release bolus and vaccine approaches; this is a useful investment. The regulatory framework should be designed to accommodate these emerging delivery modalities as they mature, rather than being calibrated exclusively to currently available products.

Part 4: Summary and conclusion

8. Summary of recommendations

The Australian dairy industry recommends that the Australian Government:

1	Amend the Agvet Code as the priority action	Progress amendment of the Agvet Code to bring methane inhibitors within a statutory mandate. This is the single enabling action that unlocks MRLs, residue testing, trade assurance and the lead-agency model that everything else depends on.
2	Adopt government-led regulation for methane inhibitors	Regulate methane inhibitors through a government-led, co-designed framework with the APVMA as lead regulator, kept at the Commonwealth level rather than a state-by-state permission-to-use regime, while maintaining voluntary adoption by farmers
3	Apply a co-regulatory approach to nitrification inhibitors	Manage nitrification inhibitors through a strengthened co-regulatory model reflecting their lower risk profile and existing AICIS oversight, with explicit triggers for review or escalation where trade, residue, exposure or market risks increase.
4	Establish a single point of accountability	Designate one agency, most appropriately the APVMA, with DAFF coordinating policy across FSANZ, the CER and the states, as the 'source of truth' a manufacturer, farmer or trading partner can turn to, and as the body ultimately accountable for the framework.
5	Establish MRLs and a tiered efficacy framework	Set MRLs through the APVMA–FSANZ pathway, differentiated by feeding system where the evidence supports it, and adopt a tiered, independently verified framework for efficacy and emissions claims that is interoperable with carbon accounting systems.
6	Place the evidence and cost burden on technology owners	Require full cost recovery from manufacturers and importers, with applicant-funded safety, efficacy and residue data, and safeguards preventing those costs being passed back to farmers through levies or supply chain charges.
7	Leverage international evidence, validate locally	Draw on the EFSA, Canadian, New Zealand and US assessments to avoid duplicative testing, while requiring validation in Australian pasture-based conditions and not exceeding the requirements placed on competitors or imports.
8	Build in post-market surveillance and consumer assurance	Require mandatory post-market surveillance, adverse-event reporting, periodic review and public transparency as conditions of approval, and ensure government leads authoritative public communication on approved products, evidence reviewed and conditions of use.

9	Protect farmers' interests	Ensure regulation assures rather than mandates use, that farmers see a genuine commercial return, that farm data remains under farmer ownership and consent, and that adoption is supported by transitional and grandfathering arrangements.
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9. Conclusion

The Australian dairy industry will increasingly face market and supply chain expectations regarding emissions performance. Farmers require access to practical, affordable and credible technologies should they choose to adopt them. Farmers and supply chains need confidence that these technologies are safe, effective and will not create risks for food safety or export markets. That confidence requires a robust, transparent and independent regulatory framework.

The current system does not provide that assurance. As outlined in this submission, important functions including efficacy verification, food safety residue limits, trade protection and emissions accounting are not clearly addressed under existing arrangements. Waiting for a problem to emerge before acting would expose farmers, processors and export markets to unnecessary risk.

At the same time, regulation must be practical and proportionate. It must reflect the realities of Australia's pasture-based dairy systems, support adoption rather than create barriers, and ensure farmers are not burdened with unreasonable costs or obligations. Farmers must retain control of their data and have a clear commercial incentive to adopt these technologies.

The Australian dairy industry believes a practical and proportionate solution is available. The recommended approach combines targeted legislative changes, clear regulatory oversight, risk-based verification requirements and strong industry involvement in design and implementation.

The purpose of this framework is not to promote or mandate the adoption of agricultural emissions inhibitors. Rather, it is to establish an independent regulatory system that gives farmers, processors, consumers and export markets confidence that products approved for use in Australia have been rigorously assessed against Australia's regulatory standards.

We look forward to working with government to develop a framework that protects confidence in these technologies while supporting their practical use on Australian dairy farms.



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