**Level 3: Future Proofing Strategies**

**Environmental and Political Strategies**

**Teachers Note:**

**Objective:** To understand New Zealand’s methane emission targets, explore strategies for measuring and reducing methane on farms, and consider the impact of these strategies on the future of sheep and beef farming businesses.

Activity 1: Understanding the coalition government’s methane targets

Activity 2: Applying knowledge to farming practices

Activity 3: Sheep and beef farming agribusiness scenario-based activity

**Government Sets Methane Targets For 2050**

<https://www.beehive.govt.nz/release/government-sets-methane-targets-2050>

The Coalition Government has today announced science-based biogenic methane targets for 2050, providing farmers and exporters with a clear pathway to reduce emissions while maintaining productivity and trade competitiveness.

Following Cabinet approval, the target will be set at a range of 14–24% below 2017 levels by 2050, reflecting the findings of the independent Methane Science Review released in 2024.

“We have accepted a range of advice and worked closely with industry to agree a practical target that protects food production whilst substantially reducing New Zealand’s farm emissions. Today we are delivering a practical, fair pathway that recognises New Zealand agriculture efficiency, protects jobs and production, and upholds our climate commitments,” Agriculture and Trade and Investment Minister Todd McClay says.

“The Government remains committed to our domestic and international climate change commitments, including net zero by 2050. Agriculture will continue make an important and fair contribution to achieving this reduction,” Climate Change Minister Simon Watts says.

The Coalition Government confirmed further policy changes alongside the new target:

* A legislated review in 2040 of the biogenic methane target to ensure its alignment with science and against progress of key trading partners.
* No tax on agricultural methane emissions as this would risk closing down farms and send jobs and production overseas. Reductions in methane to meet the targets will be achieved in partnership and through industry leadership and processor incentives following the lead of companies like Fonterra and Silver Fern Farms.
* Investigate a split gas target for all of New Zealand’s future international climate change commitments.
* Recognise and protect the importance of food production in New Zealand by better aligning domestic legislation with language in the Paris Agreement.

To back the new target, the Government is already investing more than $400 million with industry to speed up the development and roll-out of methane-cutting tools. The first is expected on farm in 2026, with up to 11 available by 2030. These include innovations like EcoPond, which cuts effluent pond emissions by over 90%, alongside advances in genetics, feed and farm management.

“Technology has the potential to deliver emissions reductions, while enabling the sector to grow. It is expected that if 30% of farmers take up the technologies expected to be available before 2030, total agricultural emissions could reduce by between 7 to 14% over the next decade. That is on top of any reduction in emissions that may come from efficiency gains on-farm or changes to farm systems,” Mr Watts says.

“It will be up to each farmer, processor, and company to decide how best to meet their own commitments, using the tools and innovations that fit their business.”

"We have recognised the short-lived nature and different warming impact of methane domestically. So, it is long overdue that we look into whether this same approach is appropriate in our international commitments," Biosecurity and Food Safety Minister Andrew Hoggard says.

“To allow farmers to better measure their methane and evaluate ways to reduce their emissions without harming production, today we are also releasing an on-farm emissions calculator, which will today be available on the Ag Matters website,” Mr McClay says.

“Our approach is clear: technology and partnership, not taxes, will deliver the reductions that we need. By investing in new tools and giving farmers practical support, we can cut emissions without cutting production or profitability,” Mr Watts says.

Today’s announcement follows recent legislation limiting full-farm forestry conversions into the Emission Trading Scheme (ETS), as part of a wider reset of climate policy to restore balance and certainty for rural New Zealand.

“Our primary sector earns nearly $60 billion in export revenue and provides more than one in ten Kiwi jobs. By setting sensible targets and backing innovation, we’re ensuring New Zealand farmers remain world leaders in producing high-quality, safe, and sustainable food, while meeting our international commitments,” Mr McClay says.

**Activity 1:**

In groups:

1. Summarise the key points of the Coalition Government’s announcement on methane targets for 2050.
2. Identify and highlight the key reasons why the Coalition Government has introduced methane targets for 2050.
3. Describe the strategies to:

* Measure methane emissions.
* Reduce methane emissions.

**Activity 2:**

Read the article below and using the information from Activity 1 answer the questions.

**Agriculture cutting emissions without pricing**

Beef+Lamb New Zealand says farmers have already made good progress in cutting methane emissions. Methane from farms is 3.7% lower than in 2017, and overall methane emissions, including waste, are down by 4.1%. However, these reductions mostly come from turning sheep and beef farms into forests to earn carbon credits, which means fewer animals are being raised.

Beef+Lamb New Zealand warns that this is not a good long-term solution because it reduces farming land and jobs. They want farmers to use new technology, better animal breeding, and smarter farm management to cut methane instead of relying on planting trees.

The government is trying to balance farming and climate goals. Farmers do not have to pay taxes on methane emissions yet, but they do pay carbon taxes on fuel and fertiliser. There is also concern about nitrous oxide, a gas from fertilisers that also affects the environment. Better fertiliser use could help reduce these emissions*.*

***Adapted from Beef+Lamb NZ: Agriculture cutting emissions without pricing***

1. List three ways farmers can reduce methane emissions without cutting down the number of animals they farm.
2. Why might turning farms into forests be a problem for sheep and beef farming businesses?
3. Discuss how using technology and better farm practices can help farmers meet climate goals while keeping their farms productive.

**Activity 3:**

*You are a sheep and beef farmer facing pressure to reduce methane emissions.*

* Choose one strategy to reduce methane on your farm (e.g., adopting new technology, improving animal genetics, or changing farm management practices).
* Explain how you would use this strategy on your farm.
* Describe how this strategy could affect the long-term success and sustainability of your farming business.

**Answers**

**Activity 1:**

**Summary of key Points:**

* The Coalition Government has set science-based biogenic methane reduction targets for 2050 at 14–24% below 2017 levels, based on the Methane Science Review (2024).
* The targets aim to reduce emissions while protecting food production, jobs, and trade competitiveness in New Zealand’s agricultural sector.
* The government will not tax methane emissions from farms to avoid risking farm closures and job losses. Instead, reductions will be driven through partnerships, industry leadership, and processor incentives.
* A review of the methane target is planned for 2040 to ensure it stays aligned with scientific findings and global trading partners’ progress.
* The government will investigate a split gas target approach for New Zealand’s international climate commitments, recognizing methane’s short-lived but potent warming effects.
* Over $400 million is being invested to develop and deploy methane-cutting tools, with the first technologies expected on farms by 2026 and up to 11 technologies by 2030. Examples include:
  + EcoPond (reduces effluent pond emissions by over 90%)
  + Advances in genetics, feed, and farm management.
* If 30% of farmers adopt new technologies by 2030, methane emissions could drop by 7–14% over the next decade, plus additional reductions from efficiency improvements.
* A new calculator tool is released to help farmers measure and evaluate their methane emissions and explore reduction options, available on the Ag Matters website.
* Legislation now limits full-farm forestry conversions into the Emissions Trading Scheme (ETS) to maintain balance in rural climate policies.
* The primary sector generates nearly $60 billion in exports and provides over 10% of Kiwi jobs. The government emphasizes maintaining New Zealand’s position as a leader in sustainable food production.

2. Reasons why the Coalition Government announced methane targets for 2050 to:

* Provide a clear, science-based pathway for farmers and exporters to reduce biogenic methane emissions while maintaining productivity and trade competitiveness.
* Balance environmental goals with economic interests by protecting food production, jobs, and New Zealand’s position as a world leader in sustainable agriculture.
* Uphold New Zealand’s domestic and international climate commitments, including the net zero target by 2050.
* Encourage innovation and partnership in the agriculture sector to reduce emissions without imposing taxes that could harm farms or lead to job losses.
* Reflect the latest scientific findings from the independent Methane Science Review (2024), ensuring targets are practical, fair, and aligned with global standards.
* Invest in and accelerate the rollout of methane-cutting technologies to help farmers achieve emission reductions while growing their businesses.
* Recognize methane’s unique impact (its short-lived nature and different warming effect) and consider a tailored approach for future international climate commitments.

**Strategies to measure methane:**

* Use the on-farm emissions calculator released by the government, available on the Ag Matters website, to better measure and evaluate methane emissions.

**Strategies to reduce methane:**

* Adopt Methane-Cutting Technologies:
  + Implement technologies like EcoPond, which cuts effluent pond emissions by over 90%.
  + Use new tools expected to be available by 2030, including advances in genetics, feed, and farm management.
* Industry Leadership and Processor Incentives:
  + Reduce methane emissions through partnerships and incentives led by companies like Fonterra and Silver Fern Farms.
* Technology Uptake:
  + Encourage at least 30% of farmers to take up available methane-cutting technologies before 2030 to achieve significant emission reductions (7–14%).
* Improving Efficiency and Farm Systems:
  + Gain reductions through efficiency gains on-farm and changes to farm systems.

**Activity 2:**

1. Three ways farmers can reduce methane emissions without reducing animal numbers:

* Use new technologies that lower methane production (e.g., methane-reducing feed additives).
* Improve animal genetics to breed livestock that produce less methane.
* Adopt better farm management practices, such as changing feeding routines and grazing systems.

1. Why turning farms into forests can be a problem for sheep and beef farming businesses:

* It reduces the amount of land available for farming animals.
* It can lead to fewer jobs and lower production in the farming sector.
* It risks losing New Zealand’s farming landscapes and traditional way of life.

1. How technology and better farm practices help farmers meet climate goals while keeping farms productive:

* Technologies can reduce emissions without harming animal health or farm output.
* Better management can make farms more efficient, reducing emissions per unit of product.
* These approaches allow farmers to meet environmental targets while maintaining income and jobs.

**Activity 3:**

*Sample answer*

Strategy: Improving animal genetics to reduce methane emissions.

How I would use this strategy:

I would work with breeding programs to select and breed sheep and cattle that naturally produce less methane. This could involve choosing animals with better digestion efficiency or lower methane output and gradually replacing my current stock over time.

Impact on long-term business viability:

By improving genetics, my farm can lower methane emissions without reducing the number of animals or production levels. This means I can maintain or even increase productivity while meeting climate goals. More efficient animals could also reduce feed costs and improve overall profitability. Over time, this approach helps protect my farm’s future by aligning with environmental regulations and consumer demand for sustainable products, keeping my business competitive in global markets.

**Beef+LambNZ: Agriculture Cutting Emissions Without Pricing**

<https://www.ruralnewsgroup.co.nz/rural-news/rural-general-news/beef-lamb-nz-agriculture-emissions-reduction-no-pricing>

[](https://www.ruralnewsgroup.co.nz/media/k2/items/cache/1928715c3506b97ed9109898d4032f58_XL.jpg)**Beef + Lamb New Zealand (BLNZ) says the release of New Zealand's latest Greenhouse Gas Inventory clearly shows agriculture is playing its part in emissions reductions and there is no need for a price on agricultural emissions.**

The inventory shows there have been significant reductions by the agriculture sector in the last two years, with methane emissions from agriculture 3.7% below 2017 levels, while methane emissions overall (including from waste) are 4.1% below 2017 levels.

B+LNZ chair Kate Acland. Photo Credit: Clare Toia-Bailey.

Overall, agricultural emissions were at their lowest point since 2000, though still 10% higher than in 1990.

B+LNZ chair Kate Acland says with further reductions forecast in the next couple of years due to land-use change, farmers are well on the way to meeting the current 2030 emissions reduction targets and there is no need for a price on agricultural emissions.

"We've been saying for some time that our sector is already pulling its weight. However, we're still grappling with regulations that are sucking the confidence our of rural New Zealand, and we need immediate changes. The latest inventory should be a good news story, but a primary driver behind these emissions reductions has been the conversion of productive sheep and beef farms into forestry for carbon offsetting. We may be heading towards the current 2030 target, but it's for the wrong reasons. Reductions are being achieved by a reduction in stock numbers, driven by offsetting - a mechanism that is intended to reduce carbon emissions, but simply allows fossil fuel emitters to continue emitting."

B+LNZ-commissioned independent research has shown that between 2017 and 2024 more than 260,000 hectares of whole sheep and beef farms were sold for conversion into forestry, primarily for carbon farming.

Acland said that for every 100,000 hectares planted close to one million stock units are lost, with over 2.5 million stock units so far taken out of the sector due to afforestation.

She said this trend was unsustainable for the sector and for the wider economy, risking losing New Zealand's iconic farming landscapes and livelihoods.

"We're seeking clear action from the Government so our farmers can have confidence in New Zealand's approach and confidence in the future of our sector. The current 2050 methane target needs to be revised on the basis of no additional warming, and the threat of emissions pricing must be taken off the table. Any further reductions in on-farm emissions should come from the use of technologies, further genetic gains and farm systems optimisation - driven by customer demands and not Government regulation."

**Afforestation to Ease?**

While B+LNZ welcomed the Government's announcement late last year of restrictions on forestry offsets, it still believes this will see afforestation happen, just at a slower pace.

Waitaki MP and former sheep farmer Miles Anderson echoed those statements, pointing out that while primary producers are currently exempted from emissions pricing until at least 2030 they still pay carbon taxes on fuel, fertiliser and electricity.

"Farms still contribute to the Emissions Trading Scheme with those things. We as a government are introducing a new Resource Management Act through the parliamentary process at the end of the year.

"The aim to have this in place by mid-2026, reducing compliance costs and complexity."

One significant though often overlooked aspect of emissions management is nitrous oxide (N2O), which accounted for 9% of total emissions.

Primarily generated through application of nitrogen fertilisers and breakdown of organic matter (i.e. urine/dung, soil and crop residues), N2O's atmospheric duration of 100-120 years is significantly shorter than carbon dioxide (300-1,000 years) but much longer than methane (7-12 years).

**Nitrous Oxide Use**

Foundation for Arable Research senior researcher Dirk Wallace said that while nothing was currently being promoted by government to specifically target N2O emissions, farm planning to get fertiliser rates right for crops would be an excellent start.

"There is also work being pushed by the New Zealand Agricultural Greenhouse Gas Research Centre on nitrification inhibitors you could apply to fertiliser to modify the way it transforms from one source of nitrogen to another.

"This would reduce the amount of nitrous oxide released from the fertiliser and could be a mitigation practice on the horizon in the future. In terms of other losses urine and dung from animals are a massive source in the pastoral sense, but the methane emission from livestock outweighs the nitrous oxide emission so that's where the majority of the attention tends to go."

Wallace said a positive side effect of better freshwater quality outcomes would also be in helping to reduce fertiliser emissions if fertiliser rates were excessive to begin with.