

BANZ Submission — Update to advice on the fourth emissions budget (2036–2040)

He Pou a Rangi Climate Change Commission
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Tēnā koutou,

Re: Request for input — Update to advice on the fourth emissions budget (2036–2040)

Introduction

The Bioenergy Association of New Zealand (BANZ) is the industry body for the bioenergy sector. Our vision is a thriving bioeconomy and regenerating environment built on the country's forestry, agriculture, and waste resources. BANZ aims to triple bioenergy production, targeting 27% of the nation's total energy needs from bioenergy by 2050 while significantly reducing greenhouse gas emissions. Our members generate energy and recover resources from biomass and organic material — through anaerobic digestion, composting, biogas and biomethane, landfill gas recovery and wood energy — and range from operators and developers to technology providers, researchers and investors. Several already produce renewable gas and divert organic waste from landfill at commercial scale. The recent years have also seen a large amount of heat production transitioning from fossil fuels to wood energy.

Members of the Bioenergy Association work with the waste sector and the forestry/wood processing sector to use organic and biomass by-products to produce energy and non-energy products such as fertiliser.

This emissions budget update falls directly within the sector's remit. Both amendments that prompted it impact directly on how organic waste is treated: the revised biogenic methane target sets how much the waste sector is expected to contribute, while the new requirement to weigh domestic food production connects directly to bioenergy on two fronts: anaerobic digestion recovers nutrients from organic waste and returns them to the land as biofertiliser, and the sector supplies renewable, low-carbon gas and heat that can decarbonise the food processors those growers supply. The waste stream is the part of the biogenic methane picture where abatement is cheapest, most proven and least contested — and it is where our members work. We therefore write with both a direct stake in this update and evidence to offer on the two questions the Commission has placed at its centre.

That evidence points to a single proposition: biogenic methane is not one thing, and the reasons for softening the 2050 target apply to only part of it. The Commission's own 2024 analysis attributes roughly nine-tenths of national biogenic methane to agriculture and the remaining tenth to decomposing organic waste. The shift from a 24–47 percent reduction to a 14–24 percent reduction followed a review centred on pastoral livestock — on how far, and how affordably, enteric methane can be cut, and on the consequences for farming. None of that reasoning touches the waste stream. Methane from organic waste can be reduced today, cheaply and often at a net saving, using established technologies already operating in New Zealand; and doing so returns renewable energy, biogenic CO₂ and biofertiliser to the productive economy.

We therefore ask the Commission to preserve the waste sector's contribution in full when it redraws its advice. If a lower headline target means less total abatement, the easing should come from the genuinely difficult agricultural sources — not from the waste reductions, which are among the most affordable and deliverable in the entire budget.

In the 2024 advice the discussion on bioenergy mixes potential contributions for emissions reduction from liquid, solid and gaseous biofuels. The analysis for the 2026 Advice should be separate for each of these bioenergy activities.

Do you support our approach

Yes, with qualification.

We support updating the existing 2024 advice rather than undertaking a completely new advice process. The proposed approach is pragmatic. However while the review has been triggered by changes to the Climate Change Response Act and updates to the Greenhouse Gas Inventory, the Commission should not limit its assessment to these matters alone. The review also provides an opportunity to revisit broader assumptions that underpin the Commission's emissions pathways where new evidence, technologies or opportunities have emerged. In particular, we encourage the Commission to reconsider the treatment of anaerobic digestion, biomethane and other renewable gaseous fuels and the significant contribution to emissions reduction occurring from the transition from fossil fuels to wood energy for heat production. Their potential contribution to reducing fossil CO₂ emissions, improving energy resilience and supporting productive agricultural and forestry systems is not be fully reflected in the original advice and warrants further examination as part of this update.

Question 1: What the revised methane target means for the fourth emissions budget

The revised methane target should not be applied uniformly across all sources of biogenic methane. The factors that justify a softer national target primarily relate to agricultural methane, particularly enteric methane from ruminant livestock, where biological, production and farm-system constraints limit the pace of achievable reductions.

Waste methane is different. It can be reduced using proven technologies and existing infrastructure pathways, including source separation, diversion of organic materials to anaerobic digestion and composting, and improved landfill gas capture. The waste-sector trajectory should therefore remain ambitious and should not be relaxed simply because the national biogenic methane target has been softened.

The Commission should also recognise that agriculture may contribute to emissions reduction through pathways beyond direct methane abatement. On-farm anaerobic digestion and biomethane production can create renewable energy from residues, manures and effluents, reducing reliance on fossil fuels and displacing fossil CO₂ emissions. This provides an additional decarbonisation pathway that is not captured when agricultural emissions are considered solely through the lens of methane reduction.

A softer overall target should be accommodated by easing back where mitigation is genuinely hard and costly, not by loosening the waste reductions, which are both achievable and cost neutral or positive. The 14–24 percent band reflects the Methane Science and Target Review's reading of a national methane profile that is overwhelmingly agricultural. The waste portion stands apart from that profile in three respects:

- the technologies that abate it — diverting organics to anaerobic digestion or composting, and capturing landfill gas — are mature and already in service, not prospective or unproven;

- abating it typically costs little or nothing once co-products such as renewable gas and biofertiliser are taken into account; and
- it carries none of the land-use or output trade-offs that drove the agricultural target down.

On that basis the waste contribution should pass through the update undiminished. The Commission's 2024 demonstration path had waste-sector biogenic methane falling by around 44 percent by 2050. The Commission judged those reductions low-cost compared with other abatement options, and its own sensitivity testing found that lifting diversion by fifty percent could deliver as much as a further 1 MtCO₂e.

We ask that the waste component be separated out in the updated modelling and held to at least that trajectory, whatever is settled for agriculture. Capturing the readily available waste reductions is what makes a lower target both credible and affordable, and it leaves the Government more room on the harder agricultural side.

That potential is not yet fully captured, and the reason is policy rather than technology or cost. The incentives that would draw organic material out of landfills remain weak: the Ministry for the Environment's current reconsideration of the waste provisions in the ETS acknowledges that landfill emissions are still not priced accurately enough to move material up the waste hierarchy, and there is as yet no requirement to divert recoverable organics at all. That gap is not a case for a more modest waste trajectory. This trajectory is readily within reach once the settings catch up. The budget is itself part of that catching up: an advice path built on strong waste diversion signals to government and investors that the abatement is expected and helps unlock the decisions that deliver it. For an industry still early in its growth, even small improvements to diversion settings translate into materially faster deployment of new capacity.

Nor is this a paper exercise. BANZ members are already operating commercial-scale anaerobic digestion, injecting biomethane into the gas network and returning digestate to farmland, with further plants in construction and in the development pipeline. The capability the demonstration path exists now and is scaling.

It bears emphasis that keeping the waste trajectory intact costs the food sector nothing. Reducing waste methane neither displaces food production nor ties up productive land; as Question 2 sets out, it works the other way, cycling nutrients back to growers. **The waste sector can hold its full ambition with no penalty to domestic food production.**

Question 2: The new food-production consideration

The implications for domestic food production extend beyond agricultural output and should include energy resilience, nutrient resilience, productive land use and the long-term sustainability of rural economies.

For our sector, weighing food production alongside emissions is not a constraint but a point in its favour. Bioenergy supports domestic food production at two stages of the chain, on the land and in the factory, and reducing waste methane is bound up with both.

On the land, anaerobic digestion abates methane and, in the same step, produces digestate: a biofertiliser that returns to the paddock in place of an imported manufactured product. The Commission's two objectives pull together here. Every additional tonne of organic material kept out of landfill is at once a tonne of methane avoided and a quantity of home-grown fertiliser that displaces an import. That link has become more valuable since 2024: when the Strait of Hormuz, the passage for roughly a third of the world's traded fertiliser, was disrupted, urea prices roughly doubled and stayed elevated through 2026. Domestically produced digestate shields New Zealand's growers, whether they serve the local market or export, from shocks of exactly that kind.

In the factory, bioenergy offers food processors a domestic, renewable alternative to the fossil fuels they currently burn for heat. Much of New Zealand's food processing runs on high-temperature process heat still drawn from coal and natural gas, and it is among the harder parts of the economy to electrify. Biomethane, biogas and solid biomass can supply that heat from renewable, locally produced fuel, often through processors' existing boilers and burners. Cutting waste to landfill and decarbonising food processing are complementary goals served by the same sector, not competing ones. Some processors are going further and becoming producers in their own right, generating biogas from their own organic residues on site — closing the loop between the waste they create and the heat they need.

On both counts, the emissions saving comes at no cost to food production, it reinforces it. To the Commission's specific questions: in our view "domestic food production" should take in food grown here for export as well as for the local market, since both the fertiliser-security and the energy-security benefits hold regardless of where the food is ultimately sold. And in bringing the NZ Farm model, or its wider treatment of food production, into the update, we encourage the Commission to reflect both contributions, the fertiliser-substitution value of digestate and the role of renewable bioenergy in decarbonising food processing, so that the sector is recognised as infrastructure underpinning food production, not assessed through an emissions lens alone in a way that could inadvertently hold it back.

Question 3: Other material changes since 2024

The Commission should revisit assumptions relating to anaerobic digestion and biomethane, particularly the potential contribution of agriculturally derived biomethane to reducing fossil CO₂ emissions and improving energy resilience.

Since 2024 the position of bioenergy has shifted materially, and in ways that bear directly on the budget the Commission is now revisiting. We note at the outset that the 2024 Advice treated liquid, solid and gaseous biofuels together. Their trajectories have since diverged sharply. Little progress has been achieved in liquid fuels, but substantial development has taken place in gaseous biofuels and wood energy. We encourage the Commission to analyse them separately in this update rather than carrying the earlier composite treatment forward. On that basis we draw four developments to the Commission's attention.

1. The evidence gap that led to biomethane's exclusion has since been filled.

The 2024 Advice left biogas and biomethane out of the demonstration path, reasoning that it was unclear whether enough would be available at a competitive price. That question has now been answered. The Biomethane Strategy and Action Plan prepared by Gas New Zealand at the joint request of the Minister of Energy and the Minister for the Environment sets out a costed pathway to around 1 PJ of biomethane a year in the near term, drawn from projects already under development and the upgrading of existing biogas at wastewater plants and landfills, rising to 5 PJ by 2035 and 25 PJ by 2050, the last equivalent to roughly half of New Zealand's projected natural gas demand. The near-term volume is not theoretical, rather it comes from plants that already exist or are under construction. The interest confined to producers from the market has risen substantially. Gas retailers are actively investigating biomethane production to offset declining natural gas availability, which is a demand signal that did not exist in 2024. Biomethane is molecularly identical to natural gas, moves through existing pipes and plant, carries emissions materially lower than the fossil fuel it displaces, and, as set out under Question 2, is a proven renewable fuel for the hard-to-electrify process heat that food processors and other industrial users depend on. We ask the Commission to revisit the exclusion of biomethane from its demonstration path; the roadmap now supplies the volume and cost evidence its 2024 reasoning called for.

2. The economics of industrial heat have changed, and the 2024 Advice did not address heat at all.

We note this as a gap rather than a criticism: fuel switching for heat is one of the larger emissions reduction opportunities available, and it received no substantive treatment in the 2024 analysis. Since then, the position has moved considerably. Constrained natural gas supply and rising electricity costs have squeezed industrial, commercial, residential and institutional heat users, notably in some cases to the point of closure, and have prompted much closer evaluation of wood energy. On current relative economics, wood energy is now the lowest-cost energy source for heat, a reversal from the position when the 2024 Advice was prepared. EECA's Regional Energy Transition Assessments map the opportunity region by region, and BANZ has published recent analysis of the economics of wood energy for large heat users. We should be clear that this abatement is distinct from the biogenic methane question in Question 1. It is a reduction in fossil carbon dioxide, and it impacts on the overall level of the fourth emissions budget rather than on the methane component. It is nonetheless significant, and we recommend it be assessed explicitly in the update. BANZ can provide data and technical input to support the Commission's analysis of the emissions reduction available from fossil-to-wood-energy transition.

3. Measurement of landfill methane is advancing, and the waste-sector baseline is worth keeping **under review**.

A growing body of international work, using direct and satellite-based measurement, suggests that landfill emissions estimated from gas-recovery data may not fully capture what is actually released. The evidence is still developing and its implications for New Zealand are not yet settled, but it points consistently in one direction, and the Commission itself recorded submitter concern in 2024 that landfill measurements were uncertain. We suggest that the waste-methane baseline be treated as an area of active measurement and revisited as the evidence firms up, recognising that if emissions have been understated, the abatement opportunity is correspondingly larger.

4. **Diversion capacity is coming on stream, and a new source of it is emerging.**

Council food and garden waste collections have continued to expand since 2024, and new anaerobic digestion plants are being built and planned across the sector. Alongside the established model of regional facilities, rising electricity costs and tightening gas supply have prompted food processors to look at generating biogas from their own organic residues on site. That activity is still in its infancy, but it is likely to grow as demonstration sites prove the model, and we suggest it be reflected in the later years of the budget period. For both routes the binding constraint is the same, and it is not technology: it is the reliable sourcing and collection of organic material from communities and from agriculture. This is directly relevant to the point made under Question 1. The abatement is available, and what determines how much of it is realised is whether the settings that drive diversion are put in place.

Is there particular evidence you think we should consider on the feasible reductions for biogenic methane and how the drivers of this have changed since 2024?

The Commission should continue to distinguish between agricultural methane and waste methane, as the drivers of emissions reduction are different.

Waste methane reductions are largely driven by landfill diversion, source separation, organics processing infrastructure and anaerobic digestion deployment. These opportunities remain comparatively well understood and technologically mature.

In addition, the Commission should recognise that anaerobic digestion may deliver benefits beyond biogenic methane reduction alone. Where biomethane displaces fossil fuels, the resulting reduction in fossil CO₂ emissions may be at least as significant as the methane reductions associated with the feedstock itself.

Are there any notable changes since December 2024 which are likely to materially or permanently affect the level of emissions reductions which are appropriate?

The changes to the energy market for supply of natural gas and electricity for business and residential applications is providing significant incentives for the utilisation of organic material and biomass byproducts of forestry and wood processing which have direct effects on the GHG emissions by greater use of gaseous and solid biofuels. These have not been raised in this consultation which is of significant concern as to the accuracy of the proposed emissions budgets.

The situation which natural gas users find themselves in with regard to both, being unable to obtain natural gas, and the high cost of electricity, is incentivising them to investigate switching to wood energy. Analysis shows that wood energy is more cost effective as a future fuel to replace natural gas, compared to both electricity and the import of LNG. Bioenergy Association can provide the Commission of this analysis.

In theory the use of liquid biofuels could also have significant effect on the emissions budget but the Bioenergy Association agrees that currently because of the lack of interest by Government and investors that this opportunity does not look feasible. There is only one small biodiesel producer in New Zealand and there are no plans by others to pursue this opportunity. Air NZ has been undertaking investigations of the production and use of SAF for aviation but this still appears not to be viable.

Share 'one big thing' about emissions budgets?

The one big thing about emissions budgets you want us to think about:

The use of gaseous biofuels and wood energy to replace fossil fuels for heat produces significant GHG emission reductions. These opportunities are based on proven technologies and the markets for each are expanding at a high rate. The barrier for both opportunities tend to be related to access to capital funding and not financial viability.

BANZ and its members would welcome the chance to supply sector-level figures — tonnages diverted, renewable gas generated, biofertiliser applied — or to help the Commission calibrate how it represents the waste, wood energy and renewable-gas sectors in its analysis.

Nāku noa, nā

Brian Cox

Bioenergy Association of New Zealand