31 May 2024

Climate Change Commission
PO Box 24448
Wellington 6142

Attn: Submissions team

Subject: 2024 Climate Change Commission draft advice on Emissions Budget 4 and the 2050 targets

This submission is from the Bioenergy Association.

The Bioenergy Association represents a significant portion of owners of facilities using biomass and residual waste to produce energy, including WWTP and heat plant; solid, gaseous and liquid biofuel producers and suppliers; bioenergy and waste-to-biogas consultants; researchers and equipment/appliance suppliers across New Zealand. Its members have an interest in policies relating to the utilisation of biomass and residual organic waste for the production of energy and coproducts; reduction of emissions to air in communities from both residential and commercial/industrial scale heating applications and from decomposition of waste; and wise use of our renewable natural biomass resources for the betterment of communities. Residual organic waste[1] is considered to be a renewable resource.

The Association has Interest Groups whose members manage the Association's specific technical matters relating to the production of energy from solid biofuels via combustion, production of gaseous biofuels via anaerobic digestion, and transport biofuel production and use, specifically with regard to standards and best practice. The Interest Groups host workshops and dissemination of information to those interested in the respective sectors, or considering investment. Information is published and available from the association websites (www.usewoodfuel.org.nz www.biogas.org.nz and www.liquidbiofuels.org.nz) and from the Bioenergy Knowledge Centre https://www.bioenergy.org.nz/bioenergy-knowledge-centre .

Overview

The Bioenergy Association supports the work of the Commission and is always interested in communicating directly on any matter relating to bioenergy and biofuels.

In general the Association supports the draft Advice but suggests:

a) The focus of the advice is too highly based on BAU whereas we have a large number of emerging opportunities for emissions reduction if we change to a "why cant we "attitude in the analysis. Overall the Commission analysis tends to be too pessimistic by this focus on BAU.

b) Because many of the emerging technologies and practices which could significantly contribute to emissions reduction have few private benefits there is little incentive for private sector investigation and subsequent investment. Or, as in the case of bioenergy the

[1] Residual organic waste is the organic residues of manufacturing, food production and municipalities which has not been able to be recycled or reused and would otherwise be disposed of to landfill.

supply chain is long and complex, with many participants. An investor can not capture enough private benefits to justify the investment. A neoliberal approach to these investments, with minimal involvement of Government to secure the public benefits, results in the opportunities being lost. An example of this issue is with liquid biofuels where say rail could transition from fossil to drop-in biofuels within a matter of months, but there is no one interested to import renewable diesel into New Zealand.

c) Many of the biofuels which could be available are drop-in to replace fossil fuels in existing equipment. This has the benefit of the equipment owner being able to transition from fossil to biofuels with minimal capital expenditure. Even if the biofuel price is higher than the price of the fossil fuel, a life-cycle analysis would often show that the vehicle owner would be financially better off. However, if the biofuel is not available in the market then while financially attractive the option is not available as no one is importing or producing the biofuel for sale. {An example of the success of drop-in biofuels is in the heat sector where the availability of wood pellets is allowing boiler owners to transition from coal to biofuels using their existing boiler at minimal capital cost.) Policies which encouraged drop-in solutions requires more than a simple "leave it to the market" approach.

d) Many of the assumptions used in the Advice analysis are the result of there having been limited encouragement from Government, and or few corporate entities promoting the opportunities. As a result they are precautionary rather than inspirational.

e) While the draft advice recognises that New Zealand can reduce emissions faster if greater focus is put on recycling organic matter to produce biogas and biofertilizer, the assumption is that there will be inadequate volumes of biogas upgraded to replace natural gas. This is true if we think that producing adequate volumes of biogas from organic wastes and agriculture residues is too difficult. In reality it is no more difficult than other recent examples such as developing a hydrogen industry, building Lake Onslow, or introducing a nation wide electric vehicle charging system.

Revision of budgets one, two, and three

Bioenergy Association agrees that it is prudent to assess whether there is a need to revise emissions budgets one, two, and three covering the period 2022–2035.

While the budgets could be revised in the light of recent experiences of initiatives that have been taken to reduce emissions, the Association recommends that as they have already been set by Government they should be retained. Focus should be on the 2036 -2050 period.

The Bioenergy Association has observed that throughout this current period there has been too much focus on the period to 2035 with the result that the reductions and benefits post 2035 have been ignored resulting in sub optimal outcomes. An example is the EECA RETA projects which have addressed the regional heat transition from fossil fuels to biofuel and electricity, which have ignored biomass or electricity supply opportunities beyond 2035.

Heat

1. The draft Advice has a number of biases to electricity, where biomass solutions are also an option so a bias on electricity is unhelpful to early emissions reduction. EECA has identified that biomass fuel is often a preferred fuel compared to electricity by existing heat plant owners.

2. Bioenergy Association recommends that in discussion on heat that 'renewable electricity 'should be replaced with 'renewable energy'.
3. Focusing on drop-in solutions would reduce extensive un-necessary capital expenditure for transition from fossil to biofuels. eg renewable diesel can be a drop-in fuel for heavy land transport, aviation, rail and marine. Wood pellets can be a drop-in biofuel for some existing boilers such as Huntley Power Station to provide dry year electricity supply security. Avoiding un-necessary capital expenditure should be an objective of emissions reduction policies.
4. Producing black pellets within New Zealand for use as a drop-in fuel for replacement of coal at NZ Steel, Huntley Power Station and some large Fonterra boilers will assist emission reductions in those difficult to decarbonize activities.

Natural gas

5. Bioenergy Association recommends that if greater support is provided to the early availability of renewable gases (biomethane) then there is no need to put any constraint of use of gas for energy.
6. The gas sector is working to replace natural gas with renewable gases. As a consequence the benefits of gas for electricity smoothing will allow greater investment in solar and wind electricity generation.
7. Bioenergy Association has identified that 100% of essential natural gas applications can be continued by supply of gaseous biofuels. This is assessed to be around 60PJ of gas.
8. While the immediate replacement of natural gas can be achieved from biomethane from anaerobic digestion, work is underway to identify the cost point where gasification of biomass to produce synthetic gases can be available to replace fossil gases. Current economics indicates that the viability of gasification as a replacement for natural gas will not be until around 2050. Despite the current unfavourable economics it is an opportunity which is expected to reduce in cost as more plant are built internationally.

Agriculture

9. The opportunities for emissions reduction from agriculture would be assisted if emissions data were included in Farm Environmental Management plans.
10. The discussion document on options appears to underestimate that there are farm mitigation options using bioenergy and biofuels solutions which are based on proven technologies which with the appropriate assistance can be economically viable today. Some technologies such as anaerobic digestion can recycle organics into valuable biogas and biofertilizer for on-farm use. Other conventional and emerging technologies are also available but need assistance to be viable at a farm scale. Farms are also a major source of biomass which can be sold as a fuel to offset the use of fossil fuels by food processors such as for meat and dairy. The incentives should encourage farms to produce more biomass through farm forestry on the 6-9% of a farm which is not highly productively used such as shelterbelts, erosion plantings, slope protection , woodlots and managed riparian plantings.
11. A transition to a circular bioeconomy which provides an opportunity for a range of plant species to be grown to produce feedstock for energy, biochemicals and the production of bio-based materials to replace those currently derived from fossil fuels. The investment in additional farm

forestry can not only provide the necessary feedstock for the manufacture of these products, with consequential financial returns, but can in a number of situations, provide mitigation of greenhouse gas emissions for free.

12. The Bioenergy Association has identified that the equivalent of 24PJ of energy can be sourced from biomass and agriculture wastes by 2050. Preliminary analysis of the opportunities show that with the right incentives for farmers, and assistance from recycled emissions revenue, that this is easily achievable.

13. We believe that a net emissions regime for agriculture can be a door opener for a more resilient agriculture sector and encourage mitigation so as to address the current high emissions from the sector.

14. In agriculture the farmers would have strong incentives to take action if they can offset liability emissions with emission credits from sequestration, sale of wood for embedding emissions in buildings, and selling wood to offset the use of fossil fuels for energy. Monitoring specific farm emissions would also incentivize farmers to reduce organic waste and use crop residues etc to offset say on-farm energy emissions.

15. Agriculture is being treated different from any other business where reductions in emissions offset any increase in emissions from say increased manufacturing. All business whether agriculture or manufacturing should be subject to the same net on-site emissions regime.

16. Trees on farms can be a very important tool for sustainable land management to improve soil fertility and reduce erosion. The wood from trees on farms are an important source of biomass as NZ transitions towards being a circular bioeconomy. We have to move the discussion from trees OR agriculture, to trees AND agriculture, if we are to ensure sustainable land management over a long period of time. A consequence of such an approach will result in farms becoming net zero emitters.

Waste

17. A focus on landfill gas capture systems and technologies at all landfills is a distraction as putting more effort into collecting and recycling organic matter so that it doesn't go to landfill, and produces compost, biofertilizer and energy would produce greater emission reductions faster.

18. The draft Advice from the Commission is overly pessimistic as to the opportunities to reduce emissions from organic waste. The previous Government's draft Waste Strategy sets out principles and priorities for action. These should form the basis for the targets for emissions reduction from organic waste. An agreed Waste Strategy and accompanying Waste Action and Investment Plan will be necessary if maximum emissions reduction from waste is to be achieved.

19. There is a significant overlap of opportunities for reduction of emissions from organic waste and the opportunities for transition to a circular bioeconomy. Approaching reductions of emissions from organic waste as a circular bioeconomy opportunity aligns the economics with emissions reduction if the economics from investment in bioeconomy opportunities are the primary driver. With economic circular bioeconomy opportunities the emissions reduction come free.

20. The progress on securing additional investments such as the Ecogas recycling facility at Reporoa is constrained because we leave each territorial authority itself to sort out options for waste collection and recycling, as if each is original. Recycling of organic waste into high value products

such as compost, fertilizer and biogas must be approached from a regional collective scope in order to achieve economies of scale.

21. A down fall of the Waste Strategy is that it generally excludes private sector commercial waste collection so are only working with half the organic material.

Forestry

22. A major failure of policies for emissions reduction from forestry is that the discussions are based on the quantities of trees already planted rather than could be planted. The time frame for forestry rotations of around 30 years for pinus radiata aligns with the economic life of investment in boilers or other manufacturing from biomass.

23. Rotation forestry is perpetual and the current planted areas can be expanded extensively. At present forestry is only considered as a component of the NZ ETS yet it has much more value for emissions reduction than that. The biomass can be a feedstock for liquid, gaseous and solid biofuels and thus a significant opportunity for replacing fossil fuels and petroleum based products. Rather than assessing how much carbon dioxide can be absorbed by current forestry we should be evaluating how many trees we should plant to maximise to get us to the 2050 targets by all of the opportunities which forestry provide.

24. A key attribute of forestry is that its contribution to achieving our 2050 targets is subsidized by the economic returns that can be achieved from wood. The implementation of the Forestry and Wood Processing Industry Transformation Plan would result in significant added value to be achieved from forestry and the absorption of carbon dioxide is achieved for free.

25. The production of biobased products and the use of wood in buildings provide a significant permanent sink for carbon dioxide. Climate change policies should encourage the domestic use of logs which currently are exported, as if exported we are giving away our carbon sink.

26. The draft Advice has a strong bias for planting native trees compared to other species which may reduce emissions faster and provide economic, employment and land management incentives. Bioenergy Association recommends that the focus should move to be on sustainable land management, regardless of species, which not only will assist reduce emissions but ensure that the right tree is in the right place. Choosing winners eg having a priority for planting only native vegetation is not based on sound science or sustainable land management principles.

Regards

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