

25 August 2024

Cover letter

**Submission from the Bioenergy Association's Wood Fuel Interest Group
regarding the Draft
EMISSIONS REDUCTION PLAN 2 (2026-2030)**

We believe the ERP as proposed once again puts an over-emphasis on electricity as the silver bullet. This ignores NZ's fuel supply mix, in particular the 'firming' role that our massive woody biomass resource can provide. (Over 150PJ is currently exported at a value much lower than the likely cost of LNG or diesel).

NZ needs a [Sustainable National Energy Strategy \(SNES\)](#) that aims to keep the hydro lakes as full as possible, so they can act as an Onslow-like battery for the increasing wind and solar in the supply mix (92% of planned and actively pursued projects *). Bioenergy, given it is stored energy, can be released 24x7 year-round, so the three legs of the Bio-tripod (Bio-heat, bio-gas and liquid bio-fuels) means that [bioenergy can play a large role in an energy world where firming will be imperative](#).

[We have submitted an updated version of the Nov 2021 Energy Strategy, fleshing out the ideas regarding the design of a robust SNES.](#)

If NZ shows courage and decisiveness regarding optimally using the energy resources NZ is blessed with, similar to Finland and Denmark, a robust SNES that delivers the energy trifecta and on the 2050 target is within NZ's grasp.

* Per Electricity Authority June 2024, Committed & Actively Pursued projects 2023-2030 : Wind 9,174MW, Solar 6,618MW, Hydro 75MW, Geothermal 558MW, Elec Battery Storage 735MW. Total 17,160MW.

How to deliver on this potential, and rapidly ?

- The EECA-administered GIDI fund (Government Investment in Decarbonising Industry) delivered many good projects, pretty rapidly, and at a low cost to Government :
 - The fund spent \$122m to encourage 85 projects, which delivered 480,000 tonnes of CO2 abatement per year

- Over a 20-year project life that is 9.6million tonnes at a cost of \$12.7 per tonne of CO2 abated – by far the lowest abatement cost of all the programmes.
- This encouraged factories to get off coal or gas by installing biomass boilers, typically using our forestry waste
- Unfortunately it also encouraged electrode boilers too, which is part of the current problem (EECA are possibly now realising the foolishness of this)
- Unfortunately the new National-led coalition threw the baby out with the bath water and killed GIDI, even though it was by far the most cost-effective carbon abatement programme
- At BANC we are advocating for a similar fund to be rolled-out with urgency. The expertise and mechanism is already in place at EECA, though maybe the scheme can be re-named something like IREF (Industrial Renewable Energy Fund).
- This would be used to
 - encourage/fast track industrial biomass boilers in order to displace and so free-up natural gas (and coal)
 - the conversion of other biomass waste streams to biogas (to top-up the gas pipelines)
 - encourage large scale solar (on factory roofs) and geothermal where possible
- The outcomes would be :
 - Factories on natural gas can stay in business with a much more competitive cost of process heat, at around \$10-15/GJ versus about \$30/GJ for gas, more if money is wasted on an LNG terminal
 - Gas is freed-up to act as an electricity peaking fuel – or for those industries who cannot switch away
 - The dwindling flow of Natural Gas can be supplemented by bio-gas from Anaerobic Digestion of existing biogenic waste streams
 - Rapid deployment of large scale Solar PV can happen faster than new wind farms, and would be 'on-site' for own-use – alleviating the pressure on scarce power supplies

We have millions of tonnes of wood waste available, and export millions of tonnes of low-value logs – so, given urgent action is required, and the Government can quickly resurrect a similar scheme, let's get on with it !

Below are the Wood Fuel Interest Groups Nov 2021 responses to some of the questions asked in ERP 1. **These responses remain as relevant, or even more relevant, than ever.**

7. Which actions to reduce emissions could increase future risks and impacts of climate change, and therefore need to be avoided?

On over-reliance on electricity-based solutions (which includes hydrogen, heat pumps, electric boilers) will result in increased demand for electricity and therefore price. This will impact most on those with the least disposable income – increasing the risk of climate change to those groups.

The strategy needs to take a balanced approach, optimally utilising our suite of resources, and, where biomass can alleviate the demand for electricity, then that fuel-type should be valued and encouraged for that strategic reason.

Examples of where clean, sustainable and locally sourced wood fuels / biomass can displace electricity demand (freeing it up for a higher value uses) are electric boilers for industrial heat users, and heat pumps for swimming pools, schools, hotels, hospitals (e.g. Ashburton), universities etc, and as liquid fuels instead of power-hungry hydrogen.

17. How can Government further support workers at threat of displacement to develop new skills and find good jobs with minimal disruption?

Convert export logs to liquid biofuels and Renewable Natural Gas utilising the areas currently used as log-yards for the bio-refineries. Current log-yard workers can convert to roles at the biorefineries.

Additional comment 23 Aug 2024 : The Winstone Pulp site could be re-purposed as a Bio-refinery or pellet manufacturing site, finding employment for some of the laid-off workers.

20. Is there anything else you wish to share in relation to making an equitable transition?

We suggest that ETS revenues and the \$6.4b reportedly earmarked to buy international credits, is instead used to rapidly transform NZ to carbon neutral fuels.

Making optimum use of biomass resources for energy across the three sectors of industrial/commercial heat, liquid biofuels and Renewable Natural Gas will alleviate the impending burden on electricity - which already has sufficient challenges to fully decarbonise, especially bearing in mind increasing EV and heat pump demand.

Without the assistance that well-deployed biomass can lend, the extreme demand for electricity will drive prices up, hitting the socio-economic sectors who can least afford it the most.

23. Is there anything else you wish to share in relation to government accountability and coordination?

Inter-departmental co-ordination is required to realise the potential of utilising all our log harvest onshore, via several inter-connected strategies. For instance a Wood First strategy for construction would not only increase value-added exports, but, as a by-product, could generate 15PJ annually of wood chip which can be used for heat or as a feedstock for RNG or bio-diesel. It would also pour jobs & wealth into rural regions via sawmill expansions etc.

Energy Planning also needs to be based on utilising existing infrastructure (e.g. the ex-Oil Refinery, and the gas pipelines and export log terminals). See Slide 10 of our attached Additional Information.

Similarly, if banning new gas exploration, then assist the establishment of RNG biorefineries, to protect industrial and domestic users, and create a potential exportable product. See Slide 12 of our attached Additional Information.

24. What are the main barriers or gaps that affect the flow of private capital into low-emissions investment in Aotearoa?

Competition for Scarce Capital : Industry requires a rapid return on capital invested, typically a simple payback of <3years. That is due to a shortage/rationing of capital, and means that a new machine gets priority over a biomass boiler that may have a payback of 5-8 years - yet will last for 40+ years.

26. What else should the Government prioritise in directing public and private finance into low-emissions investment and activity?

The CO2 abatement Cost Curve : Investment should be prioritised based on assisting the lowest cost abatement technologies first. These are the most economic, providing the best value for the tax-payers money invested.

The strategic value of certain energy types should be valued. Wood-derived energy, in its various guises (as heat for industry or commercial users, or as liquid fuels, or as RNG) is basically stored solar energy, that be released 24x7, whenever it is demanded.

That storage or 'firming' characteristic warrants increased incentives.

Wood can also carry the burden of de-carbonising industrial heat. Electricity is desperately needed in other sectors, so should not be used for heating.

Wood energy is also the only form of energy that can, when CCS is viable, become carbon negative.

All these strategic values should be recognised in prioritising funding across sectors and energy types.

27. Is there anything else you wish to share in relation to funding and financing?

Due to the competition for scarce capital, a green energy suspensory loan system, as well as Accelerated Depreciation would assist industry to decarbonise.

The wood fuel supply chain needs to be expanded to meet demand. Investment incentives should not just be on the demand side. Fuel depots and large chipping/hogging machines as well as covered storage are all required to meet demand.

Below is a Press Release issued by Banz on 20/8/24 :

“A blind commitment to electrification is only likely to leave New Zealand well short in its energy needs, says the head of Bioenergy New Zealand’s solid bioenergy group.

Rob Mallinson says the wholesale push for “electrification of everything” in New Zealand, including industrial process heat and transport, has painted the energy source as a silver bullet to deal with decarbonisation.

“This ignores New Zealand’s unique opportunities from the extensive availability of wood waste for bio-heat, bio-gas and liquid biofuels. Such an approach undermines our energy resilience and our productive sectors, and is ultimately costing real jobs.”

He points to New Zealand’s extensive wood residue availability, often the co-product of forestry, sawmilling and the construction sector.

“Using residues as a fuel avoids the problems we have seen from slash. In some parts of New Zealand the slash is recovered and used to replace fossil fuels. There is no reason why all our wood residues can’t be used as a fuel. If we did that then electricity and fossil gas would be freed-up for those businesses which really need them.”

Biomass can be used to generate our industrial heat at a much lower cost than electricity or natural gas, leaving those to be used in their higher value applications.

“And wood fuel costs have remained at about the same cost for the past 15 years, in contrast to the soaring cost of gas and electricity.”

As New Zealand struggles to hang on to affordable base load electricity supplies, wood fuel offers a 24/7 source of stored energy. “Biomass is nature’s best battery – let’s take advantage of that. For industrial heat users there is no more reliable and cost-effective solution. With Dry Year risk only increasing – it’s a no-brainer.”

Electrode boilers, popular recently, need more wind turbines or, if it's not windy, Huntly to run harder on coal. So biomass boilers, when compared to the alternative of an electrode boiler, are effectively virtual power stations – but ones that use stored energy that can be released 24/7 year-round. “As gas reservoirs decline further and the proportion of wind and solar grows, these virtual power stations will be increasingly valuable.”

“And when Genesis Energy starts using wood fuel at Huntly power station, the need for coal to manage electricity supply in dry years will disappear.”

He says that the volume of raw logs that New Zealand currently exports every year is staggering, and the equivalent to 150 petajoules of natural gas. “We would only need to divert around 30% of those export logs to de-carbonise every single industrial gas and coal boiler in New Zealand.”

Using low value export logs for bioenergy would provide another market, a market that is consistent & reliable, protecting jobs.

While there are regional supply/demand imbalances, Mallinson says the reality is that wood fuel can be trucked over 300km and the CO₂ from that truck's diesel would only constitute around 2% of the abatement delivered by the wood fuel in the back of the truck, meaning it would still be around 98% carbon-neutral.

Meantime biodiesel production could also enable decarbonisation of New Zealand's fishing fleet, heavy transport and even logging equipment. And that biomass truck.

“Electrifying everything simply cannot deliver. A sizeable role for bioenergy increases our chances of having enough electricity and gas to keep the lights on, run machinery and decarbonise our transport fleet.

“And given the current geopolitical situation, how crazy is it to be even considering an LNG terminal, hugely exposing ourselves to international risk, when we have 150PJ of cheaper & unused fuel available domestically ?

“Bioenergy can make a strong contribution to alleviating the shortage of power and natural gas. If we want an urgent response, and a robust long term solution, rather than just talking, we need to pull this bioenergy lever hard, and fast.”

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