

29 November 2023

Hon Todd McClay
Minister of Forestry
Parliament
Wellington

Post election briefing:

Extracting value from forestry and wood processing residues via bioenergy and biofuels.

The Bioenergy Association would like to congratulate you on your appointment as Minister of Forestry. I would also like to introduce the opportunities that bioenergy and biofuels can contribute to obtaining greater value from wood by utilisation of currently unused wood residues.

New Zealand's plentiful forest and wood processing resources can assist business and communities have a secure energy supply, obtain increased wealth from wise land management, and secure new business opportunities.

Bioenergy Association represents business interested in turning wood residues into bioenergy and biofuels.

Our members include wood processors, equipment suppliers, researchers, fuel suppliers, such as Pioneer Energy, OneFortyOne, Genesis Energy, and other business who have a focus on providing a secure energy supply from bioenergy. Members also include consultants and large energy users such as Oji Fibre Solutions, Fonterra, Air New Zealand, and other business with a keen interest in sourcing least cost reliable energy, and reducing greenhouse gas emissions.

The Association works closely with the forestry and wood processing sector and is a member of the NZ Forest & Wood Sector Forum to encourage use of harvest and wood processing residues to obtain the highest value from wood.

Wood residues can be feedstocks for the production of solid, liquid and gaseous biofuels.

The economic and wellbeing benefits from bioenergy and biofuels

Bioenergy Association analysis shows that if the Industry Transformation Plan is implemented there will be adequate volumes of biomass residues as feedstock for bioenergy and biofuels to:

Increase sustainable food production

- Underpin sustainable food production and processing which is becoming a requirement of international buyers of our food by assisting farmers and food processors demonstrate that their food production is done sustainably. Bioenergy

from residues also allows food processors to hedge future energy costs by directly managing their own energy supply for heat.

Provide energy security to business and communities

- Refuel Huntley Power Station with a drop-in biomass fuel to provide firming of electricity supply during periods of dry hydro storage, at minimal capital expenditure. Continuing the dry year firming role of Huntley Power Station avoids the need for Lake Onslow.
- Fully replace coal and natural gas for production of stationary heat thus allowing electricity to be used at higher value applications. This would reduce the number of electricity power stations which will have to be built if all energy applications became electrified. This also avoids the energy security risk if business is dependent on a single energy source.
- Provide opportunities for export of wood pellets to SE Asian energy markets.

Improve value from land use

- Provide an additional revenue stream for forest owners and wood processors from the residues which are often wasted or exported as low value logs.
- Provide an avenue for converting slash into high value energy products and thus avoiding the situation we have recently experienced in Tairāwhiti where there was no demand for forest residues. Extraction and use of the residues to produce bioenergy and biofuels would have limited the catastrophic consequences.
- Improve agriculture land management by integration of trees on farms to stop erosion, provide farmers with an additional revenue stream from selling biomass, and improve animal welfare.
- The wood residue recovery systems being developed for energy production are able to be used for the sourcing of feedstock for future manufacture of other bio-products.
- Bioenergy and biofuels has been assessed as being a \$6billion industry with the value of greenhouse gas emission reduction on top of that.

Reduce the need to purchase international emission credits

- The greenhouse gas emission reductions from a greater use of bioenergy and biofuels are assessed as being potentially large enough that government can avoid purchase of an estimated \$24 billion of international carbon credits.

New Zealand is already a significant user of forestry, and wood processing residues to provide 9% of consumer energy. The Bioenergy Association assesses that this could increase to around 20% if all opportunities were pursued.

The demand for biomass energy solutions is outstripping supply. This is a significant commercial opportunity for greater sourcing and use of wood residues.

Details are provided in the Annex attached.

A role for Government

As shown by recent announcements by Fonterra and other food processors, there is a natural transition to greater use of bioenergy and biofuels by business and communities driven by international trade demands and the desire of business and communities to have a secure least cost reliable energy supply.

Energy from distributed locally sourced renewable biomass resources will allow electricity and fossil gases to be increasingly used for the applications for which they are best suited. Optimising the use of wood residues can be more speedily achieved if Government:

- Supports the implementation of the **Forestry and Wood Processing Industry Transformation Plan** so that adequate quantities of feedstocks for bioenergy and biofuels are efficiently obtained at least cost for long term secure production of energy and other products.
- Develops a widely scoped **Energy Strategy** including all energy sources and applications, including those of bioenergy and biofuels.
- Supports investigation of the use of wood for production of liquid biofuels to provide a drop-in fuel to heavy land, air, rail and marine transport, thus avoiding the need for unnecessary capital expenditure of motive equipment in order to decarbonise.
- Supports the investigative work of the energy sector to refuel Huntley Power Station on biomass fuels so as to ensure long term firm electricity supply.
- Recognises trees on farms as a source of biomass for energy.
- Adjust the NZ ETS to enable farmers and landowners to offset sequestration of greenhouse gases by small woodlots and shelterbelts against their on-farm emissions.
- Improve Farm Environment Plans so they are more cost-effective and pragmatic for farmers by integrating trees as a tool of land and farm management.

Unlike energy from wind or solar, energy from biomass often involves a matrix of parties and it is difficult for single investors to capture the benefits of their investment because the benefits to the public are often greater than the benefits to the investor. This is often a situation where Government can provide initial hand-up assistance.

Conclusion

The Association would like to work with Government to expand the current bioenergy and biofuels programme. This would not only increase the beneficial use of wood residues by increased use of bioenergy to provide energy security and improve business and farm resilience, but would also assist with the achievement of the climate change targets. This would avoid the need to purchase an estimated \$24billion of international greenhouse gas emission reduction credits.

Increasing bioenergy uptake is an initiative that is easily achieved, so that with minimal government expenditure it can immediately contribute to the Government's proposed growth objectives.

Wood to energy is based on a number of proven technologies with an industry already in place, as compared to other possible initiatives such as hydrogen that still need research and development, and will be far more costly.

Growth in the bioenergy industry will not only contribute to increased revenue for land and forest owners, but would also produce jobs, assist the economic wellbeing of all regions, and hedge future energy costs for business.

Policies and programmes which better integrate trees and agriculture will provide tools so that the devastation of the Tairāwhiti region does not happen again because there is a market for forest residues.

The Association Board would be pleased to meet with you to brief you in more detail and to discuss how the bioenergy and biofuels opportunities fit with your policy objectives.

Yours sincerely



Brian Cox
Executive Officer

Annex A

Energy Supply security

Industry are already significant users of forest harvest and wood processing residues for the production of heat with 9% of current consumer energy already coming from this 100% renewable resource. The potential is that with implementation of the Forestry and Wood Processing Transition Plan biomass could increase to supplying around 20% of consumer energy by 2050.

The dry year firming of electricity supply has been the subject of analysis by the NZ Battery Project who have confirmed that firming by use of biomass fuel is one of the recommended options. Genesis Energy have also successfully undertaken trials of using drop-in black wood pellet fuel in the existing coal units at Huntley Power Station and confirmed the on-going future life of the equipment. The advantage of continuing to use the Huntley Power Station to provide electricity firming is that there would be minimal capital expenditure compared to the other options such as Lake Onslow which require significant multi-billion dollar capital investment. The fuel would also be produced within New Zealand using the currently under-utilised forest harvest residues. The black pellets are also a product in demand for similar applications across SE Asia so are a potential export opportunity.

As New Zealand transitions to greater use of renewable energy it is important that the energy supply is not overly dependent on a single energy form such as electricity. Diversity of options and fuel sources is both a prudent strategy but allows business to choose the energy source best suited to their application and location. Bioenergy and biofuels are generally a distributed resource with the fuel being sourced regionally and does not require a network infrastructure expansion to link a use to supply. For a business requiring electricity connection the cost of this final link can often be prohibitive.

Security of supply for transport is critical for the economy and it is prudent that different energy forms are available. While there is a transition towards electricity for some transport it would not be sound strategy to be dependent on only this one energy source. It also inhibits transport operators, particularly heavy road transport, marine, rail and aviation from adopting the optimal energy for their operations. A multi-fuel strategy including electricity, hydrogen and biofuels should be Government policy. If this is adopted then the amount of development of the transport biofuels sector needs to increase significantly. The biofuel can be a drop-in fuel into existing equipment thus avoiding the need to spend unnecessary capital expenditure to purchase alternative equipment.

Hedging long term energy costs for business

A number of heat plant owners who have not already made the change have signaled that they would replace coal with wood fuel once they are confident that there is a consistent and reliable supply of biomass fuel available. The Bioenergy Association is working with the wood industries to ensure that there is adequate biomass of the right type in the right location. To

this end Bioenergy Association is a member of the NZ Forest & Wood Sector Forum and is assisting with the implementation of the Forestry and Wood Processing Industry Transition Plan. As a result the Association is confident that if the Transition Plan is fully implemented there will be adequate wood fuel supply for all heat plant owners who wish to use wood fuel.

Purchasing wood fuel is generally based on a direct relationship between purchasers and the producers of the wood residues. The wood fuel users can also grow their own trees on nearby land. This provides opportunities for business to hedge long term fuel supply costs and structure fuel supply contracts so as to minimize future fuel cost fluctuations. This is a specific opportunity for greater sourcing of wood from farms who are often located near buyers of wood fuel.

Increasing international sales of sustainably produced food

Food processors selling their product into international markets are coming under increasing pressure for sustainable processing. Sourcing their energy from renewable sources such as biofuels is a cost effective way of being sustainable. For heat the sustainability option is electricity or biomass but there is an increasing risk of future electricity supply issues as more and more electricity power stations have to be consented and built. The biomass option is generally local and easier to manage for long periods ahead.

Farmers are also coming under pressure to produce their food sustainably. Land management is critical to farming sustainably and we have recently seen in the Esk Valley, in the Hawkes Bay, the consequences of not integrating trees into farms when unprotected soils erode in high rainfall situations. These trees if planted appropriately can not only protect the soils from erosion but can be an ongoing source of income for the farmers. Analysis shows that around 6-9% of a farm area is not highly productive and these areas which are often slopes or soils difficult for animals can be used to grow trees which can be a source of timber, and the residues used as wood fuel.

Farm shelterbelts can be grown as a managed shelterbelt so that they can be a source of future biomass. Managed shelterbelts can also assist animal health as they provide protection from poor weather conditions.

Bioenergy Association is working with the agriculture sector so that in the New Zealand context farm production can be food plus energy.

Availability of biomass as an energy source

New Zealand is a world leader in growing and harvesting trees and we have significant areas of land where productivity from the land can be increased by growing trees which can be processed for production of a wide range of bio-products to replace those currently produced from petroleum. Encouraging optimal use of land by a mix of agriculture and trees will provide a feedstock for an increased growth in new farm products, of which energy is just one of those products.

A strong wood processing sector will produce the highest grade residues which can be used as a wood fuel. The Bioenergy Association therefore encourages additional domestic wood processing so that there are greater volumes of wood residues available as wood fuel. Continued export of wood as a commodity product in the form of low value logs without domestic processing is a policy failure.

A weakness in current wood products investment analysis is that the decisions are often made only on the trees which are currently available, rather than which could be available. We encourage the incoming Government to encourage land owners to look at how they can augment their current farm business by growing trees, but only in the right place. This increased revenue will strengthen farm resilience

Implementation of the Industry Transformation Plan will ensure that adequate volumes of wood residues are available for all potential uses. The actions in the ITP will provide greater opportunities for farmers, forest owners, wood processors and downstream industries to achieve greater value from wood.

Greenhouse gas emission reductions

A focus on utilising bioenergy and biofuels to reduce business costs and get greater value from our land also results in major greenhouse gas emission reductions being achieved. Bioenergy Association believes that by focusing on the economic and societal benefits of using renewable natural resources such as wood, the environmental benefits are obtained for free.

Optimising use of wood residues to produce energy could result in a greenhouse gas reduction of around 1150Kt CO₂-e by 2040 and 1520Kt CO₂-e by 2050.

Employment and improving resilience of rural communities

An expanded bioenergy and biofuels sector will create additional employment from the sourcing of the biomass and this is likely to improve the resilience of rural communities because of the need for management, harvesting and transport of the agriculture and forestry wood residues.

The expanded collection of forest harvest residues which would otherwise be left as slash will create a number of additional employment and new regional business opportunities.