2 October 2017

Low-emissions economy inquiry
New Zealand Productivity Commission
PO Box 8036
The Terrace
WELLINGTON 6143

info@productivity.govt.nz

Submission from the Bioenergy Association

Consultation: Low emissions economy inquiry

The Bioenergy Association is a sector organisation representing a significant portion of owners of biomass fueled heat plant; solid, gaseous and liquid biofuel producers and suppliers; waste-to-energy consultants; researchers; and equipment/appliance suppliers across New Zealand. It has members who have an interest in policies relating to the utilization of wood residues and waste for the production of energy; 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. Organic waste that is not able to be recycled is considered to be a renewable biomass resource.

The Association has Wood Energy, Liquid Biofuel and Waste-to-Energy/Biogas Interest Groups whose members manage the Association's specific technical matters relating to the wood energy, liquid biofuel and waste-to-energy sectors, specifically with regard to standards and best practice. The Interest Groups also host workshops and undertake dissemination of information on the full range of bioenergy applications.

Overview

New Zealand is rich in biomass from wood and waste which can be used to reduce greenhouse gas emissions by replacing use of fossil fuels for production of heat and on-site electricity. The bioenergy sector also has proven technologies which can be used in a wide range of applications to reduce the discharge of methane from waste.

It has been assessed that the bioenergy sector could contribute greenhouse gas emission reductions of 490kt CO2-e pa by 2030 and 1150kt CO2-e pa by 2040. This would avoid the need for purchase of international carbon emission units and also contribute to significant employment, regional economic growth and achievement of environmental outcomes.

There are however a number of market barriers limiting achievement of these savings.

The opportunities for greenhouse gas emission reduction from wood or waste biomass using bioenergy technologies has been limited because in general national policies relating to bioenergy and biofuels have simply been seen as an option of energy supply only. Widening the focus to include consideration of the greenhouse gas reduction opportunities and other economic and societal benefits shows that bioenergy and biofuels applications can make a significant contribution to addressing climate change.

A consideration of the full value chain of bioenergy and biofuels opportunities from source of biomass through to application shows that the economic, environmental and societal externality value is very high but often not able to be captured by the specific facility investor at each stage of the value chain. For example domestic added value processing of wood into engineered wood products produces residues which make very good wood fuel, which could be processed into wood pellets for use in residential space heating resulting in avoided use of coal or gas, and thus improved air quality. At each part of the value chain a different party is involved.

On the other hand some business are able to internalize their offset opportunities. For example farmers are able to offset a significant part of their biological emissions if they incorporate in their emissions calculation the full range of on-farm bioenergy emission reduction opportunities including from farm forestry, dairy effluent processing and agricultural residues processing.

There are five main themes to this submission:

- Waste to energy remains the low cost hanging fruit and could be developed from just minimisation to also include utilisation by reducing structural barriers and from assistance of transitioning incentives.
- Government can make substantial emissions reductions through coal fired boiler replacements in institutional buildings. Local Govt. can also make a substantial contribution through waste utilisation.
- Wood fuel supply chain needs to be built up by incentives for the smaller boiler market.
- Bioenergy policies need to be integrated with other sector strategies that encourage change in land use and reward communities.
- Biofuels provide potential options to deal with some of our more intractable emissions, particularly heavy duty cycle transport emissions (both domestic and international). Investment in understanding and scoping these options needs to be occurring now ahead of them becoming clear commercial opportunities.

Response to specific questions

Q1: How can the Commission add the most value in this inquiry?
New Zealand is fortunate that it has many bioenergy based opportunities which will lead to a low carbon economy.

There are a large number of opportunities where domestic emissions reduction could be pursued which would avoid the need for the Government to purchase international emission reduction units. It would be useful if the Commission could identify the priority areas where attention should be focused. Bioenergy and biofuels is one of those priority areas.

Many of the greenhouse gas emission reduction opportunities cross several sectors and can involve many different players. In particular land use and life cycle linkage are across the sectors eg land use, forestry, added value wood processing and wood resides availability as fuel. It would be useful if the Commission could recommend a mechanism for how these multi sector opportunities could be developed, and recommend establishment of an on-going facilitating and coordination agency across Government.

Integration of land use, waste utilisation and biomass fuel production are central to replacement of fossil fuels and by integrating land use, forestry and energy we can start addressing greenhouse gas emission reduction from a multisector approach.

Q2

Chapter 3 of this issues paper mostly looks at ways to reduce emissions directly at their source. What other approaches would help identify opportunities to effectively reduce emissions?

While the reduction of emissions at source puts a clear focus on an action which has clear linkage to GHG emissions and is not only identifiable but is measurable, there is often a disconnect between the investor and the beneficiaries of climate change action.

The ETS is a slow, inefficient and indirect mechanism for encouraging transition from use of fossil fuels. If we want it to occur by 2030 then we need a more direct mechanism. This could include a tax with recycling of the revenue to assist faster transition, or even more direct public investment to lower the risk for participants. This could involve lifting public investment in the traditional area of public good pre-commercial research and development.

Another mechanism could be for Government (on behalf of the community) to purchase units of emission reduction. The purchase of emission reduction units would be directly linked to the outcome of specific projects. This could be similar to the previous New Zealand Government ***Projects to Reduce Emissions Programme*** (http://www.mfe.govt.nz/publications/climate-change/2003-electricity-factor-report-projects-reduce-emissions-programme) which assisted get many emission reduction projects implemented.

The purchase of emission reduction units recognizes that the community should pay for externalities/public goods such as greenhouse gas emission reductions.

Adoption of a carbon tax which can be directly applied to fossil fuel users would also produce revenue which can be recycled back into assisting business transition to a low carbon

economy. This has already been done in a way by the waste levy which is recycled into waste minimisation projects and recently into waste –to-energy projects eg tyres.

Many of the benefits of transition from fossil fuel to biomass fuels accrue to the community but currently there is no explicit payment to the investor for these benefits. This is a market failure. A direct carbon tax approach similar to the Road tax would be direct, simple to administer and allow recycling of the tax revenue back into greenhouse gas emission reduction opportunities.

Liquid and solid organic waste along with proven conversion technologies can provide biofuel resources which can replace fossil fuels. The current central and local government waste policy focus has been on waste minimization and limits utilization. Being able to use waste as a tool for greenhouse gas emission reduction will require legislative changes and a refocusing of current waste management practices.

The current approach to greenhouse gas emission reduction tends to look at opportunities each in isolation when a total value chain approach would unleash a wider range of opportunities. Consideration of the whole value chain also opens up the potential to meet the same needs in completely new ways. It is recommended that the Commission look at the wider benefits, identifying and quantifying some of the different value chain activities, and develop targeted measures.

The Renewable Heat Incentive scheme in the United Kingdom https://www.ofgem.gov.uk/environmental-programmes/non-domestic-rhi has been very successful in assisting transition from coal and gas fueled non-domestic heat facilities to grow the amount of biomass heating. With modification a similar scheme would assist speed up the transition from coal and gas to biomass fueled heating.

Q3
To what extent is it technically and economically feasible to reliably measure biological emissions at a farm level?

Q4
What are the main opportunities and barriers to reducing emissions in agriculture?

The focus of policy work to date in the agricultural sector has been biological emissions and other emission reduction opportunities in agriculture have been ignored. These emission reduction opportunities available to farmers to offset their biological emissions will be significant and should be considered, but need to be addressed across the total value chain. For example farmers are able to source biomass which can be used by food processors as a replacement fuel for coal, which indicates that the parties need to work together. There needs to be mechanisms to facilitate addressing the current gaps across the food production and processing sector. Dairy farmers could sell milk and biomass fuel to their milk processors.

The wide range of opportunities for assisting reduce emissions on farms can include:

- Collection and processing of animal excrement into biogas and fertilizer to avoid runoff into waterways.
- Use of biogas produced on-farm as biomethane fuel for vehicles, heat and on-site electricity use.
- Use of land not in efficient farm production (gullies, steep slopes, shelterbelts etc) for the growing of trees. The trees can provide additional revenue streams to landowners from export, processing into lumber and processing into wood fuel.
- Collection of forest harvest residues from farm forestry for use as wood fuel.
- Use of break crops and crop production residues eg corn stover, straw etc as a supplementary feedstock for anaerobic digestion of organic matter and production of biogas and fertilizer.
- Use of break crops such as rape as a feedstock for the production of liquid biofuels.
- Pelletising of herbaceous matter eg straw, miscanthus etc for use as a fuel in industrial heat plant.

Farmers are able to provide economies of scale as they are very experienced at creating and managing co-operatives. Collectively they would be able to enter into long term biomass fuel supply contracts which heat plant owners seek in order to manage their fuel supply risk.

The opportunities to reduce emissions in agriculture are complementary to traditional farming and are not instead of. In the New Zealand context the bioenergy opportunities are based on the use of crop production or food processing residues so are fully sustainable. At present there appears little economic justification for the growing of energy crops.

In order for farmers to minimize the externality risk they face from biological farm emissions there needs to be mechanism for offsets to be recognized so that net farm emissions (including offsets) are considered.

Q5

What are the issues for government to consider in encouraging alternative low-emissions land uses?

While land use is largely in the hands of land owners the long lead time for many greenhouse gas reduction or mitigation opportunities eg forestry, results in opportunities being forgone. Purchase of emission reduction units by the Government from landowners can move the focus of investments from short term to long term thus assisting adoption of low –emission/mitigation land uses.

The bioenergy sector value chains involve many different participants from land owner, forest owner, biomass residue collection, processing of residue into fuel, and delivery by biomass fuel suppliers. This is unlike the other renewable energy sources such as hydro, solar, wind and geothermal where the energy resource is homogenous and involves few parties. The bioenergy market is thus more complex and this in itself is a significant market barrier which necessitates development of a number of tools, information dissemination, best practice training and facilitation.

Currently there is limited consideration by the different land use stakeholders of the range of low-emission land uses and climate change opportunities. There needs to be encouragement and facilitation for the full range of stakeholders to collaborate on investigating the opportunities.

Q6
What are the main barriers to sequestering carbon in forests in New Zealand?
The lack of a supportive forestry and wood processing sector strategy is a significant barrier. As a result forest owners act only in their own short term commercial interest whereas a long term strategy would encourage long term benefits such as for climate change. This is a market failure. Purchase by the Government of emission reduction units from additional forest planting would be a payment for these community benefits. They can also be linked to the community benefits of added value processing of the wood occurring within New Zealand instead of export.

Biomass from wood processing is the best source of wood fuel so the stronger and bigger the amount of wood processing that is undertaken within New Zealand the greater the amount of process residues available as wood fuel and as a result more fossil fuel substitution can occur.

Q7
What policies, including adjustments to the New Zealand Emissions Trading Scheme, will encourage more sequestering of carbon in forests?

Q8
What are the main barriers to the uptake of electric vehicles in New Zealand?

Q9
What policies would best encourage the uptake of electric vehicles in New Zealand?

Q10
In addition to encouraging the use of electric vehicles, what are the main opportunities and barriers to reducing emissions in transport?
Electric vehicles have positive attributes for short cycle use but long cycle and heavy load use will probably be a challenge for a number of years. This is where liquid and gaseous biofuels will have a decided advantage over electric as liquid and gaseous biofuels require minimal modification of vehicles, and infrastructure additions for heavy road transport can be modest.

Heavy grade liquid biofuels for marine and rail applications are technically available today

but market demand is necessary to get them to the stage of commercialization. With other policy drivers, such as a requirement to move to low sulphur fuels in marine applications, a transition to low carbon transport could occur within a short period of time.

Processing organics waste into biogas and subsequently through clean up into biomethane provides a low cost transport fuel for use in existing diesel vehicles. This would be of particular value where the biomethane can be used for on-site vehicles as occurred for many years at the Christchurch sewage treatment facilities.

As communities transition to zero organic waste to landfills, food processors treat all their food waste, and waste water treatment facilities modify the facilities to maximize the processing of organic matter into biogas the quantities of gas available reach economies of scale. Using the biogas for heat or as a vehicle fuel is a high value use because it reduces emissions of methane as a greenhouse gas as well as substituting for use of fossil fuels for heat or as a vehicle fuel. If gas storage is installed then the biogas can also be valuable for electricity generation during electricity demand peaks when prices are high. However vehicle fuel use of the biogas will generally require least capital investment

While the users of vehicle fuel are principally influenced by price there is no payment to biofuel sellers for the community environmental benefits such as clean air and reduced sulphur emissions. Again a market failure.

However it is quite possible that a market that is willing to pay the premium for biofuels will emerge for transport in sensitive industries (e.g. food, tourism). Underpinning work on this potential willingness-to-pay and positioning NZ to meet the market is required to a reduce the risks and potentially realise a significant opportunity.

Q11
What are the main opportunities and barriers to reducing emissions from the use of fossil fuels to generate energy in manufacturing?
Biomass can be used as a replacement for fossil fuels in a wide range of applications around the supply of heat, and on-site electricity used in manufacturing.

There is enough recoverable woody biomass available throughout New Zealand that 60% of current coal use in heat plant could be replaced by biomass fuel. Bioenergy Association has identified that 4PJ pa of existing coal fueled heat plant could convert to wood fuel by 2030 and 11PJ pa by 2040. By 2040 this would require an additional 2 million tonnes of wood fuel per annum and produce emission savings of 1000kt CO_2-e per annum.

Because of the emerging nature of the wood fuel supply market the timeline is out to 2040 as under current policies the growth in fuel supply has to evolve in an orderly manner through incremental growth. To achieve these emission reduction levels would require the New Zealand Energy Efficiency and Conservation Strategy (NZEECS) to be fully implemented by 2022. (Without a plan for implementation as at present this is unlikely to occur). The

2040 level of substitution opportunities could be achieved by 2030 if more progressive low carbon economy policies than are currently in the NZEECS were adopted.

The main barrier to the use of wood fuel to reduce greenhouse gas emissions is that unlike other renewable energy sources biomass is generally non homogenous, comes from many variable sources and involves many different parties throughout the value chain. Minimisation of the risk of biomass fuel supply requires aggregators of the fuel, and good fuel recovery and preparation, so that a consistent and reliable fuel is available to heat plant owners and operators. If the wood fuel supply market continues to be treated as a simple commodity market such as coal and gas then its growth will be slow. If however assistance to development of the biomass fuel supply market is provided so that it is efficient and encouraged to grow, then the growth in replacement of coal will be greater than currently assumed.

Adoption of waste-to-energy programmes around use of solid and liquid municipal waste and food processing waste could result in emission reductions of 90kt CO_2-e per annum by 2030 and 150kt CO_2-e per annum by 2040. Many of the waste-to-energy opportunities are financially attractive today with around 4-6 year financial payback periods but because waste-to-energy is not currently recognized by Government as a greenhouse gas reduction opportunity the sector will take some time to get momentum. The way in which waste is often collected results in it either not being available or is contaminated and unusable except for disposal in landfill.

Waste-to-energy greenhouse gas emission reduction opportunities are often potentially very attractive as waste is currently often a cost to communities and has an existing waste levy which could be used to encourage use instead of disposal. Methane is also 23 times more significant as a greenhouse gas than CO_2.

The current Government targets of 1% reduction is related to GNP productivity is not applicable to assessing individual manufacturing opportunities so has no relevance to the market other than as measure for Government. Targets that are relevant to specific sectors and applications need to be developed so that they can relate to specific programmes or interventions. These could and should be regional and include both CO_2 and methane emissions.

The ETS is premised on the belief that it will affect the market cost of using fossil fuels. As a micro economic tool for decision makers it provides little assistance in the short term as it is too indirect and at the whim of other party's actions. A more direct market intervention such as a carbon tax would be relevant to individual business decision making. A carbon tax would also result in funding which could be recycled to assist greenhouse gas emission reduction opportunities.

Q12

What changes will be required to New Zealand's regulatory, institutional and infrastructural arrangements for the electricity market, to facilitate greater reliance on renewable sources of energy across the economy?

The wood energy market is focused only on heat and onsite electricity supply because of the relative economics of electricity from other renewable energy sources. However the waste-to-energy market can produce biogas which is storable for use at periods of peak electricity demand when electricity prices are higher. The value of biogas as a controllable electricity source and biomass to substitute for electric thermal loads would be enhanced with greater adoption of time of day electricity pricing in the retail electricity market.

Q13

What evidence is there on the possible physical effects of future climate change on sources of renewable energy in New Zealand, such as wind, solar and hydro power?

The rate of growth of biomass will be affected by changes in ambient temperature and CO_2 concentrations but on the other hand more extreme climates resulting in high winds can destroy forest sources. We would note that NIWA in a report for MfE has suggested the impacts of climate change this century are unlikely to statistically significant.

Q14

Apart from the regulation and operation of the electricity market, what are the main opportunities and barriers to reducing emissions in electricity generation?

As noted earlier, getting clean electricity will require reducing the level of fossil fuels generation, predominantly for peak loads and dry years. Storage (including EVs) and demand side management will help manage some of this, but biofuels both centralized, district and by end users will have an important part to play. Biogas in particular is storable and valuable for peak time electricity generation.

Q15

What are the main opportunities and barriers to reducing emissions in industrial processes (such as the production of steel, aluminium and cement) and in product use (such as the use of hydrofluorocarbons in refrigeration and air conditioning equipment)?

There is some experimentation with the use of biomass to replace coking coal (Carbonscape), but that is currently small scale.

Q16

What policies and initiatives would best promote the design and use of buildings that produce low greenhouse gas emissions?

A greater use of timber in buildings would result in more wood processing which produces the best biomass fuel.

The use of wood pellet fuel in residential heating not only reduces the use of fossil fuel but because it is a controlled combustion to produce heat and clean air contributes significantly to the improvement of air quality in urban areas.

Q17

What are the main opportunities and barriers to reducing emissions in waste?

Disposal of any organic waste to landfill will result in methane emissions which are 23 times more significant than CO_2 as a greenhouse gas. Landfills are an inefficient method of processing waste as only around 60% of methane is captured at the best designed and managed landfills. All organic waste can be processed into energy by use of proven technologies. The barrier to this occurring is not economic but by the waste management practices occurring throughout New Zealand. Best practice waste management could result in near all organic waste being used productively as a source of energy. This has been recognized by territorial authorities adopting *zero organic waste to landfill* policies but they need assistance on how this can be achieved. In particular use of waste is assisted if waste is separated at source and not contaminated through bulk collection.

Liquid trade waste currently processed in sewage treatment facilities or disposal to landfill can all be utilized to produce energy.

Modern waste-to-energy practices and technologies could result in near 100% of methane produced from waste being removed as an emitted greenhouse gas.

Waste-to-energy plant based on anaerobic digestion of wet organic biomass can be located in urban areas and efficiently process all food waste. By choice of location close to the food waste source waste transportation emissions can be reduced significantly. Internationally anaerobic digestion facilities are located in urban areas without consenting problems. Combustion of dry organic waste can also be undertaken in urban areas when the plant is designed to meet appropriate consent conditions.

The biggest barrier to the reduction of emissions from waste is attitudinal and a lack of will by territorial councils to want this to occur. Guidance from Government would assist address this barrier.

Q18

Policies to lower emissions from particular sources, technologies and processes can have interactions with emission sources in other parts of the economy. What are the most important interactions to consider for a transition to a low emission economy?

With regard to bioenergy opportunities there are three important policy cross linkages.

1. Implementation of the NZ Energy Strategy (NZES) and NZEECS. The Key Focus Areas of the NZES related to *Developing our Energy Potential* and the NZEECS relating to

Unlocking our energy productivity and renewable potential set out tasks and actions which would significantly achieve the stated objective of *Reduce energy-related greenhouse gas emissions*. Implementing these cross sector strategies would make a significant reduction in greenhouse gas emissions yet there is currently little effort across central and local government to develop plans for their implementation. Serious pursuit of these strategies by Government would assist transition to a low emission economy.

2. Since the demise of a united public service with the adoption of the State Sector Act 1988 there has been a failure in the machinery of government for government agencies to effectively work on cross government policies that affect multiple policies and programmes such as occurs with climate change. Mechanisms need to be developed so that the climate change policy development and implementation of programmes are more integrated across government.
3. This inquiry by the Productivity Commission is the first serious attempt by Government to involve the sectors in developing a plan on how to achieve the Paris climate change targets. It is recommended that because the transition to a low emission economy is far reaching across all Government policies that an on-going reference group or similar (such as the Land and Water Forum) be established.
4. Specific government programmes that affect the ability of bioenergy solutions to contribute to reducing greenhouse gas emissions are the forestry and wood processing strategies and the waste strategies. Interactions with both these programmes is critical to the level of greenhouse gas emissions that can occur.

Q19

What type of direct regulation would best help New Zealand transition to a low-emissions economy?

Mandatory reporting of greenhouse gas emissions on business and government entities would provide information not currently available and encourage a focus on where effort on emissions should be addressed.

Currently there is no annual monitoring by MBIE of the use of biomass for energy yet biomass contributes 14% of energy used. Monitoring and reporting of the use of biomass from wood and waste would provide sound data on which policies can be developed. Monitoring that is done is indirect and fails to cover the full market.

There is no annual monitoring of heat use throughout the economy. A database does exist of what heat plant exist but this is not maintained and is very inaccurate. Considering the importance of heat energy to the economy it is critical that heat use is measured and monitored otherwise any programmes and policies will always be simply guesswork.

The monitoring and reporting of regional methane production is not undertaken adequately such that the results would provide a focus for each region to reduce its emissions, most of which come from local government controlled waste infrastructure and collection practices.

Q20
Acknowledging the current review, what changes to the New Zealand Emissions Trading Scheme are needed if it is to play an important part of New Zealand's transition to a low-emissions future?

Q21
What type of market-based instruments would best help New Zealand transition to a low-emissions economy?
A carbon tax would provide more guidance to investors considering new facilities which have the potential to reduce greenhouse gas emissions. The ETS is an indirect tool that depends on the whims of the market whereas a carbon tax is direct and controllable. It directly affects decision makers when considering fuel choice and leaves no uncertainty.

The lack of payment for the externality benefits from bioenergy facilities, which is often the principal benefit, mean that in the main transition from fossil fuels to biomass fuels are difficult for investors to justify. Adoption of some renewable heat incentive as has been used in the United Kingdom would speed up the transition.

The increased development of information relating to the potential bioenergy solutions, and its dissemination, would improve development of the bioenergy market. Because of the diversity of participants it is inefficient for individual parties to source their required information.

Access to international research and best practices is available to New Zealand through the IEA Bioenergy programme of which New Zealand is a member. However access to the detailed information is limited because there is no funding to participate in the specific Task Groups. Funding to allow access to these Task Groups would reduce unnecessary expenditure on duplication of research already undertaken internationally.

Cost reflective pricing of other fuels would assist. Fuels substitute for one another. Some are highly competitive with good margins in one application allowing them to prevent other fuels from competing in others. Peak electricity pricing has been mentioned.

Q22
What type of support for innovation and technology would best help New Zealand transition to a low-emissions economy?
With regard to the bioenergy sector many of the technologies are well proven rather it is because of its complexity with multiple fuel supply parties that assistance with market information, technical best practice, and facilitation of parties would assist. At present the perception on the availability of biomass fuel is a major barrier and addressing this perception requires attention. The inability of individual fuel suppliers to fund the develop the market tools eg standards, accreditation etc creates a market failure where collective action is necessary. The sector is in its infancy and most parties are small so do not have the financial ability to fund the necessary market tools.

On the longer-term opportunities and risks beyond the reach of individual companies NERI (an affiliate of Bioenergy Association) is about to publish a more general energy research strategy for NewZealand that has a significant bioenergy component. We understand NERI is separately in discussion with the Commission and we support their proposed strategy.

Q23
How can New Zealand harness the power of financial institutions to support a low-emissions transition?
Access to capital is a significant barrier for renewable energy based solutions because renewable energy facilities tend to have high capital costs and low operating costs compared to fossil fuels. Some international jurisdictions have allowed accelerated depreciation as a fiscally neutral support mechanism. This makes recognition that the benefits of renewable energy solutions are in the main for future generations. It also recognizes that many of the benefits of greenhouse gas reduction are public good externality benefits for the community at large and not for the investor.

In the end the financial institutions will need to prudently have regard to the risk and returns. They therefore have an interest in good analysis of the opportunities and risk emerging in the sector and should be encouraged to invest in this kind of analysis focused on the NZ situation.

Q24
What type of alternative approaches (such as voluntary agreements or support for green infrastructure) would best help New Zealand transition to a low-emissions economy?
A carbon tax would encourage those emitters able to reduce emissions to look for solutions.

Payment for community externality benefits from renewable energy opportunities would assist the transition.

Q25
In addition to "core" climate policies and institutions, what other changes to policy settings or institutional frameworks are required to effectively transition New Zealand to a low-emissions economy?
Because the community benefits from bioenergy solutions relate to regional economic growth, employment and achievement of environmental outcomes the climate policies need to integrate with the full range of government policies.

Q26

What are the main uncertainties affecting New Zealand businesses and households in considering investments relevant to a low-emissions future? What policies and institutions would provide greater confidence for investors?

The NZTS provides significant uncertainty as no one can identify what, if any, effect on future fossil fuel prices it might have. The NZTS is also a mechanism not controllable by investors as it is dependent on the whim of the market what might happen. Yet the view on future fuel prices is an important consideration for investments when the economic life of the facility could be around 30 years. The first 15 years at least is critically significant.

Q27

What approaches, such as regulatory frameworks or policy settings, would help embed wide support among New Zealanders for effective reduction of domestic greenhouse gas emissions?

Government leadership and integration of climate policies across all regulatory areas and having a government that appeared serious about climate change would assist achieve wide support amongst New Zealanders. The very hands off approach currently results in nothing being achieved.

Q28

Is New Zealand's current statutory framework to deal with climate change adequate? What other types of legislation might be needed to effectively transition towards a low-emissions economy?

No. For example there is regulatory guidance for the use of renewable energy for the generation of electricity but there is no such similar guidance as to the use of waste, added value wood processing, wise use of land, and the use of renewable energy for heat. National Policy Statements in these areas would provide significant assistance to transition.

Q29

Does New Zealand need an independent body to oversee New Zealand's domestic and international climate change commitments? What overseas examples offer useful models for New Zealand to consider?

It is not so much that there is a need for an independent body. What is required is for a properly funded body with a serious mandate to develop and implement a plan for how the Paris targets are to be achieved. This body can undertake sound investigation of opportunities using an expert approach and also advise on the appropriate targets that could be achieved. This could be a Crown Agency.

Q30

How can adaptability best be incorporated into the system supporting New Zealand's low-emissions transition?

Markets operate when they are well informed and have quality information on which to make decisions. Having independent information on the options for transition and publicly

available analysis of the market drivers and in particular scenarios of the future would assist investors make decisions. Currently with lack of market information it is prudent to stay with what is known best, which essentially means not making investment which would assist a low-emissions transition.

Q31
What types of analysis and underlying data would add the greatest value to this inquiry?
Improving the collection of data on manufacturing heat use and providing an on-going framework for annual monitoring would mean that policies would be established based on fact rather than guesswork.

Analysis of the regional discharge of methane from waste would provide a framework for regional decision making. Establishing a framework for its on-going monitoring would then allow progress to be assessed.

No work has been undertaken on the quantum of opportunities that farmers have available to them from their existing farm operations that could offset biological emissions.

Analysis of the full value chain of opportunities that are available from the wood energy sector would assist with development of policies.

Q32
What should be the mix, and relative importance of, different policy approaches (such as emissions pricing, R&D support, or direct regulation) in order to transition to a low-emissions economy?
Because climate change is a community externality benefit there needs to be a full portfolio of interventions to assist investors transition to a low carbon economy..

Q33
What are the main co-benefits of policies to support a low-emissions transition in New Zealand? How should they be valued and incorporated into decision making?
The co-benefits of bioenergy solutions are wide and cover regional economic development, employment and the achievement of environmental outcomes.

Q34
Who are the most important players in driving forward New Zealand's transition to a low-emissions economy?
Leadership from Government and a serious will to achieve the Paris Climate Change targets by reduction of greenhouse gases rather than purchase of international carbon credits is the single most important action that can be done in order to achieve the targets.

Q35

What measures should exist (and at what scale and duration) to support businesses and households who have limited ability to avoid serious losses as a result of New Zealand's transition to a low-emissions economy?

There should be minimal losses of transitioning to a low emissions economy as in general there will be benefits as well as losses. An orderly approach will also allow for a smooth transition.

However changes to energy pricing to reflect true costs (eg electricity) may well cause disruption to those exposed to it. This is probably best dealt with as an affordability issue, although the heating etc of rental properties may require direct intervention.

Q36

What are the essential components of an effective emissions-mitigation strategy for New Zealand that will also be economically and politically sustainable?

If there is a clear publicly available plan developed by Government then this will provide more certainty than currently exists.

Q37

Should New Zealand adopt the two baskets approach? If so, how should it influence New Zealand's emissions reductions policies and long-term vision for the future?

The two basket approach is not supported as a key criteria of any policy should be that it is simple to understand and use. Already the NZTS is too complex and not understood by most interested parties and making distinctions like this when exact impacts are still being understood is pushing the science beyond its current limited.

Much more appropriate is to take a risk management approach, namely to give priority to those areas where the upsides are high and the downsides are low, while investing in understanding how to manage the risks that have significant net downsides for the country.

Q38

How should the issue of emissions leakage influence New Zealand's strategy in transitioning to a low-emissions economy?

The policies adopted in New Zealand should not be too out of line with other countries.

Q39

What do you see as the main benefits and opportunities to New Zealand from a transition to a low-emissions economy?

The bioenergy contributions to a low emissions economy can provide a wide range of new business and products based around the co-products of the energy products. Often the bio-based products produced as co-products of the energy products are of higher value than the energy products.

The energy and co-products from biomass will be replacement of petroleum based materials and products as the market demand moves against their use and/or the cost of petroleum increases because of various regulatory interventions to internalize the externalities.

Q40
What does your long-term vision for a low-emissions economy look like? Could a shared vision for New Zealand be created, and if so, how?
A shared vision for a low carbon economy based on use of renewable natural resources and waste fits with the already shared vision of a Clean Green New Zealand. The community already embraces this vision which can be strengthened by adoption by government of the policies outlined in this submission. In this area the community aspirations want this to happen but central government is yet to get on board.

Critical to adopting this vision is thinking of biomass and waste as valuable and not a problem. This requires a positive mindset with regard to biomass and waste as an opportunity. With current technology biomass and waste is able to be recycled or used as a feedstock for new products. In a world where resources are finite it is imperative that communities move to sustainability and the utilization of waste, rather than hiding it, should become a platform for the community economic and social wellbeing.

Utilisation of biomass and waste should also be considered within the nation's economic growth strategy and climate change action plan. Utilisation rather than disposal of waste can create employment and new business. Organic waste can be recycled into new products, processed into compost, or used as a feedstock for the production of energy. With the right policies and leadership from central government many of these applications are already economic or close to being economic.

Bioenergy Association would be pleased to meet with the Commission to discuss aspects of this submission.

Brian Cox
Executive Officer

Mob 027 4771048
brian.cox@bioenergy.org.nz