



1st September 2010

**SUBMISSION TO THE MINISTRY OF ECONOMIC DEVELOPMENT ON
THE DRAFT NEW ZEALAND ENERGY STRATEGY (NZES)
AND
NEW ZEALAND ENERGY EFFICIENCY AND CONSERVATION STRATEGY (NZECS)**

1. Executive Summary

1. The Bioenergy Association of New Zealand (BANZ) supports the development of the draft New Zealand Energy Strategy (NZES) and draft New Zealand Energy Efficiency and Conservation Strategy (NZECS).
2. While we support the strategies, we believe that the policies and principles underlining the strategies and actions must be further developed. The NZES Document sets out an appropriate framework for the sector putting a balance on supply and demand and incorporates all the different facets of energy. It is a sound base document from which an energy and efficiency and renewables strategy could be developed.
3. The draft NZECS however, lacks the detail of a strategy and does not set out specific actions. This level of information is key if the Strategy is to provide specific policy guidance to decision-makers, the public, investors and energy users and thus enable New Zealand to take economically efficient pathways to achieve the stated goals. In its current form the NZECS does not follow through from the NZES and therefore needs considerable further work.
4. In order to fulfil the Government's vision for the energy sector to 'maximise its contribution to the economy' then renewable energy must be pushed more to the forefront, as it can offer long term, sustainable and cost-effective energy for the New Zealand economy.
5. BANZ believes that bioenergy can contribute significantly towards achieving the goals of the NZES and NZECS. However, the two strategies do not cover all bioenergy options available and those that are noted are limited in detail. The strategies must include the widest scope of bioenergy options, with goals and targets for how each can contribute.
6. In partnership with the New Zealand Forest Owners Association, BANZ has developed a draft New Zealand Bioenergy Strategy (attached) which sets out targets and key areas of focus for bioenergy in phases up to 2040. This Strategy

will be supported by three further sub-strategies (biogas, liquid biofuel, wood fuel (covering wood fuel and wood pellets) that will set out the goals for each area and activities to achieve them.

This strategy is seen as both aspirational and achievable; with very major impacts on the New Zealand economy, energy usage and energy security. It states:

“Economic growth and employment, built on New Zealand’s capability and expertise in growing and processing wood-crops and converting organic by-products to energy, leading to new business activities which by 2040 supply more than 25% of the country’s energy needs, including 30% of the country’s transport fuels.”

7. BANZ suggests that the Bioenergy Strategy could be a model for what the NZEECS encourages other sectors to develop. Such area specific Strategies can provide the focus on action that is necessary if targets are to be achieved. Further, where there is diversity within one area (as in the case of bioenergy), sub-strategies as noted above, with clear Action Plans to deliver on the Strategic targets, can be used.

2. Introduction

8. This submission is made by the Bioenergy Association of New Zealand (BANZ), which was established in 2001. BANZ represents a broad range of stakeholders who have a commercial interest in bioenergy, including foresters, wood and organic waste processors, large energy companies, specialist service providers, energy users, equipment manufacturers, biofuels producers, renewable energy proponents and well established sector consultants.
9. BANZ Interests cover biogas, liquid biofuels, wood fuel and wood pellets. Our Members are typically engaged in activities in relation to at least one of these areas. Our four Interest Groups focus on these topics. Each has a significant contribution to make to the New Zealand energy mix.
10. In making this submission in support of the proposed NZES and NZEECS strategies, BANZ is treating the strategies together as the respective documents are intertwined in suggested actions and desired outcomes. In the main we consider that the draft NZES sets out an appropriate and sound framework for the sector. It puts a balance on supply and demand and incorporates all the different facets of energy. Our concern lies with the NZEECS and in particular that:
 - a. There appears to be a level of disconnect between the two Strategies in terms of the identified Areas of Focus in the NZES. We believe for consistency and continuity the draft NZEECS should set out clear targets and pathways for each of the 12 Areas of Focus as set out in the NZ Energy Strategy (page 8).
 - b. Overall, the level of detail in the NZEECS is significantly below that which would be expected in order to provide a basis for the implementation of an effective policy and to achieve the desired outcomes. Clear Strategies and

Action Plans should be developed for each of the NZEECS Areas of Focus. In its current form, this lack of detail makes the draft NZEECS of little value.

- c. Most statements in the NZEECS sit under the heading of 'Policy' and set out a government commitment to 'do something'. These are purely statements of intent, they lack detail on 'what' and 'how' and 'by when' and as such they are neither a Strategy nor an Action Plan.
- d. The targets in the NZEECS (page 21) read as aspirational statements with no relationship to real activities. We consider that this is where specific actions should be set out.
- e. With respect to bioenergy, the NZEECS makes a passing mention of the contribution from bioenergy but, consistent with the rest of the NZEECS, lacks sufficient detail as to ascertain activities, targets (across key bioenergy areas), roles, deliverables or timescales. The NZEECS notes in a number of places high level comments about the 'potential of bioenergy'. We consider that this potential is a given and has been for years. It is quantified in the NZ Bioenergy Strategy. It is the role of the NZEECS to set out clearly this potential and how it can be unlocked.
- f. Added to this, to consider bioenergy with geothermal heat technologies together is inappropriate as they have quite different drivers.

3. Contribution from Bioenergy

11. The Bioenergy Association is currently focused on the development of a New Zealand Bioenergy Strategy. The first draft of this document has already been released for comment and a second draft is under preparation.

12. As its "Vision" the Strategy sets out the following:

"Economic growth and employment, built on New Zealand's capability and expertise in growing and processing wood-crops and converting organic by-products to energy, leading to new business activities which by 2040 supply more than 25% of the country's energy needs, including 30% of the country's transport fuels."

13. There are multiple national economic benefits to be realized via the proposed Bioenergy Strategy including:

- a. The extraction of additional value from existing wood, organic wastes
- b. Diversified and higher value land use, and extensive new planting of forests and fuel crops
- c. Economic growth from new forests and energy crops that will:
 - Provide additional revenue and business resilience for land owners
 - Improve wealth creation from NZ's natural resources and skill base
 - Reduce reliance on imported fuels and help with carbon goals
 - Transition NZ to a lower carbon economy whilst increasing employment
 - Strengthen NZ's international green trading platform
 - Generate value-added export revenue
 - Reduce environmental impacts to air, soil and water.

14. In order to succeed the Strategy requires the active participation from a number of parties as follows:
 - a. Aspirational leadership by Government:
 - Policy (including ETS) and procurement directives
 - Demonstration of commitment (e.g. wood fuel in schools, hospitals, and biofuels in government vehicles)
 - Across-government support and action
 - b. Clear definition as part of an overarching forest industry:
 - Diversified products (logs, chip, pellets, biochemicals and biofuels)
 - Incentivising the optimisation of use of harvest and processing residues
 - Improved and more efficient by-product recovery
 - c. Greater technological capability to assess wood-to-energy conversion technologies
 - d. A refocusing of research activities on commercial objectives
 - e. Links to waste minimisation and biomaterials strategies
 - f. Support for SME players and encouragement to existing corporate players
15. The Strategy builds on the application of proven bioenergy technologies; using existing and new natural feedstocks and organic wastes as follows:
 - a. Heat from forest harvests, fuel crops and wood growing and processing residues.
 - b. Biogas from landfills, solid and liquid wastes, municipal and dairy wastes, food processing residues and energy crops.
 - c. Liquid biofuels:
 - Biodiesel from used cooking oil, animal fats, canola, residues
 - Bioethanol from whey, black liquor, forest and fuel crops and residues.
16. The Strategy aims to provide a commercial focus to the growing bio-economy and realise greater value from New Zealand's current and potential additional forestry resources. It lifts growth in Bioenergy to 25% of New Zealand's energy requirements by 2040; a level substantially above the current 8.5% of national energy use – delivering attendant economic, social and environmental benefits.
17. In comparison a “business as usual” approach to bioenergy would achieve only around 9.5% of New Zealand's total energy needs by 2040, including very little transport fuel.
18. This projected growth is driven by the underlying demand for heat and transport fuels, and the potential to satisfy these demands economically from proven wood fuel and biogas technologies as the economics of the technologies are improved by further development and a cost of carbon is further introduced in the economy.
19. The Bioenergy Strategy will lead to the following outcomes:
 - a. Greater value from existing forest harvests
 - b. Extensive planting of new forests and fuel crops on marginal and pastoral land
 - c. Economic growth and employment from higher-value land use, new large-scale industries
 - d. More than 25% of NZ's energy from bioenergy including:

- a. 30% of NZ transport fuels from biomass
 - b. A 60% increase in biomass use to produce heat
 - e. Production of value added bio-materials
 - f. Export of wood pellets, biofuel, and tallow/used cooking oil biofuel production capability. (Specifically technology but wood pellets are also being exported currently)
18. It is proposed that the Strategy Vision will be achieved in three phases:
- Establishment Phase (2010 to 2015)
 - Development Phase (2015 – 2020)
 - Expansion Phase (2020 – 2040 and beyond).
19. The **Establishment Phase (2010 to 2015)** will see growth based on existing resources, processes, markets and expertise, creating a basis for broader acceptance and utilisation of existing and developing technologies and products, and increasing understanding of the market drivers for wood-based energy, wood fibre, and other products. Export of biomass-based fuels in the form of pellets will underpin the early growth in planted areas of forests and fuel crops.
20. The wood fibre market will be developed to provide quality feedstock with forward contracts to the heat market, and as a basis for later expansion to supply for production of transport biofuels and bio-chemicals extraction in later phases.
21. In this phase the supply-chain infrastructure will be developed and the technical and economic platforms for the Development Phase will be confirmed. Decisions will be made around crops, processes, funding and future fuel production; based on expanded and commercially focused research into fuel crop growing and processing technologies, and trial plantings. Technology transfer programmes will be established and New Zealand research focused on being fast followers and adaptors of overseas research initiatives.
22. The quality requirements for liquid fuels in particular will see extensive development of regulatory frameworks and the development of experience of production within these. Government and investor support will be secured and work will start on the development of suitable standards and controls to ensure that new crops can be shown to be sustainable and are not a threat to New Zealand's bio-security.
23. The **Development Phase (2015 – 2020)** will see construction of demonstration plants for transport fuel production and accelerated plantings of energy forests and fuel crops in selected regions, based on the platform built in the Establishment Phase. Heat use growth will continue, maximising available opportunities. Growth in fuel-wood demand and the export of wood chip and pellets will drive improvements in infrastructure and provide economies of scale for expansion of planting while harvesting technology developments will develop to allow economic harvesting of wood currently left in the cutover. This, and the growth in energy crops as part of mixed land use, offers significant growth in value to landowners.

24. This phase sees the commencement of an investment programme estimated to be in excess of six billion dollars in crop planting and construction of production plants; requiring a mix of supporting Governmental and other measures for these lignocellulose to transport fuel initiatives.
25. In the **Expansion Phase (2020 – 2040 and beyond)** investment in bio-refineries for the production of transport fuel and other associated bio-materials will be supported by further expansion of fuel crops and energy forests on marginal land, and on-going research and development of new higher-value products.
26. The Strategic drivers of the Bioenergy Strategy are as follows:
 - Markets
 - Natural Resources
 - Technology
 - Mechanisms

Markets

27. Progressively develops a range of products based on biogas, wood energy, biodiesel, bioethanol and bio-oil for local use and export. These will be produced from existing organic residues, new forests and crops to meet heat and transport fuel demand;
28. Facilitates a 60% increase in the use of wood fuel for heat production;
29. Anticipates increased demand for sustainable transport fuels replacing fossil fuels;
30. Sees export of wood fuel products and markets developed in response to projected worldwide biofuel demand;
31. Sees traditional and emerging bioenergy and bio-based product operations enjoying higher economic returns and performance from integration.
32. Encourages the use of solid, liquid and gaseous bioenergy as part of New Zealand's move towards a sustainable energy economy;
33. In the Establishment phase focuses on expanding the existing wood energy opportunities and the use of biodiesel and bioethanol by pursuing "low hanging fruit" so as to develop "role models" and obtain sector experience.

Natural Resources

34. Builds on the strengths, expertise and infrastructure of the larger players in the energy, forestry and wood processing sector, utilizing existing and new forests and farm-based energy crops to establish regional biomass supply chains to feed the growing wood fibre market with high quality feedstock;
35. Involves working closely with the forestry sector to reduce biomass feedstock growing, collection and processing costs and ensuring delivery to specified quality;

36. Pursues a policy of waste reduction by utilising biomass feedstocks from forestry and wood industry residues, agricultural residues, energy crops and the biogenic fraction of related municipal wastes.

Technology

37. Is based on the adoption of technology transfer programmes tapping overseas researched biofuel production technologies while New Zealand research and trials is focused on establishing the crops which will position us best for the growth phases;
38. Requires coordination of bioenergy initiatives with those relating to the production of bio chemicals and bio-based products from organic feedstocks;

Mechanisms

39. Involves working with Government to establish mechanisms to support investment and overcome market barriers particularly through clustering of market participants (for example, liquid biofuels subsidies and tax exemptions, grants for wood energy and biogas projects);
40. Adds value and improves business resilience for landowners, forest owners and wood processors from fuel crop growth by diversifying their revenue streams and mitigating economic business risks.
41. The Bioenergy Strategy will be supported by four sub-strategies covering:
 - a. Biogas
 - b. Liquid Biofuels
 - c. Wood Fuel
 - d. Wood Pellets.
42. Each of these sub-strategies sets out the potential contribution to the New Zealand energy mix and notes targets for growth. Each is supported by an Action Plan setting out activities aimed at delivering on the targets.
43. BANZ suggests that the Bioenergy Strategy could be a model of what the NZEECS encourages other sectors to develop. As an area specific Strategy it can provide the focus to action that is necessary if targets are to be achieved. Further, where there is diversity within one area (as in the case of bioenergy), sub-strategies as noted above are where the details sit with clear Actions Plans to deliver on the Strategy targets.

4. Other Comments and Recommendations

44. BANZ would argue that there is a significant opportunity, which should be captured in the NZES and NZEECS to do more than simply 'sustain' a reputation as a nation of environmental responsibility, but rather to 'enhance' it. Strategies that seek only to 'sustain' risk forgoing innovation, leadership and opportunities. In a global energy world New Zealand needs to be seen to be pursuing energy opportunities that deliver more than just a reputation.

45. The summary of the Bioenergy Strategy presented in this submission demonstrates that energy-related opportunities are available that offer substantial economic growth. The ability to realize these opportunities is facilitated only by Strategies and supporting Action Plans which set out a clear process for achieving desired from specific actions. In its current form, the NZEECS fails in all aspects.

46. BANZ recommends that the NZEECS be substantially remodeled and that the Government works with Industry Associations in all areas to develop a comprehensive energy efficiency and conservation strategy for New Zealand that sets out for each of the Areas of Focus identified in the NZES:
 - a. What are the desired outcomes;
 - b. How they can be achieved;
 - c. by whom (i.e. the key roles); and
 - d. by when (i.e. the timescale).

Submitted on behalf of members of the Bioenergy Association of New Zealand

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www.bioenergy.org.nz
www.liquidbiofuels.org.nz
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