1 July 2009

Oral submission to the Board of Inquiry on behalf of Bioenergy Association of NZ on the proposal for a National Policy Statement for Renewable Electricity Generation

1. In summary BANZ submits:
    - General support for a National Policy Statement for Renewable Electricity Generation
    - Request that the policy statement be widened to cover all forms of renewable energy (including all biomass conversion technologies) not just electricity.
    - Alternatives to a National Policy Statement (NPS) are not supported
    - Policy 3 reversibility aspects of renewable energy projects are not supported

Recognising renewable energy

2. Heat supplies, biogas and liquid biofuel applications are often able to replace the need for additional electricity generation, or at least replace the need for use of natural gas, coal and hydro for base load generation, and so should be covered by an NPS. Gas and hydro energy can then be reserved for their most valuable use which is for the meeting of peak electricity demand using their quick response capabilities.
3. Heat, biogas and liquid biofuel projects generally have a more local rather than national impact than many electricity generation projects. However because of local interests, the potential for local adverse impacts to be argued as outweighing the broader national interest often occurs. This consideration of local vs national interests will be provided with greater balance through adoption of this NPS if it is broadened to cover all forms of renewable energy.
4. Bioenergy projects can optimise the use of biomass resources (e.g. forest harvest residues, municipal waste, farm waste, crop residues) that are currently wasted. However, obtaining consents for plants that have air and water discharges can be difficult, especially when avoiding, remedying or mitigating any potential adverse environmental effects proves difficult. Policy 2 is therefore supported but with the recommendation that it applies to renewable energy projects in general and not just those associated with electricity generation.
5. Potentially available biomass from existing plantation resources show that New Zealand has between 12 and 31 million tonnes (86PJ and 223PJ) per

annum of woody biomass above its needs for domestically consumed wood products.

6. For the year ending December 2006 the industrial and commercial/ institutional sectors consumed around 112 PJ of heat or 22% of the country's consumer energy use. There is estimated to be 44 PJ of bioenergy produced heat each year and the remainder from other sources1.
7. Recent work undertaken by Scion for their Bioenergy Options project has identified that of the 9.5 to 14.8 million m^3 of wood available in 2010 (depending on price threshold) equates to 12% to 23% of national liquid fuel demand, 33% to 52% of national heat demand and 10% to 19% of primary energy.
8. For example: (Svenska Cellulosa Aktiebolaget) SCA's tissue plant in Kawerau, will reduce its carbon emissions significantly by replacing steam raised from natural gas with locally produced geothermal steam. Steam is an integral requirement at SCA's Kawerau plant for producing household towels, napkins and toilet paper. The steam is currently produced from natural gas firing in boilers. This will free up gas for more valuable electricity generation.
9. Example: Energy For Industry (EFI) and Silver Fern Farms Ltd have installed a new, purpose-built, 8.5MW bio-fuel boiler at Silver Fern Farms' largest meat processing plant, Finegand, near Balclutha. This project has a very high level of technical innovation and is centred on the use, for the first time in New Zealand, of small scale bubbling fluidised bed (BFB) boiler technology that was specifically designed to burn difficult fuels. Additionally, this project is the first in New Zealand to use meat processing waste water treatment plant (WWTP) sludges as a fuel that provides a material net positive energy input [as opposed to incineration of waste sludges]. The new plant allowed Silver Fern Farms to retire a 46 year old coal-fired boiler, which has markedly reduced emissions of CO2, fine ash particulate and sulphur dioxide.
10. Example: Energy for Industry have installed a 12MW heat plant at Winstone Pulp International (WPI) Karori plant. The new heat plant, which replaces a smaller bark burner, is fuelled by bark, other wood wastes, and partially dried pulp sludge, to produce the majority of WPI's heat requirements. In addition to the construction of the new heat plant the project delivered:
    - an upgrade of WPI's sludge de-watering plant
    - construction of a steam drier, which uses waste exhaust heat to further dry the waste sludge to improve its value as a fuel
    - a major upgrade to the wood-waste fuel handling systems which provide fuel for the heat plant

[1] Ministry of Economic Development Energy Data File June 2007

The new heat plant has enabled WPI to reduce LPG consumption by more than 4 million litres per year and eliminated the need to dispose of up to 20,000 tonnes of pulp bio-mass by-products annually. This is now being dried and used as a fuel. WPI has also avoided the difficulty and expense of replacing its nearly full landfill which has been re-sown in new forest.

11. On the other hand projects that have not proceeded because of RMA issues relating to location are the Wineta wood processing plant at Allanton near Dunedin, and the Ernslaw One wood processing plant in the Coromandel. For many renewable energy projects such as these the obtaining of resource consents under the RMA has become simply too hard. It is partly this reason why new efficient plant are no longer being built and our valuable timber is being exported as logs, rather than having added value within NZ. With this National Policy Statement we have the opportunity to add value to New Zealand Inc If we fail to address these matters we will continue to fail to use the opportunities we have.

Policy 3 - Reversibility

12. BANZ has concerns around Policy 3 given that renewable energy projects are often site specific and while a building or other construction can always be removed, it is often costly (and sometimes of little value) to revert the land to its original state after the project ceases.

13. Secondly, many projects are intended as renewable and sustainable developments with plant and equipment being replaced with more modern equipment while retaining some still useful plant and buildings. A cogeneration plant can be considered as an example where the feedstock and fuel handling equipment may change over time but the boiler and generator may be able to be refurbished and used for another period.

14. There is a fundamental error in considering “reversibility” as a criterion for projects that are renewable and sustainable, and therefore of potentially infinite resource life. For as long as there is demand for energy then consented sites should continue be used for energy production.

Plan Changes

15. BANZ supports Policy 4 in principle but would prefer an earlier date. We believe the effective date could be 31 March 2010, as investigation lead time and technology adaptation to NZ conditions may take 2-3 years to be able to underpin implementation by local authorities.

16. It is recommended that the policy be reworded so as to apply to energy projects in general and not just electricity generation projects. The policy should also be modified to cover “existing and new technologies”

17. The local authorities are often in a very good position to provide leadership on local distributed energy supply initiatives regardless of whether the energy is to be used for electricity generation, heat production

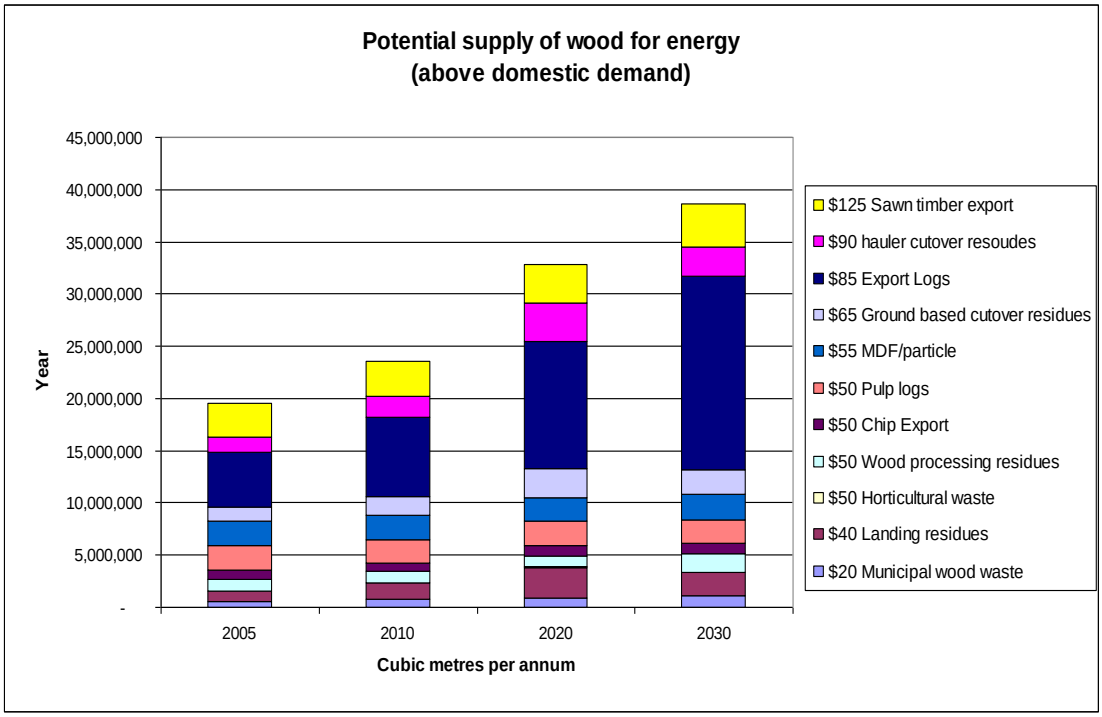
or liquid fuel production. It is very important however, that the policies of the local authorities do not introduce bias as to the uses of local energy resources. Skewing use of local energy resources towards electricity may impose costs on other energy users that lead to sub-optimal energy utilisation.

18. Distributed energy projects can provide a significant benefit to the local supply of electricity in that they reduce the demand for electricity through energy switching, or they can free up gas and hydro energy for more valuable use.

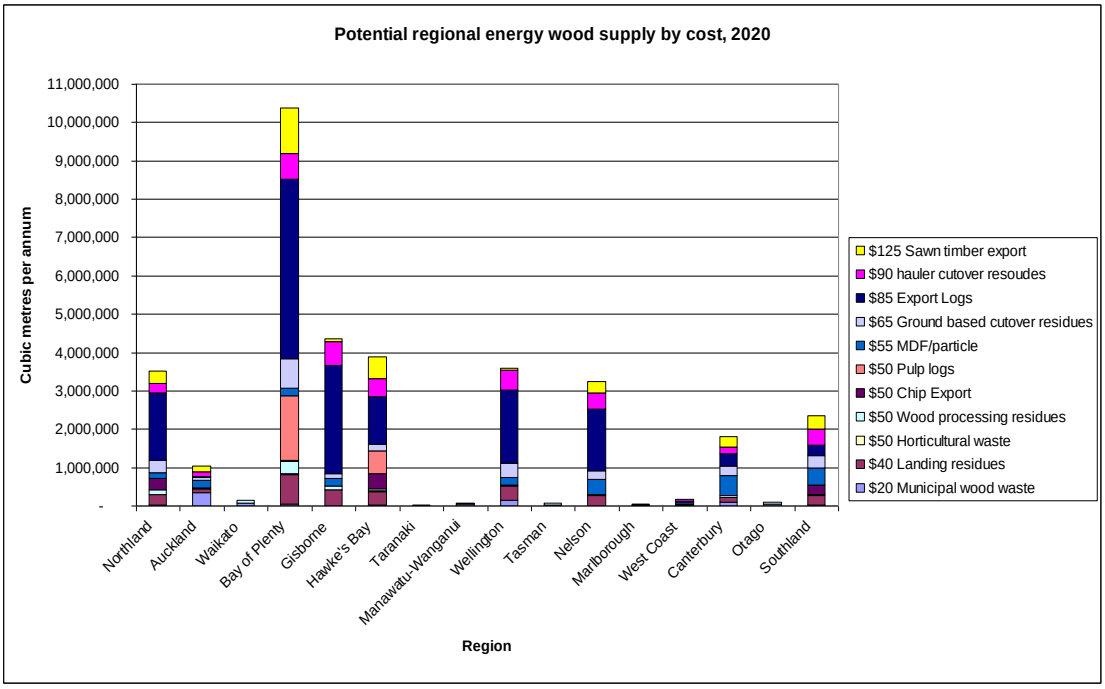
    - An example of energy switching is where a dehumidifier kiln using electricity is replaced with a wood-fuelled steam kiln.
    - An example of how natural gas can be freed up for other more valuable uses such as electricity generation is where a gas-fired heat plant is replaced with a wood-fuelled heat plant.
    - An example for biogas power projects would be clusters of dairy farms, beef feedlots or large piggeries that feed directly into distributed renewable energy schemes including district heating or community facilities (swimming pools etc.).

Annex 1:

1. Potentially available biomass from existing plantation resources show that New Zealand has between 12 and 31 million tonnes (86PJ and 223PJ) per annum of woody biomass above its needs for domestically consumed wood products.
2. A summary of potential national wood for energy supply, by year, type and approximate costs, including residual materials is presented below.



3. The Central North Island region has large volumes of wood residues and logs available, enough to consider the establishment of a large scale wood to liquid biofuels plant.
4. The 9.5 to 14.8 million m3 of wood available in 2010 (depending on price threshold) equates to 12% to 23% of national liquid fuel demand, 33% to 52% of national heat demand and 10% to 19% of primary energy.
5. The 50% increase in wood supply available in the next 5 - 10 years will largely have to be exported (MAF, 2009), much of it as logs, as domestic demand cannot absorb this volume of wood products and processing plant capacity may not be available to convert the logs into manufactured products.



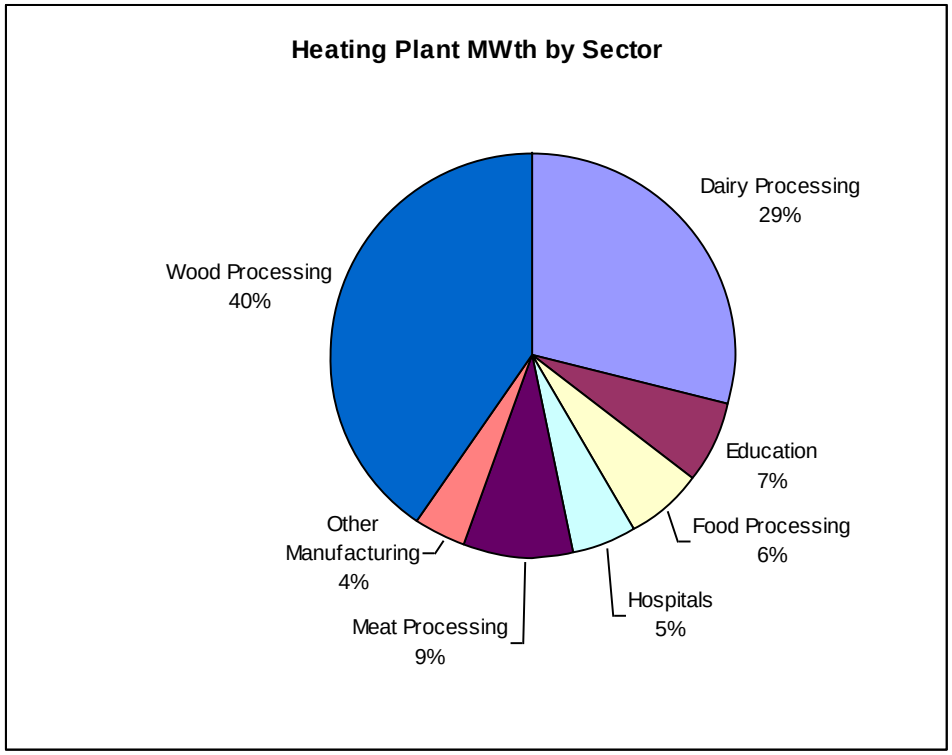
6. Given the level of log export volume that is likely to occur to absorb the potential log harvest that the domestic wood processing industry cannot take, and the uncertainty around various factors affecting log exports;

    - demand and log prices
    - availability of ships and shipping costs
    - currency exchange rates and its effect of profit margins
    - ability to obtain resource consents;

    the option of developing a domestic industry to take some or all of this material makes sense, especially if it can be used to displace imports of oil for liquid fuel production, as this will have positive effects on the countries terms of trade.

Annex 2: Heat Plant Database

1. For the year ending December 2006 the industrial and commercial/institutional sectors consumed around 112 PJ of heat or 22% of the country's consumer energy use. There is estimated to be 44 PJ of bioenergy produced heat each year and the remainder from other sources2.
2. Nearly 4900 MW thermal of heating plant is included in the database. Just over one third of this is plant smaller than 10 MWth. The wood processing sector with 40% of the total installed MWth capacity has the largest amount of heating plant followed by the dairy processing sector with 29% of the total. Gas is the predominant fuel followed by wood residues and. coal.
3. Installed Heating Plant



Estimates of annual fuel consumption and heat output based on responses given in the survey are shown in Table 1 and Figures3 and 4.

[2] Ministry of Economic Development Energy Data File June 2007

Table 1 Sector Energy Use and Output

Sector	Fuel PJ Input	Heat PJ Output
Dairy Processing	22.4	17.6
Education	0.9	0.7
Food Processing	4.4	3.5
Hospitals	2.9	2.3
Meat Processing	6.8	5.2
Other Manufacturing	4.8	3.8
Wood Processing	54.1	39.1
Total	96.4	72.1

4. Wood processing has the largest energy use with this sector including large pulp and paper plants.

Heating Plant Energy Use by Sector