Submission by Azwood Energy to the Ministry of Business, Innovation and Employment and the Energy Efficiency and Conservation Authority regarding:

Process Heat in New Zealand: Opportunities and barriers to lowering emissions

Introduction

Azwood Energy is recognised as New Zealand's leading wood fuel supplier in terms of range of product and extent of business. Azwood Energy sets the industry standard for wood energy as the only supplier producing the entire range of specified wood fuels. Fully accredited and endorsed by the Bioenergy Association of NZ, Azwood Energy ships carbon neutral, sustainable products throughout New Zealand, Australia and South East Asia. Proudly New Zealand-owned and operated for almost 40 years, Azwood Energy is responsible for moving approximately 1,500,000 cubic meters of raw and processed product each year.

Azwood Energy applauds the efforts of the Ministry of Business, Innovation and Employment and the Energy Efficiency and Conservation Authority to reduce GHG emissions through encouraging the use of renewable fuels, such as woody biomass, for process heat, instead of fossil fuels.

Contributing just 1.3 percent of total process heat-related emissions, wood-derived fuels clearly produce the lowest emissions given the petajoules of energy provided, and Azwood Energy supports their increased promotion.

This submission will primarily focus on fuel-switching, specifically to woody biomass.

Opportunities and barriers to lowering emissions from process heat

Barrier A: The cost of emissions is not fully priced

The true cost of burning fossil fuels, including the damage to the environment, is not currently reflected in emissions pricing. An increase would incentivise transition to woody biomass fuel use and drive the urgent and significant emissions reductions that must be made. A reduction in industrial allocation of emissions would also be required to promote investment in new technology enabling use of renewables, such as woody biomass.

Barrier C: Access to capital

Government policy should incentivise transition to woody biomass fuel by introducing accelerated depreciation on capital expenditure for fuel transition and the availability of suspensory loans from a capital fund to encourage such investment.

Public sector organisations' Crown loans should be extended beyond current limits to reflect lifecycle costs and reward public benefits of switching to biomass fuel.

Barrier H: Lack of information or aversion to new technologies

What is undermined in the discussion document is the fact that woody biomass fuel provision is a financially-viable, mature, proven technology, currently in use. The processes now in successful operation are replicable country-wide to provide scalable supply. Wood industry commentators agree that biomass has a long-term, secure, mapped supply strategy.

Government should promote and fund education into woody biomass technologies, providing best-practice information through case studies, pilots and demonstration sites which utilise woody biomass or co-fire with it. Dissemination of information regarding wood fuel supply availability would also be required. These measures would dissuade energy consultants from promoting only fossil fuel options as "known and proven systems", which occurs all too often currently.

Lists of consultants known to truly promote woody biomass fuel systems should be readily available through, and endorsed by, EECA. Unfortunately, the status quo regularly has energy consultants, in touting for business, advocating that they can offer the breadth of fuel systems' design, including woody biomass systems, when in practice, these consultants promote, design and deliver what they know best: fossil fuel systems.

Barrier L: The economics of biomass fuels is situationally dependent and complicated, and Barrier M: Biomass supply chains are undeveloped and face development difficulties

Security of fuel supply is noted as a concern for large biomass users, however Azwood Energy concurs with the Bioenergy Association figures which indicate,

"there is potentially enough biomass available from plantation forestry to replace 60% of coal used in existing heat plant over the next 30 years. The remaining 40% can come from new plantation forests (established as part of the 1 billion trees initiative; farm forestry)." [1]

It also notes,

"There are also enough suppliers with commercial and technical capability to expand supply if demand for biomass fuel increases consistently and in an orderly manner. "

The introduction of Government initiatives incentivising added-value processing of wood, as opposed to exporting raw logs, would further increase the raw materials available for utilisation as woody biomass, as well as improving local economies, through increased export returns and employment creation.

Azwood Energy is proud that it has secured large-scale, long-term fuel supply agreements with multiple partners, including forest owners, contractors and users. Our burgeoning enterprise is proof that these aspects of woody biomass supply are eminently achievable.

To promote surety of supply, capital grants should be provided to roll-out schemes, such as Venture Southland's Wood Energy South, nation-wide. This would provide sought-after information on local biomass supply, future availability and develop transparent and reliable supply chains, including regional

[1] https://www.bioenergy.org.nz/documents/resource/Information-Sheets/IS48-GHG-reduction-using-wood-energy.pdf

hubs. Increased demand, promoted by Government policy measures, as outlined herein, can only expand the market, through increasing economies of scale.

Barrier N: Air emissions regulations

Local authorities should ensure regulations relating to air quality are not an impediment to biomass fuel use. It should be noted that, currently, many boilers burning fossil fuels exceed local government air quality standards, whereas most new, modern wood-fuelled boilers produce very low particulate emissions, well within set parameters.

General Comments

Promotion of biomass's public benefits

The environmental clean-up of forestry skid sites, (diminishing fuel for forest fires, protecting waterways, preventing erosion and consequent destructive storm events), that is corollary to woody biomass fuel production, should be valued as an intrinsic benefit, providing greater impetus to companies' transition to this renewable.

Other general public good arising from the use of biomass fuel, such as economic improvement, energy security and resilience and lifecycle benefits, should be promoted to drive the transition from fossil fuels to biomass, in companies who value sustainability and social benefit as a 'point of difference' marketing tool.

Looking to their long-term future, companies are now seeking to promote their corporate image, reputation and brand, using triple bottom line accounting, which includes social and environmental performance. The adoption of sustainable environmental practices is an essential element in today's corporate best practice and increasingly an expectation in consumers' minds. Other external factors influencing businesses to act on climate change include a growing demand from institutional investors and shareholders.

Government initiatives that publically endorse its wider positive outcomes could enhance uptake of biomass fuel for process heat.

No new fossil-fuelled plant

The latest report by the Intergovernmental Panel on Climate Change, (IPCC), has called for a reduction in global net human-caused emissions of carbon dioxide to 'net zero' by 2050. Studies indicate that if we are to have any chance of keeping global average temperature increases below our 2°C target, we must leave the majority, (up to 80 %), of our fossil fuels in the ground.

Government should make legislative and regulatory changes to ensure that no new fossil-fuelled heat plant is commissioned and that as existing heat plant reaches the end of its economic life, it is replaced by heat plant that is not fuelled by fossil fuels, but is powered from renewable energy sources, such as biomass.

Only through implementing such proactive measures will the “rapid, far-reaching and unprecedented change” called for by the IPCC occur.

Local and central government must lead

Leadership from Government and local authorities is required to convert to biomass fuel supply in heat plants, only 7% of which currently utilise it. Procurement rules should prevent fossil fuel plant investment, going forward. Hospitals, schools and other such organisations should set the trend for low-emission change, through full transition or incremental co-firing. This uptake will, in turn, develop and expand the local market providing biomass, increasing supply, and confidence in that supply, for larger private users. These transitions will provide working exemplars to induce wider industry players.

Trees to burn

The One Billion Trees Project should promote the planting of crop trees for utilisation as biomass fuel, not just native varieties designed for carbon sequestration and unable to be applied to woody biomass production or carbon-capturing building purposes.

Biomass over electricity

EECA’s own 2016 Energy End Use Database figures show that in comparing fuel types’ energy consumption and consequent GHG emissions for process heat, it is patently clear that wood energy produces the lowest emissions given the petajoules of energy provided, (generating 23% of energy for only 1% of emissions). Electricity, ostensibly a clean, green fuel source produces only 18% of energy used in process heat but is responsible for 13% of overall emissions.

Although New Zealand’s electricity supply is around 80% renewable, resorting to the use of dirty fossil fuels to generate the remainder is a failure of our climate change aspirations. Late last year, unprecedented electricity supply issues, saw spot prices for electricity spiking, reaching up to three times the usual average. Genesis Energy, New Zealand's largest electricity retailer, was forced to use imported coal to generate electricity.

This volatility in current electricity supply and pricing, and predicted long-term supply shortfalls, can only increase the attraction of opting to fuel industrial processes with low-emission, carbon neutral biomass. Increases to the carbon price under a reformed ETS, furthermore, will greatly enhance biomass’s price position and make it even more attractive as a fuel option.

The effect of increased uptake of biomass fuel by the range of process heat users will curtail demand on the grid, stabilising supply and prices for the average Kiwi.

Given these factors, Azwood Energy finds it dismaying that promotion of biomass fuel use for process heat has not been more robustly promoted, to date, by EECA and MBIE. It is inequitable that the default setting is to promote electrification of processes, this paper itself evidencing this approach. The paper’s focus on large heat plant users, which is a small proportion of the total, and its emphasis on issues to overcome before biomass uptake can increase exemplifies a biased attitude.