Bioenergy and net-zero emissions – what next?

Invitation only workshop hosted by the Bioenergy Association Board

25 October 2018,
Crowe Horwath Meeting room, Level 1, Crowe Horwath House, 57 Willis Street, Wellington

Objective

To outline the opportunities that through the conversion of wood and organic waste into energy will contribute to reducing greenhouse gas emissions and enhance the circular economy, and identify the actions which will assist achieve 2050 net-zero emission targets.

Attendee contact details

Bioenergy Association

Board members

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Interest Group Conveners

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Staff

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Background

In 2016 Bioenergy Association set out to show that "Yes we can!"- achieve significant greenhouse gas emission reductions to meet the Paris targets. Since then we have quantified what level of emissions reduction is achievable from implementation of bioenergy solutions, and what will be necessary to speed up those reductions.

The adoption of the National Energy Efficiency and Conservation Strategy (NZEECS); the review of the Waste Strategy; the implementation of a programme to plant 1 million trees; the possible inclusion of agriculture into the ETS; concern about discharges to air and waterways; the introduction of a zero net carbon Bill; the establishment of the Climate Commission; and the publication of the report by the Productivity Commission on the pathways to achievement of a low-emissions economy, each provide strong drivers for utilisation of bioenergy solutions to reduce greenhouse gas emissions.

To achieve the maximum level of greenhouse gas emissions will require business and Government, central and local, to work closely together on priority initiatives. The bioenergy value chain has a number of participants and coordination and collaboration will be essential in order to overcome market barriers.

The invitation only workshop is to bring the senior bioenergy sector leaders together with relevant government officials to share under Chatham House rules critical thinking that will assist government officials developing policy to take to Ministers, and assists the sector leaders to develop a sector plan aimed at achieving the identified targets by 2050. The event will also assist the Association develop its business plan for growing the sector to meet the 2050 targets.

What can be achieved

Currently 11% of consumer energy is supplied from biomass. Including only process heat and use of waste this could increase to 15% by 2050 and reduce net greenhouse gas emissions by 3-4%.[1] , but with biofuels use by heavy transport this could increase to 26% energy with 13% reduced greenhouse gas emissions.

Figure 1: Greenhouse gas emission reduction below 2017 levels (kt CO_2-e pa)

	Reduction of use of fossil fuels in process heat[2] (kt CO2-e pa)			Methane reduction from waste to energy[2] [3](kt CO2-e pa)			Emissions reduction from use of biofuels in transport (kt CO2-e pa)		
Year	BAU	Transition[3]	Transformation[4]	BAU	Transition[3]	Transformation[4]	BAU	Transition[3]	Transformation[4]
2030	200	400	700	0	180	320	200	200	1500
2040	500	1000	1500	+20	210	410	400	400	3500
2050	700	1300	1800	+40	320	515	800	800	5000

Figure 2: Energy increase above 2017 levels[7] (PJ)

	Reduction of use of fossil fuels in process heat[1, 5] (PJ)			Methane reduction from waste to energy[2] (PJ)			Emissions reduction from use of biofuels in transport (PJ)		
Year	BAU	Transition[3]	Transformation[4]	BAU	Transition[3]	Transformation[4]	BAU	Transition[3]	Transformation[4]
2030	2	4	8	0	1.1	1.8	3	3	20
2040	5	11	17	0.05	1.5	2.5	6	6	48
2050	7	15	20	0.1	1.8	3.3	12	12	68

[1] https://www.bioenergy.org.nz/resource/is44-GHG-emissions-from-bioenergy-by-2050
[2] https://www.bioenergy.org.nz/resource/is32-ghg-reduction-using-biomass-energy-for-heat
[3] https://www.bioenergy.org.nz/resource/is31-ghg-reduction-using-biogas-technologies