



Brian Cox Executive Officer, Bioenergy Association of New Zealand

Overview

- The bioenergy and biofuels sector has strong foundations
 - Solid biofuels
 - Gaseous biofuels
 - Not liquid biofuels
- Bioenergy has made significant gains over the last decade
 - Is now a main-stream source of energy for New Zealand
- Has entered a new era
 - Many new entrants coming into the market
- Around 9% of NZ energy comes from biomass and organic matter
 - Theoretical potential of up to 27%

Drivers

- The need for energy supply security
- Assist food suppliers to meet international buyers' sustainability requirements
- Reduce food processing costs
- Increase well-being to communities
- Greenhouse gas emissions reduction
- Transitioning to a circular bioeconomy
- Extracting value from waste

Energy Supply Security

- Energy supply security has to come from all energy sources
 - Right energy source for the right application
 - Broaden drop-in energy fuel options
 - Biofuels for process heat allow electricity to be used in higher value operations
- Strengthening gas supply
 - Blending biomethane
 - Replace essential fossil gases with biogas.
- Increase supply of electricity from wind and solar
 - Supply of biomethane to fuel gas turbine generators to smooth wind and solar electricity fluctuations.
- Dry year electricity firming
 - Refuel Huntly Power Station on biomass to provide firming capacity
 - Avoids need for LNG
- Biomass availability increasing as demand requires.
 - Diversion of low value export logs
 - More trees can be planted and requires no capital expenditure and improves land use.

Sustainable food production

- Assist food suppliers to meet international buyers' sustainability requirements.
- Assist food processors have the most appropriate energy supply for heat generation
 - hedging against higher energy costs in the future.
 - Bioenergy provides local control over fuel costs
- Reduce food processing costs
 - Wood energy cost has remained at the same level for the last 14 years
 - Biofuels are generally cheaper than electricity (LCA)
- Use of agriculture and horticulture residues
 - Improve soil fertility if break crops
 - Optimises farm land use
 - Improves farm viability from multi products

Increase well-being to communities

- Provide another income stream for farmers.
- Improve agricultural land by
 - integrating trees into farming landscapes,
 - Getting value from the 6-9% of a farm which is not highly productive
 - using biofertiliser,
 - while reducing erosion, sedimentation,
 - Reducing nutrient losses.
- Increases rural employment
- Strengthen rural business and thus communities

Greenhouse gas emissions reduction

- Avoid the use of fossil fuels
 - Drop-in biofuels for transport avoids unnecessary capital expenditure
 - Drop-in wood pellets replacing coal in some boilers
 - Use of residues allows full recovery of biomass from a tree which is then replaced with a replacement
- Reduces emissions from waste biomass and organics
- Assist the Government avoid the need to purchase \$24billion of international emissions reduction credits.

Extracting value from waste

- Reduces waste which has grown to be a big costly problem for communities
- Recycling organics and biomass residues can produce energy & biofertiliser
 - Produces value from waste
 - Reduces need for landfills
 - Reduces demand for non-renewable resources
- Will be a feedstock for future bio-based materials

Transitioning to a circular bioeconomy

- Communities are recognizing that moving from linear to circular economies has benefits
- Recycling of organic residues into biogas and biofertilizer is often a critical part of a circular economy.
- Producing bio-based products will provide replacement for goods which are currently manufactured from fossil materials.
 - Bioplastics to replace plastic produced from petroleum