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PRESS RELEASE

Logs to Riches:

How New Zealand is building a global position in bio-chemicals and bio fuels while unlocking the true potential of forestry

This year, New Zealanders learned a new swear word – slash. The valueless debris left behind when pine forests are felled, it was swept off the land by record rainfall and destroyed homes, bridges, beaches and productive land.

To add insult to injury, it's not as if the harvested logs have been earning a decent return. Most are shipped offshore, with the bulk going to China with little value added. Even these offshore markets are now at risk of imploding as log prices sink.

This is the latest iteration of a multi-generational failure. New Zealand is good at growing pine trees but poor at turning the wood into something the world wants.

But the tide may be turning. The key word is 'decarbonisation.'

Time for pine to shine.

The worldwide drive to end dependence on fossil fuels has focused attention on processes that turn logs and bio-waste (i.e. slash) into biofuels, bio-chemicals and bio-plastics.

These processes are planned to be commercialised on a global scale by NZ Bio Forestry, a Maori-led company with Singapore and Taiwan-based stakeholders. Their technology has been validated at scale, and the first NZ Bio Forestry plant is planned to be opened in Aotearoa-New Zealand in 2025. There is the potential for many more sites across the country.



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Customers are starting to line up. The last 12 months have seen a Memorandum of Understanding (MoU) signed with Japan's Refine Holdings to develop a suite of biochemicals from Pinus Radiata for the automotive, technology, EV battery and solvent markets.

NZ Bio Forestry has also signed an MoU with Genesis Energy to investigate the technical and economic viability of bio-fuel for Huntly Power Station. The partners are looking at producing a high energy source bio-pellet to replace coal and reduce carbon emissions by up to 90%, as well as generating bio-energy from refined chemicals.

Even the oil-rich Middle East is getting in on the act. NZ Bio Forestry is currently in talks with an Abu Dhabi-based major investor in sustainability and renewable energy.

All the pieces are in place for Aotearoa-New Zealand to become a global leader in renewables.

Unlocking value in Aotearoa.

At the other end of the supply chain, NZ Bio Forestry has MoUs with local forest owners, including Māori entities such as Tupu Angitu Ltd, the commercial arm of the Lake Taupō Forest Trust.

The goal here is to increase the value of the forestry estate, utilise the whole tree to generate better returns, create new career paths, and boost employment. They plan to achieve this on a zero-carbon footprint, with an approach rooted in Māori culture.

"Forests are so much more than just structure and fibre," says NZ Bio Forestry CEO Wayne Mulligan (Taranaki, Maniapoto).

"We view forestry through its living essence, its biologics or mauri. We term this the Mauri-Molecular Platform™. We understand forests as a huge resource of standing biochemistry that can provide alternatives to fossil fuels like coal and petroleum," says Wayne.



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By utilising slash as well as logs, NZ Bio Forestry can generate much higher returns from a plantation. Instead of exporting raw logs, New Zealand can manufacture high volumes of high-value products that are in global demand – from bio-fuels and polymer feedstocks to cosmetics and detergents. The key here is working with new customers in energy, chemicals and materials who want to replace fossil fuels.

Wayne Mulligan says this can multiply the return from plantation forestry by a factor of five, and up to a factor of 80. So instead of a \$125 return from a cubic metre of wood, Aotearoa-New Zealand can look forward to tens of thousands of dollars in added value from the same input.

"We can meet the demand for sustainable alternatives to fossil fuels, drive down emissions, produce bio-fuels and bio-chemicals from our forests, and do it without taking away agricultural land," says Wayne Mulligan. "Unlike other models that divert food crops to bio-fuel production, our model uses the wood and bio-waste from land that has no other economic use."

Tūpuna Pono – Being a Good Ancestor.

Wayne Mulligan believes we can learn by involving our youth in solutions. The Māori concept, Tūpuna Pono – Being a Good Ancestor is central to NZ Bio Forestry's thinking. It's about leaving a healthy and positive legacy for the coming generations.

The next decade must see accelerated decarbonisation. In practical terms, that means vehicles powered by renewable fuel, fossil-based plastics replaced, power stations, schools, hospitals and manufacturing fuelled by bio-pellets and bio-fuels.

It's about New Zealand beaches free from slash – and New Zealand bank accounts richer by billions of dollars.



FURTHER INFORMATION

The science behind NZ Bio Forestry (1.20 min. video). https://www.youtube.com/watch?v=T6zekuLBdrk&t=96s

https://www.nzbioforestry.co.nz/post/more-momentum-nz-bio-forestry-and-japanese-refine-holdings-sign-mou

https://www.nzbioforestry.co.nz/post/genesis-nz-bio-forestry-to-explore-potential-of-biofuels

https://www.ltft.co.nz/latest-news/working-together-to-increase-forestry-value-and-create-new-jobs/

Tūpuna Pono <u>Te Tauihu: Intergenerational Strategy</u>

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