



Replacing Petroleum Based Plastics in Food Packaging

NZ Bio Forestry Join Forces with PanCycle and Inspira Applied Bio Solutions

In a move set to disrupt the global packaging industry, New Zealand's **NZ Bio Forestry** and Taiwan-based [PanCycle](#) and **Inspira Applied Bio Solutions** have signed a strategic Agreement to develop a network of biorefineries producing sustainable, biodegradable biochemicals from *New Zealand Pinus radiata*. These next-generation materials will replace petroleum-based plastics in food and beverage packaging, targeting global markets hungry for sustainable alternatives.

The partnership's initial focus is on producing biodegradable and recyclable biochemicals for beverage cups, food packaging, and utensils. It will start with the **Australasian market**, where demand for beverage cups alone exceeds **4 billion units annually**. The first New Zealand-based biorefinery will produce **25,000 tonnes** of a key biochemical, with plans for up to **five biorefineries** capable of delivering more than **100,000 tonnes per year**.

Wayne Mulligan, CEO and Founder of [NZ Bio Forestry](#), "This agreement builds on more than five years working with Inspira Applied Bio Solutions on a series of biochemicals and bioenergy applications and two years of deep technical collaboration with PanCycle", says **Wayne Mulligan**, "Together, we've developed formulations, aligned leadership, and worked on product specifications and manufacturing requirements. NZ Bio Forestry alongside our Taiwanese partners, we were honoured to receive a **Global Top 100 Award for carbon-negative bioplastics** in 2023. Since then, we've been working with PanCycle and international investors to accelerate deployment. We see **New Zealand as a good platform to commence biorefining.**"

Kai Hsuan Lin, CEO [Inspira Applied Bio Solutions](#) "This agreement builds on the existing partnership with NZ Bio Forestry and extends far beyond packaging and beverage cups. "PanCycle is committed to **removing petroleum-based materials** from its entire packaging and utensil range. This opens a market far larger than cups alone. Inspira Applied Bio Solutions and NZ Bio Forestry will be supporting PanCycle's manufacturing expansion initially into Australia and New Zealand."

Jepson Kuo, President and CEO of PanCycle, emphasizes that PanCycle's **X-Cup is the spearhead** of this shift: "Our mission is to lead the world in sustainable, forest-positive solutions. Partnering with NZ Bio Forestry and Inspira allows us to integrate next-generation biochemicals into X-Cup — the **first commercially scalable cup that is recyclable, microwave-safe, and compliant with global regulations**. This represents a major step toward a truly circular bioeconomy."

Kuo notes that New Zealand's forestry biomass provides a significant strategic advantage:

"New Zealand offers an abundant, renewable and sustainably managed forestry feedstock for producing high-value biochemicals such as PLA, PHA, and lignin-based materials. The flagship biorefinery in **New Zealand will be a model for further expansion** across the country."

These companies proudly produce bioplastics without diverting vital food crops like corn or cassava — **protecting global food security and ensuring harvests feed people, not factories**. At the same time, they are tackling one of the planet's most urgent challenges: **removing plastics and microplastics from our environment, our oceans, and ultimately, from the food we eat**.

The collaboration between the companies represents a **milestone in the global shift from fossil-based plastics to scalable, biodegradable alternatives**, and underscores our collective commitment to a circular bioeconomy, innovation, decarbonisation, and economic sustainable growth.

Ends.

Background

PanCycle is a leading Taiwanese company with more than 25 years of experience in the packaging industry, supplying innovative solutions across North and East Asia. Building on this strong foundation, PanCycle is expanding its product range into Australia, New Zealand, and the United States. At the forefront of its offering are the **X-Cup** and **Binto** models — simple yet revolutionary designs that integrate air cavity technology with either virgin or recycled (non-virgin) paper. The dual-layer constructions are compliant with **U.S. Food and Drug Administration (FDA)** standards, ensuring both safety and performance for food and beverage use. These packaging innovations are designed to serve high-volume global markets, with estimated annual demand exceeding **150 billion units in North America, 300 billion in Asia, and 10 billion across Australia and New Zealand**



NZ Bio Forestry specialises in transforming forestry, including *Pinus radiata* into sustainable, **non-fossil, petroleum-free** alternatives. The company is unlocking new opportunities for the forestry and wood processing sectors by providing advanced technologies that connect these industries to higher-value markets, both nationally and globally. The company's global strategy is to **collaborate** with partners who recognise that **decarbonisation is not just an environmental necessity**, but a **powerful driver of commercial growth and community prosperity**.

Inspira Applied Bio Solutions is a biotechnical and bioengineering company. The company has over 30-year background in international markets across wood engineering, biorefining and biotechnology. Specialising in **converting wood and plant-based material into a suite of biochemicals, biomaterials and bioenergy** and building intellectual capital and IP.

For more information contact:

Wayne Mulligan, CEO NZ Bio Forestry
Email: wayne@nzbioforestry.co.nz

Mob: +64 274725838