



saveBOARD

Low carbon building materials from upcycled packaging. An interview by Carole Goldsmith.

As a true circular economy solution for composite packaging waste, saveBOARD is recycling waste such as: Tetra Pak food and beverage cartons, ingredients' bags, coffee cups and soft plastics, by processing these into low carbon building materials.

The sustainable building material's manufacturer operates plants in both Western Sydney and in Hamilton on NZ's North Island. Both sites are identical and have seven employees each. Additional manufacturing sites in both QLD and VIC are planned, as saveBOARD has secured funding from both the VIC and QLD governments, towards the cost of these two new plants.

Co-founder and CEO saveBOARD, Paul Charteris, says from his Hamilton NZ plant, that he is very proud of his company, which he started five years ago with a US co-founder silent partner. "Last year saveBOARD and Tetra Pak, secured the Australian Packaging Covenant Organisation's Improved Recycling Systems Award, highlighting our efforts in recycling and sustainability," he says.

"The key is to ensure that there is enough demand for our products to underpin our investment before proceeding with each plant. If we can make them stack up financially then, we need to raise \$5m for the Victorian plant and \$4.3m for the Gold Coast plant," Charteris adds.

The latest Australian waste figures reveal that in 2020/21, Australia generated an estimated 75.8 million tonnes (Mt) of waste, equivalent to 2.95 tonnes per person.

Minister for Environment and Water, Tanya Plibersek released the biennial 2022 National Waste Report in December 2022. The report also found that Australians generated almost 3% more waste compared to 2018/19 and Australia's recycling rate remains stagnant at 60%.

The largest waste categories were building and demolition materials (25.1Mt), organics (14.4Mt), ash (12.0Mt), and hazardous waste (7.4Mt). Recycling and recovery rates were highest for metals (87%), building materials (81%), paper and cardboard (62%), organics (58%) and glass (59%).

"Waste is increasing, but the proportion of waste we're recycling is not," said Minister Plibersek. "Every bit of rubbish that ends up in landfill is a missed opportunity to contribute to a circular economy in which nothing is wasted," said Minister Plibersek.

How did saveBOARD get started?

Explaining how he came up with the idea to start saveBOARD, Charteris says, "I was working for a large engineering company as its general manager and we were asked by a large milk producing company to look at options on what to do with the company's food and beverage carton's factory waste. We identified a US business, Continuous Materials, which actually does what we are doing today at saveBOARD, processing packaging waste into building materials."

"Although the milk company was initially interested in this initiative, producing building materials was not its core business, so they decided not to get involved. At the time, I thought that it was a great business idea and I wanted to set it up in NZ and Australia. So, I set out on my own path to actually secure enough funding from investors and due diligence to make it a reality."

Charteris brought on the US company's founder as a silent partner. He has several packaging waste recovery plants across the US, so he knows the business well. "They are mainly making a roofing cover board there, as it's high volume and sells well, but they don't make all the products that we do.

saveBOARD manufactures six core building products: exposed and paper faced internal lining, ceiling tiles, multi-use panel, roofing substrate and rigid air barrier. They all meet the Australian and NZ building codes.

"For, every one kilogram of packaging waste that we collect or is dropped off at our sites, we have to sell one kilogram of finished building product to be a circular economy solution. We use compression and heat to turn the waste into wall or ceiling board and the other products. Scrunchable soft plastics with a high percentage of Low-Density Polyethylene are melted and used as a glue to bind the building products in the production process.

When discussing the building materials manufacturing process, Charteris uses an analogy: "It's like making a cake! We have a recipe, so we weigh the ingredients, the right amount of soft plastics, fibre and beverage cartons. That all gets mixed together in a large commercial mixer until it's an even consistency.

"Then it's mechanically laid out to the right level of thickness and processed in two large hot presses (our ovens). Heat and pressure are used and the soft plastics are intermingled with the fibre to make a composite structure. We cool it off quickly, cut it to length and then palletise it to a stack of around 30 boards together, ready



for distribution to our clients. The manufacturing technology that we use is licensed to the Asia Pacific region." One of its larger clients, KFC Australia, has used saveBOARD's recycled wallboards in 25 of its stores to date, starting with its South Penrith, NSW store last June. KFC made a commitment to support a circular economy, says Charteris. "We are converting KFC's packaging waste, like soft plastics and pellet ribs into building materials to use in its stores, mainly in the public spaces like the restaurant areas. It looks really cool and it's great exposure for us."

"We like to think that we can show that a circular economy is a clear, sustainable business model. We take packaging waste which generally only has a single use and then we make a product that people want to buy, as it has an on-going use. Also, we don't charge our clients a gate fee for taking back a part of our product that they are not using. Just to explain that, if you buy one of our wallboards and let's say you cut some holes out for windows. You might have 5% of the product as waste, so we will take that back and re-manufacture it again and make new board.

"Around 50% of our clients return our product off-cuts for recycling and I would like to think that will increase with time. It's a bit like the home curbside recycling, it would be good if everyone did it, but not everyone does." Charteris says that there are challenges in the business. "To complete the circle, we need someone to buy the products that we make," he says. "We are trying to show that it's a sustainable business model, so recycling the waste into building materials and selling our products quickly is not only smart, but makes good financial sense too."

One of saveBOARD's waste streams is derived from the QLD, WA, NSW and SA Container Deposit Schemes (CDS). These schemes

provide consumers with a small reward for eligible recyclable material they return. The CDS have been a great success with 3.8 billion containers supplied into NSW alone in the past 12 months (Jan 23 – December 2023.) reports Exchange for Change. It reveals that \$4.7m has also been returned to NSW charities and community groups since the scheme commenced in 2017, via donations and fees for hosting points (Dec 17 to June 2023.)

SaveBOARD also collects packaging waste from many large manufacturers, retail stores and from large construction companies. Charteris advises that they are also working through a small proportion of the REDcycle stockpile of soft plastics, which was collected by Coles and Woolworths until that ceased in Australia, late 2022. A similar soft plastics' collection is still operating successfully in NZ supermarkets.

Charteris has big plans for saveBOARD's on-going success. "As well as the planned QLD and VIC plants, our aspirational goal is to establish other plants in the Asia-Pacific Region. There are hundreds of different types of circular economy businesses handling different waste streams, so you also want to be able to make a difference in Australia and the world. Probably the greatest challenges are that you need companies and people to actually buy circular products and services, because if you don't, then you won't have the demand or the financial returns to expand.

"Ultimately, we need Federal, State & Territory and Local Government to help promote and give preference to these types of sustainable and circular economy products and services as that creates the demand, innovation and investment within the industry." **AMT**

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