

# EARTH SONG

Australian company Landtopia are turning mountains into molehills with the world's first biodegradable non-woven polypropylene bag.

Words: Lizzy Keen

**I**magine a world where our purchasing habits gave back to the Earth, non-biodegradable plastic bags were a thing of the past and we no longer worried about shopping bags clogging our soil and oceans for thousands of years.

This utopia could be closer than you think, thanks to the creators of Landtopia bags, the world's first biodegradable, non-woven polypropylene (PP) shopping bags designed here in Australia.

Landtopia founder Tracey Milenko believes it's time for a change. "Think about how disposable nappies from the 1960s are still sitting in landfill today," she says.

Soft, foldable and light-weight, Landtopia bags look and feel like most reusable shopping bags, but they contain a special organic additive that, when discarded in a fertile (microbe-rich) landfill environment, encourages microbes to break the bag down.

Importantly, this additive has no impact on the strength or durability of the non-woven PP, making Landtopia bags ideal for carrying fruit and vegetables, textbooks, or goodies for a picnic.

Tracey said the concept is in response to the global plastic crisis. An estimated one trillion plastic bags are produced and discarded each year, four billion here in Australia.



What's more, according to an article on ABC Science Online, the average plastic bag, which may be used just once before being discarded, takes roughly 1,000 years to decompose.

Landtopia bags initiate a series of chemical and biological processes in landfill that actually enrich the soil and contribute to sustainable energy systems.

When it's buried beneath a layer of waste and soil, the Landtopia bag activates its organic additive and adopts a colony of microbes, which otherwise would be unable to break down the polymers (dense molecules) in the material.

In this environment, the microbes are able to consume the entire bag leaving behind few non-toxic by-products such as humus, (a nutrient-boosting compost), carbon dioxide and methane.

To establish the effectiveness of the organic additive, Tracy's team tested the bags independently in an Australian lab that simulated landfill conditions. Over 12 months, there was a 10.9 per cent breakdown of the bags.

"Now, compare that to regular plastic that is taking thousands of years to decompose," Tracy says.

"What's also great is that this organic additive is the bridge between bad plastics of today and the landfill energy systems of the future."

Since 2013, using pipes dug into landfill zones, scientists have been able to capture methane produced by rubbish, direct it to special power stations located on the dumpsite and convert the gas into renewable energy.

This innovative process saves methane from escaping into the atmosphere – a major contributor to climate change – and can partly replace fossil fuels as an energy source.

As landfill microbes break down Landtopia's nonwoven PP, they produce enough methane to contribute to the economic benefit of landfill energy sites.

With its low-cost, easy-to-use innovation, Landtopia has aligned itself with the United Nations Decade of

Sustainable Energy for All (2014-2024;) and is fast becoming a major player in global clean energy.

The timing has been perfect. Landtopia bags hit the market around the same time that the Australian government and organisations were looking closely at ways to reduce plastic bag use, such as fees on plastic bags handed out by big retailers.

While the WA parliament has blocked multiple proposals to ban plastic bags, Canberra, South Australia, Tasmania and the Northern Territory lead the way in banning single-use plastic bags, with the Queensland Government now also considering following suit in an attempt to reduce the state's rubbish figures, which are 40 per cent higher than the national average.

Single-use plastic bags are already banned in Hobart, Tasmania, and other suburbs on the mainland.

Landtopia bags, however, bypass the plastic bag embargo to provide an affordable and ecological solution to plastics pollution, while assisting renewable energy.

With major customers like Foxtel, Carlile Swimming, the NSW Department of Fair Trading, Brisbane's Morayfield Shopping Centre and the Outdoor Media Association, now offering their customers branded promotional bags with an environmental story, Landtopia pushing to have its name associated with sustainability.

"We're getting our foot in as many doors as possible so we can reach the general public all at once," Tracy says.

Tracey said the name of these game-changing bags was inspired by the King of Pop.

"Originally I wanted to call the company Earth Song, inspired by Michael Jackson's hit," Tracy says. "To truly understand what Landtopia's about, everyone should just listen to that song."

There are eleven types of Landtopia multi-use bags already available – from beach totes to wine bottle carriers – with more designs and other products in the pipeline.