

Breakthrough Sustainable Technology That Turns Waste Cardboard to Resource

SYDNEY, NEW SOUTH WALES, AUSTRALIA, September 8, 2020 /EINPresswire.com/ -- Drawing from over 20 years experience with developing sustainable technologies for recovery of values from saline waters and wastewaters, technologists at Pact Renewables Pty Ltd have developed a unique [zero waste technology that uses waste cardboard to produce degradable](#) feedstock materials. The feedstock is then used as a resource for manufacturing wide-ranging industrial products and consumer goods, such as degradable agricultural containers, materials for goods packaging, soil conditioning, construction and environmental protection.

The feedstock materials are comprised of various blends of defibered cardboard and degradable mineral-based composites, and are produced in a simple and scalable closed-loop system using conventional mineral and food processing equipment.

Central to this enabling technology is the beneficial use of massive volumes of waste cardboard and precursor minerals that are readily available at a low cost for commercial manufacture of industrial products and consumer goods, having properties and functionalities comparable to, or better than their plastic/polymer based counterparts. Equally important, the cardboard and mineral-based composites, both being degradable, enable the products at the end of their useful life to be placed in soil for safe natural degradation, thus [eliminating the need for landfilling or incineration](#). In essence, the technology eliminates the limitations with cardboard recycling at a substantially reduced life cycle cost.

Dr Aharon Arakel, the director and chief technologist of Pact Renewables, said, "it is common knowledge that options for safe and cost effective disposal of waste cardboard are currently very limited because of its short recycling loop, bulkiness and low cost. Recycling is therefore not a total solution for waste cardboard management and landfilling/incineration is costly and goes against the principles of sustainability and circular economy. These together with the recent imposition of export ban on waste paper and cardboard have further highlighted the overwhelming need for sustainable technology solutions. Waste cardboard is very different from plastic and glass wastes and therefore solutions need a complete rethink. Our Company is a pioneer in developing a number of waste-to-product technologies and ideally positioned to address the pressing need for a sustainable and cost-effective solution for large-scale beneficial use of waste cardboard as a resource, rather than being a significant liability for industries around the globe." He added, "For the first time, our technology can use waste CO2 gas, where available, as well as minerals recoverable from brine discharge of seawater desalination facilities

for further reduction in product lifecycle costs. Initial testing also indicates that packaging beads and aggregates produced in our technology can effectively replace the goods packaging materials made largely from plastics/polymers, and most importantly, our packaging materials can be placed in garden soil to provide conditioning effects after their use.”

He added, “Apart from the [use of waste cardboard as a cheap resource](#) and eliminating the need for landfilling/incineration of the products, another key differentiator of our waste cardboard solution is the capability of our zero waste technology to sustainably address multiple environmental challenges across a range of industries and regions.”

Dr Arakel went on to conclude, “The success of this project is a significant development for addressing the growing challenge of sustainable management of waste cardboard, and working on this exciting project has given us the opportunity to explore various application areas and ideas. We will soon seek partnership in the commercialisation of this technology.”

About Pact Renewables

Pact Renewables is a private technology company with a business focus on developing sustainable technologies and degradable composites with demonstrable impactful outcomes. The Company is at the forefront of waste-to-products technologies for value adding and waste minimisation. Based in Sydney, Australia, Pact Renewables is actively participating in eco-innovation as a pillar of sustainable development by leveraging its IP capital and technical expertise for pursuing technology commercialisation opportunities through partnership arrangements.

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