

Pact Renewables Announces its Sustainable Technology Platform for Reduction of Critical Waste Materials

Pact Renewables' technology platform addresses the disposal needs of those voluminous waste streams which currently have no alternative other than landfilling

SYDNEY, NEW SOUTH WALES, AUSTRALIA, January 11, 2022 /EINPresswire.com/ -- Pact Renewables is pleased to announce its breakthrough [technology platform](#) for the reduction or avoidance of landfilling of [hard-to-abate large volume waste streams](#), virtually with no sustainable solutions to reuse, recover, or recycle. These waste streams are collectively known as critical waste materials, including flyash (also known as Air Pollution Control residues) from municipal solid waste incineration processes, such as waste-to-energy (WtE) plants, clinker dust from cement manufacturing operations, and discarded single-use face masks. Being voluminous, contaminated and often toxic, they are increasingly choking existing landfills or requiring new purpose-built landfills in many jurisdictions. The unabated landfilling of single-use face masks has particularly become a global concern because of the potential substantial environmental and economic impacts, if we fail to find timely management solutions. As an indication, approximately three million masks were used globally per minute in 2020, the bulk of which ultimately ended up in landfills, and 11 million tonnes of hazardous fly ash from waste-to-energy plants was disposed of in monofils.

Dr Aharon Arakel, the director and chief technologist of Pact Renewables, said, "The two key challenges facing critical waste materials are firstly, the absence of efficient and environmentally acceptable treatment technologies, and secondly, a lack of identifiable markets for such proposed technology-based solutions to make possible the diversion of massive volumes of solid waste from landfills. We read about products from such wastes in recent research publications, however what is often forgotten is the fact that unless product markets are developed, adequately defined and secured, the technology, whether sustainable or not, will not take off at scale to address the massive challenge of the critical waste materials."

"As such, it has become evident that we need multiple sustainable technologies with demonstrable techno-economic capabilities and products' market demand to offer fit-for-the-purpose waste reduction solutions for diverse situations, whilst still being able to permanently divert these waste materials from landfills, if we are to achieve our ultimate net zero ambitions. Furthermore, considering the strong influence of ESG factors on driving investment decisions, future waste treatment technologies will progressively become less attractive for investment

unless manufacturers can show favourable product life cycle costs, whilst complying with regulatory mandates such as border carbon tariffs and extended producer responsibilities.

Dr Arakel added, "To address this complex challenge as an opportunity for our pure play waste technology company, we have since 2018 ventured into developing a comprehensive technology platform with the objective of offering the markets a sustainable technology platform for the reduction or avoidance of landfilling of a number of critical waste materials. We recently completed a rigorous systematic performance evaluation of these technologies in our platform, which extended across the full spectrum of process and target product evaluations, including product stability, market demand, and sustainability of production methods. I can now confirm the capability of our technology platform to address the challenge of managing hard-to-abate waste streams. This is achieved through the generation of one or more value added products from raw waste, for use as a feedstock for multiple downstream applications. By immobilising these wastes through encapsulation and then turning it into a value added resource with substantially reduced footprint for downstream beneficial uses, we are also reducing the risks associated with market demand and dynamics for the downstream products. In fact, our technology platform as a whole has potential to put WtE construction companies in a competitive position by providing their clients with a total solution. We also strongly believe that this approach also promotes product design rethinking – a process which is increasingly becoming an important component of circular economy."

"A key component of our technology platform is Climedec, an enabling technology for the immobilisation of toxic elements associated with solid, liquid, slurry, or gaseous waste types, and subsequent conversion of the waste into feedstock materials for downstream uses. Optionally, certain high value water-leachable elements can be selectively recovered in the form of specialty minerals and mineral composites before implementing the immobilisation steps. The immobilisation of toxic elements in the waste is achieved by a combination of adsorption, ion exchange, and mineral conversion processes and is completed by simple aggregation and/or granulation steps using our proprietary waste-specific media formulations. We have extensively drawn from our massive technical know-how, market intelligence, and the experience gained from interactions with our clients to complete our performance evaluations of the technology and target products with demonstrable large market potential. We are extremely pleased with the outcomes of our efforts, particularly that the technology platform can also provide fit-for-the-purpose solutions for alternate waste types, including those from the entire food chain, leachates from various landfills, mining and mineral processing residues and effluents, plastic and polymeric waste streams, and livestock bedding."

Dr Arakel went on to conclude, "With the completion of our technology development and evaluations, identification and validation of markets for targeted downstream products, and our progressive patent filings, we are now offering our technology platform to industry through [advisory services](#), technology licensing, contract R&D, and any other mutually acceptable arrangements."

About Pact Renewables

Pact Renewables is a private technology company and developer and owner of a portfolio of waste reduction and product recovery technologies with measurable impactful outcomes. The Company draws from the skills of highly qualified personnel, including scientists, engineers and ecologists, along with Dr. Aharon Arakel, the lead technology developer and a recognised world expert in the field product recovery from saline waste streams. In addition to holding a unique technology portfolio and unique expertise, the Company possesses specialised in-house material testing facilities and field demonstration capabilities to cater for the needs of industries seeking integrated services for addressing waste challenges, improving their value chain, and achieving their sustainability objectives.

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