

Pact Renewables' breakthrough technology for sustainable production of fly ash from ash ponds of coastal power plants

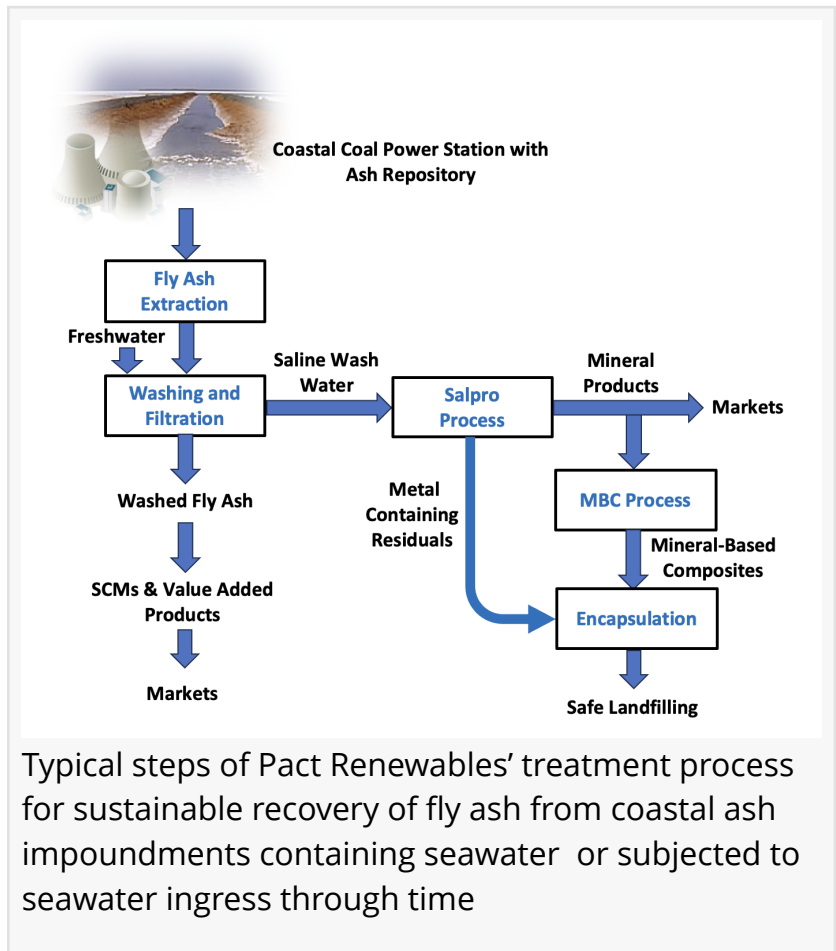
An enabling technology set to transform the landscape for recovery of fly ash at scale from coastal ash ponds while safely disposing generated saline effluents.

SYDNEY, NEW SOUTH WALES, AUSTRALIA, January 14, 2025 /EINPresswire.com/ -- Pact Renewables is pleased to announce its [breakthrough technology solution for addressing a key challenge](#) of sustainable recovery of fly ash from coastal ash storage ponds where ash is blended with seawater or subjected to seawater ingress.

It is widely known that washing of fly ash extracted from coastal impoundments with freshwater is the first necessary step for producing a low chlorinity ash product for encapsulated and unencapsulated beneficial uses.

Yet, the ash washing process generates substantial volumes of saline effluent that often contains elevated concentration of metals considered hazardous if discharged to environment.

Dr. Aharon Arakel, the director and chief technologist of Pact Renewables said, "Worldwide, there are many coastal ash ponds with megatons of fly ash stored in them that remain largely untouched, despite the existing and exponentially growing markets for fly ash. The challenge is neither related to the absence of technologies for extracting and efficiently washing of fly ash, nor the availability of proven technologies for treatment of saline effluent generated from ash washing processes. The challenge is, how to implement an integrated treatment process in a single delivery system that enables cost-effective recovery of commercial grade fly ash at scale,



whilst achieving a zero liquid discharge (ZLD) outcome through the treatment of fly ash wash water. Such a technology will also need to be flexible in terms of treatment system design and equipment configuration for site-specific application and comply with local and regional regulatory framework in various jurisdictions.

Dr. Arakel explained, "We have acquired substantial experience in treatment of saline effluents from coal production and coal power ash dams using our Salpro technology; it was first piloted at large scale and subsequently licensed, over 25 years ago, using saline effluents stored in the fly ash dam of a coastal coal power station in South Australia. Being aware of the presence of toxic metals in the wash water of fly ash, we have since 2015 undertaken a long journey of developing our mineral-based MBC Composites technology, followed by systematic testing and verification of its application for encapsulation of a variety of intractable and toxic residue streams for safe land filling. These R&D efforts have benefited immensely from our continuous engagement with [industries seeking our expertise](#) and access to our technology platform for beneficial use of various ash streams generated by coal washing, coal power production, waste-to-energy generation and cement production, all faced with the same challenge of safe disposal of generated saline effluent." Dr. Arakel continued, "With this background we have now successfully completed a program of rigorous evaluation of the performance of MBC Composites, an award-winning technology recognised at 2023 World Economic Forum, for encapsulation of a range of toxic waste residues, and follow-up integrated techno-economic assessments and life-cycle costing of a range of zero waste treatment systems, based on the application of our technology platform. These efforts recently culminated with finalising our assessments of the integrated treatment process, diagrammatically shown here, for sustainable recovery of fly ash at scale from coastal ash impoundments. We are now uniquely positioned to offer this technology and our expertise to industries seeking support with their efforts in recovery of fly ash stored in coastal ash ponds for transformation into commercial products."

Dr. Arakel went on to conclude that, "I take pride in announcing this significant technological breakthrough that to our knowledge is currently the only proven technology offering a zero liquid discharge solution for sustainable recovery of fly ash from seawater containing coastal ash ponds. We welcome expressions of interest from organisations looking for additional information on our technology-based solutions, wanting to discuss the options for process and products customisation for their site-specific needs and collaboration where our technology know-how, robust process flow sheets and product market knowledge can be applied to their advantage."

About Pact Renewables

Pact Renewables is a private clean tech company and [provider of expert advice on sustainable management of saline waste](#), using its proprietary technology platform and the knowhow developed over three decades of engagement with industry, governments and communities. We strive to provide the best-fit solutions for saline waste challenges, whilst contributing positively to value chain and sustainability objectives of our clients.

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