



ABSTRACT

Global population growth is significantly impacting the environment. To ensure sustainability in food, water and materials, whilst also combatting climate change, a systemic switch from linear to circular is required. Furthermore, the chemicals and materials manufacturing sectors need to urgently decarbonise and defossilise to improve sustainability.

Fiberight's, novel, patented resource recovery process HYDRACYCLE responds to these challenges. The technology segregates and recovers materials (paper/card, rigid/flexible plastics, metals, and food waste) from mixed residual-waste, using water as a separation medium within a closed-loop water-recycling system. The robust process works with mixed household and commercial wastes that are typically landfilled or incinerated. Recovered materials are then upgraded into high-value market-ready products. For example: rigid/flexible plastic packaging can be sorted into polymer fractions for onward recycling and manufacturing; paper and card can be utilised in cellulose-based products or valorised into bio-based sugars for bio-manufacturing.

Fiberight is now operating a commercial HYDRACYCLE plant with a nominal 50,000tpa waste input. Through 2024 Fiberight are installing and commissioning further bolt-on technologies to increase the value of the output materials.

Fiberight also operate an industrial sugars demonstration facility which utilises the paper/card recovered from HYDRACYCLE and converts this into second-generation sugars and a lignin-rich by-product. The sugars have been utilised at significant scale to successfully produce products including thermoset resins and lactic acid. The lignin-rich residual solid has been validated as an ingredient in grout and epoxy formulations, as well as being used within plastic/fibre composite products.

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