

SUSTAINABILITY: NET-ZERO INITIATIVE**FINALIST: BindEthics**

Ecohesive, developed by BindEthics, is a breakthrough bio-adhesive for engineered wood panels that replaces urea-formaldehyde (UF) resins - currently the industry standard but highly carbon-intensive and toxic. Derived from purified industrial food waste, Ecohesive eliminates fossil-based inputs and crop-derived feedstocks, creating a truly circular, low-carbon adhesive solution.

Lifecycle analysis confirms that Ecohesive cuts CO2 emissions by 80% compared with UF resins, achieved through fossil-free raw materials, waste valorisation, and a low-energy synthesis route. At the product level, this delivers around an 8–10% reduction in embodied CO2e per panel, with no loss in performance. Trials in oak, ash, and birch plywood have shown bonding strength equal that of UF, validating its industrial readiness.

Ecohesive addresses a key challenge in the engineered wood and composites sector: reducing embodied carbon without altering production lines or compromising durability. Manufacturers can adopt the adhesive seamlessly, while downstream users - architects, builders, and consumers - benefit from certified low-carbon wood products that align with sustainable construction standards.

With the global wood adhesives market exceeding £20 billion, Ecohesive's drop-in compatibility and 80% lower carbon footprint position it to capture substantial market share. UK-wide adoption could save hundreds of thousands of tonnes of CO2 annually, scaling to millions of tonnes across Europe, directly supporting net-zero goals.

BindEthics developed Ecohesive through 4,000+ R&D hours and £1 million in investment, collaborating with the BDC, Timber Source, BE-ST, Highland Heritage Woodworks and Egger to achieve successful pilot-scale validation and prepare for full commercial deployment.

Learn more at: www.bindethics.com

