

Case study: creating value from waste

A supply and offtake agreement that Orica has secured with Alpha HPA is a great example of how industrial partnerships can optimise the use of resources and the value created from them while also reducing waste.

Alpha HPA produces high purity alumina which is a key-component in many technologies needed to drive a lower-carbon future such as electric vehicle batteries and LED lighting. Its proprietary technology requires reagents to purify raw materials – which Orica manufactures at its nearby plant in Yarwan, Queensland, Australia. At the same time, Alpha HPA produces ammonium nitrate as a by-product of its manufacturing process and this is key to Orica's operations at Yarwan. Our exchange agreement is a win for both organisations as well as the circular economy.

Another example of how Orica is supporting sustainable and circular solutions is our long-term joint venture with Mineral Carbonation International (MCI). MCI is a start-up company focussed on commercialising carbon capture utilisation and storage (CCUS) technology by creating new products from 'waste'. It won 'Best Clean Energy Startup' from a field of 2,700 global solutions at COP 26 in Glasgow.

Carbon dioxide is an industrial waste product of current hydrogen production processes. Along with pursuing alternative sources of hydrogen, CCUS is something we are investing in to help us meet our long-term net zero ambition.

MCI is creating valuable building products out of carbon dioxide. This year we supported the design, engineering and approvals for a demonstration-scale mineral carbonation plant at our site in Kooragang Island, Australia. The plant is scheduled for completion in 2024 and will use waste CO₂ from our operations to produce a range of lower-carbon products for construction, manufacturing and consumer markets.