

Inventure, CPM|Crown commercialise SimplEster for global biodiesel market

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The partnership will commercialise Inventure's SimplEster as a bolt-on to CPM|Crown's sodium methylate systems, offering biodiesel producers greater feedstock flexibility and additional capacity without added catalyst or enzyme costs



Inventure Renewables and CPM|Crown have entered into a global, non-exclusive partnership to commercialise Inventure's SimplEster esterification technology for biodiesel producers, combining the catalyst-free process with CPM|Crown's established sodium methylate biodiesel systems.

The partnership is built around a commercial installation at Western Iowa Energy, LLC (WIE) in Wall Lake, Iowa, where SimplEster was commissioned in 2024 as the technology's first US deployment. The installation has demonstrated the ability to expand processing capacity while converting lower-value fatty acid streams into finished biodiesel within the existing production footprint.

At WIE, the SimplEster system was integrated into the plant's existing sodium methylate transesterification process rather than replacing the existing system. The addition increased processing capacity by approximately 15 per cent while producing biodiesel with an acid value below 0.5 mg KOH/g, the threshold relevant to finished-fuel specifications.

The technology can also be configured for different acid-value requirements, with the process capable of reaching targets as low as 0.2 mg KOH/g depending on feedstock characteristics, plant configuration and finished-fuel requirements. This flexibility could be particularly relevant for producers processing challenging feedstocks or operating without extensive downstream purification equipment.

SimplEster's key distinction is its elimination of added catalyst and enzymes from the esterification stage. By removing these consumable inputs, the technology is designed to reduce operating requirements while simplifying the equipment and maintenance burden associated with conventional esterification approaches.

For biodiesel producers, the economics extend beyond reducing consumable inputs. At WIE, the technology has enabled the plant to retain and process free fatty acids that were previously recovered through conventional steam-strip distillation and sold into commodity markets. Instead of sending the fatty acid stream out of the facility, WIE can now convert it internally into on-specification biodiesel, capturing additional value from the same feedstock.

The approach also gives producers greater flexibility in working with lower-carbon-intensity feedstocks. The SimplEster platform has been used with feedstocks including used cooking oil, tallow, distillers' corn oil and poultry fat, illustrating its potential application across a range of biodiesel raw materials.

Inventure and WIE are also evaluating additional side streams for processing through the SimplEster unit, including black esters recovered from the sodium methyolate glycerol decanter recycle loop. The work reflects the companies' continued effort to expand the range of materials that can be converted through the technology and increase the overall value recovered from biodiesel production streams.

Ryan Long, CEO of Inventure Renewables, said the company's approach is designed to eliminate the need for producers to choose between catalyst- and enzyme-based esterification while providing a way to add capacity alongside existing methyolate systems. He said the WIE installation demonstrated the ability to integrate the technology into an operating plant, increase capacity and convert a previously lower-value by-product into finished biodiesel.

Brad Wilson, CEO of Western Iowa Energy, said the company had been processing lower-carbon-intensity feedstocks but had previously sold recovered fatty acids rather than converting them internally. The SimplEster installation allowed WIE to retain the material, process it into biodiesel and extract more value from its existing production footprint.

Bill Morphew, vice president of CPM|Crown, said the two technologies are complementary and that SimplEster offers producers already operating sodium methyolate systems a relatively straightforward route to greater feedstock flexibility and additional capacity. He added that the commercial experience at Western Iowa Energy provided an important demonstration of the two technologies operating together.

Under the new agreement, CPM|Crown will offer SimplEster as a bolt-on solution alongside its existing technology portfolio. The model is intended to provide biodiesel producers with a pathway to upgrade existing plants rather than undertake a complete replacement of established sodium methyolate processing systems.

For an industry facing increasing demand for lower-carbon fuels and greater pressure to process diverse feedstocks efficiently, the partnership highlights a broader shift towards technologies that can improve the economics of existing biodiesel assets. By combining catalyst-free esterification with established transesterification infrastructure, Inventure and CPM|Crown aim to give producers a practical route to expanding capacity, improving feedstock utilisation and extracting greater value from existing operations.

Inventure, which has deployed more than \$250 million in first-of-kind processing capacity across North America and Asia, will work with CPM|Crown to expand the commercial availability of SimplEster to biodiesel producers globally.