

[Back to Biorefining homepage](#)

Biobutanol consolidation: Green Biologics, butylfuel merge

By [Bryan Sims](#) | January 26, 2012

U.K.-based Green Biologics Ltd. and U.S.-based butylfuel LLC have completed a merger agreement in which the new company will operate under the Green Biologics name and continue to be headquartered in Abingdon, U.K., with a strong operational presence and commercial focus in the U.S. biobutanol market contributed by butylfuel.

The merged GBL will be a globally managed entity focused on the technical optimization, production and commercialization of C4-based chemicals and advanced biofuels derived from a variety of starch, sugar and cellulosic feedstocks, utilizing a proprietary ABE (acetone-butanol-ethanol) fermentation technology with the use of solventogenic *Clostridia* strains as biocatalysts developed by GBL specifically for the production of biobased n-butanol, acetone and butyric acid.

Founded in 2003, GBL currently has three projects underway using molasses and corn byproduct feedstocks. In India and Brazil, GBL's focus is molasses, sugarcane and bagasse. In North America, the focus is on both starch-based and cellulosic feedstocks.

Conversely, butylfuel LLC was founded in 1991 when founder, David Ramey, began his efforts to publicize the potential of biobutanol as an alternative fuel. As a result of the merger, GBL inherits a 1,100 liter pilot plant near Columbus, Ohio, from butylfuel LLC staff, which will serve as a proving ground for the merged GBL company for testing a range of feedstocks and refining the performance and economics of the technology platform.

In the short-term, GBL's immediate focus is the production of n-butanol, acetone and butyric acid for their chemical applications. The company aims to work closely with key customers and collaboration partners in the value chain to manage an orderly entrant into large global markets. Butanol and its derivatives are key intermediates in the production of paints, coatings, adhesives and inks, an \$85 billion market. Butyl acrylates are also used in the \$700 billion global plastics and polymers market.

According to GBL CEO Sean Sutcliffe, the newly merged company's longer-term vision is that n-butanol will be a drop-in advanced biofuel that can be used either as a blendstock with existing biofuels such as biodiesel, ethanol or isobutanol, or it could be used as a hydrocarbon chemical building block for the production of biojet fuel.

"The economics work for chemicals today," Sutcliffe told *Biorefining Magazine*. "As we continuously improve the performance then that will open up the fuels market in the medium term. The focus now is on the chemicals market."

GBL deploys its technology using a "capital light" business model to leverage existing industrial production assets, such as corn ethanol plants, to reduce operating and capital expenditures and to enable rapid deployment and commercialization. According to Sutcliffe, the merger with butylfuel is a reflection of GBL's short-term strategy of pursuing retrofit or bolt-on activities of its novel technology platform to existing corn ethanol production plants in North America.

"We looked at the different ways of addressing that market and the most effective one clearly to us was to build a strong U.S. presence, and merging with butylfuel was the way to achieve that," Sutcliffe said. "The lowest risk in terms of technology for an existing ethanol producer in North America is to switch from ethanol to butanol production, but obviously they're going to want to move to lower cost cellulosic feedstocks in the future, particularly to build up volumes for the biofuels market."

Sutcliffe continued, "Just in the last two years we've made a lot of progress in reducing the cost of production and improving the economics further, which is opening up the U.S. market for us in particular. But, there's still a way to go in terms of what we can see how to improve the cost even further as time goes on. It's economic today and obviously our job is to ensure that it stays economical as well."

According to Sutcliffe, GBL is currently in discussions with corn ethanol producers to potentially incorporate its biobutanol technology platform, adding that the company anticipates "signing one up in the next year or so," he said. "That's really based on the fact that the economics are pretty strong," Sutcliffe added. "It's a good market for butanol, the cost of corn has come down a little bit and the logistics are in place, so it's a good business opportunity for an ethanol producer to improve their overall economics."



Optimization and performance runs of GBL's proprietary ABE fermentation-based technology pathway are conducted at its pilot facility in the U.K.

Photo: Green Biologics Ltd.