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Corn-to-butanol project on track

The renewables group aims to ramp up production from its US facility through 2017 as it looks for partners for further expansions

WILL BEACHAM BARCELONA

Green Biologics, the UK-headquartered producer of renewable-based n-butanol and acetone, is on track to complete the retrofit of a commercial scale US ethanol facility by the end of 2016, its CEO Sean Sutcliffe says. The company set out plans at the beginning of 2015 to retrofit the 21m gallon ethanol facility at Little Falls, Minnesota, for the production of high-purity n-butanol and acetone, and the project is progressing on schedule, according to Sutcliffe.

The company also has a 1/30 scale demonstration plant that has been running since August 2014 to prove its Clostridium microbial fermentation technology and ensure consistent quality is deliverable. This allows high-purity n-butanol and acetone to be produced, which is benzene-free and with low water content compared to petrochemical-derived alternatives, he claims.

“We’ve had interest from people looking for these advantages. One major producer of butanol derivatives said it’s the best quality they’d ever sampled. People are rightly cautious as they need high-quality product,” he adds.

Once in commercial production, operating

rates at Little Falls are expected to ramp up during its first year. A key market strategy is to focus on applications where customers value performance and the natural qualities of the product.

To support this, a laboratory has been established in Virginia, US, to provide derivatives across a range of specialty chemical applications in paints, coatings, home fuels and laboratory chemicals.

Sutcliffe does not expect to see one large offtake, but rather a range of large to mid-sized customers. North America will be the main market target, but he expects to see demand from Europe and Asia where transport costs can be borne for these specialty, high-value products.

“We focus on adding performance and when I talk to customers about one application customers often discuss other markets. We’re seeing more applications where renewable acetone and derivatives give an edge, especially as you get closer to [end use] customers,” he says.

Green Biologics needs to achieve a balance between pursuing new markets and ramping up sales from the plant in the first instance.

Total funds raised in 2013-2014 were \$100m, and the bulk of this has been spent on the retrofit and purchase of the Central Minnesota Renewables (Little Falls) asset. Plus, a significant amount has been invested in technology development at the demonstration plant.

The Little Falls plant was producing ethanol from corn until March 2016 and will now make butanol from corn.

Further ahead the company is looking at cellulosic feedstocks including woody biomass – part of the long-term growth strategy. Asked

about the fuel-to-fuel debate, Sutcliffe says the corn was being used to make fuel, but now it will make chemicals as well as animal feed from the same feedstock.

The company is looking for partners in the US, Europe, South America and Asia to explore



“We’re seeing more applications where renewable acetone and derivatives give an edge”

SEAN SUTCLIFFE
CEO, Green Biologics

further expansions. “The primary focus is getting the first plant running and then look at a second large retrofit in the US. Our preference is for joint venture arrangements, more naturally with feedstock providers [than downstream customers.]”

In April the company signed an agreement with US-based distributor Nexeo Solutions to supply n-butanol and acetone to US customers in key markets including CASE (coatings, adhesives, sealants and elastomers), HI&I (household, industrial & institutional cleaners), PCI (personal care intermediates) and energy chemicals.

He says the group is getting good customer feedback for specialty chemical applications with the quality it is providing.

“They can see this is something their customers will pay for. End-use customers like natural products and higher performance.” ■



The retrofit of a US ethanol facility is due for completion by the end of the year