

HOW A UNIQUE APPROACH FROM FLUID QUIP TECHNOLOGIES IS PROVIDING VITAL BUILDING BLOCKS FOR THE BIOECONOMY

BY LUKE UPTON



Writing everyday about the bio-economy, there's often a lot of hyperbole about a new technology, a novel solution, or perhaps an innovative way of thinking. And yes, absolutely there's a big place for a 'blank canvas' approach for an emerging industry like ours. But there are other routes to supporting sustainable success, and one in particular, from Fluid Quip Technologies harnesses existing platforms and feedstocks, and by adding in their own technology and extensive expertise, works to overcome two of the biggest challenges for those wishing to use renewable chemicals - reducing the barriers to entry and lowering costs.

Based in the USA, but with a growing global presence, this engineering tech company has over 25 years of experience in corn wet/dry milling, ethanol and agricultural processing and is now focussing this hard-earned know-how in supporting the bioeconomy. With a strong track record in real world project delivery, they are well placed to fulfil economic, regulatory, quality, and other requirements within budgetary and time constraints. And they have a full-scale solution providing proven carbohydrate sources to the bio-chem industry.

Neal Jakel Partner/Strategy & Technology at Fluid Quip Technologies spoke exclusively to *Bio Market Insights*, to share some thoughts on their work in our sector: "We are seeing a big increase in bio-based markets, whether its bio-polymers, biochemicals or biofuels. As demand rises, so too does the need for abundant carbohydrate sources to power its growth. And this is where the problem lies, there is a shortage of available glucose in the marketplace, and what sugars are available are typically expensive, making it a challenge to produce these in-demand bioproducts economically. As we all know, money talks, and if a green product is considerably more expensive than its less sustainable comparable to traditionally produced alternatives. Hence, people will tend to go with the less costly option all day. This is as true whether purchasing chemicals on an industrial scale, or choosing a brand of detergent on the weekly trip to the supermarket."

"So recognising this demand and also the challenge, we decided to use our knowledge from our teams extensive ag processing background to develop and deploy our Clean Sugar Technology (CST) system that can be retrofitted to any dry-grind, cereal-processing or bioethanol facility. By adopting it, an industrial sugar stream can be produced at up to 50% less than the cost of traditional carbohydrate sources, overcoming the barrier of cost."

This approach offers abundant rewards. Its ability to be bolted onto any current facility, and there are 200+ available ethanol plants in the USA, as well as all the facilities in Europe, to create a 'sugar slip-stream' that can significantly diversify a plant's revenue streams. This

is particularly important when ethanol prices remain low, and there exist large quantities of already installed capital assets and equipment. As a result, the sugars produced are actually likely to be more valuable than the ethanol itself. Do to the innovativeness of the CST system, the carbon intensity to produce these sugars is a fraction of carbon footprint of the more traditional sugar production methods.

The opportunity also opens up for those already involved in producing sugar for foods. Sugar consumption per capita is decreasing, but demand for sugars for bioproduct and food protein application are rapidly increasing.



Fluid Quip Technologies are already working with food companies to create new revenue streams for them through lower cost alternative sugar production systems. The bridging of the gap between innovations and commercialisation for biorefineries typically requires a lengthy development cycle and significant capital investment. A new product or a new process to produce an existing product, must meet multiple requirements before it can be successfully commercialised. Just some of the hurdles to overcome include the not just aforementioned availability of feedstocks but also of utilities and water, production economics, quality specifications and technology expertise.

Neal Jakel acknowledges the challenges in making technical changes, but the

Fluid Quip Technologies team is set-up specifically to help overcome them: "To put it simply, our stuff works. We are rooted in real-world experience, and our processes are already at full commercial scale globally. We employ a full team of hire process engineers, CAD designers and project managers not desk engineers! And they get really stuck into the details and complexity of each project, particularly when it comes to solving problems. All our operations, procurement, process and project engineering are done in-house, so there's a good spirit of collaboration and if people have an issue they get stuck on, they can just walk down the hall and find an answer! We can begin anywhere in the process and at any time. And we really believe in the idea of 'customers for life' and having delivered engineering and technical projects for more than 25 years, we have the testimonials to prove it. In fact, when we talk to prospective clients, we encourage them to talk independently to our current ones about how we've co-operated together as a team."

In a world where the three R's are increasingly needing to be reduce, reuse and recycle, there's something particularly satisfying in the way that Fluid Quip Technologies uses their technology and expertise to plug into existing processes and deliver some major bio-based results. Cost is the number one issue holding back the proliferation of greener products, and this approach makes significant inroads into overcoming this challenge as well as delivering fresh revenue for their clients.

"We really see our Clean Sugar Technology as a game-changer, it can produce multi-specification sugar at up to 50% cheaper than current processes and everyday we are doing this ownership teams at ethanol across the world. We like to say that we are 'feeding the bioeconomy' by helping solve the global sugar shortage and by lowering costs, we can support biochemicals to present a more sustainable and cost-effective alternative to the current oil-based ones. We are growing quickly and we are excited where our journey will take us next." ■

If you would like to speak to Fluid Quip Technologies to learn more about they could work with you, contact Keith Jakel kjakel@fluidquiptechnologies.com +1 309-320-7709 or visit us online at fluidquiptechnologies.com