



## **Butamax CEO Talks Biobutanol, RFS as Phase 1 of Plant Retrofit Completed**

**By Rachel Gantz**

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Biobutanol company Butamax, a joint venture between BP and DuPont, is hosting a ceremony today to celebrate the completion of the first phase of its isobutanol retrofit at Highwater Ethanol's 55-million gal/yr ethanol plant in Lambertton, Minn. Among those in attendance will be U.S. Rep. Collin Peterson (D-Minn.), local officials and executives from both Butamax and Highwater Ethanol. Ahead of the ceremony, OPIS spoke with Butamax CEO Paul Beckwith to discuss the plant's progress and his thoughts on the overall industry.

OPIS: What was involved in the first phase of the plant retrofit?

Beckwith: We announced the retrofit in October 2013. A key part of what's required is installing our proprietary separation system. It prepares corn mash for fermentation into isobutanol and very effectively separates corn oil from corn mash ahead of fermentation. We have seen really good results and have created high value for ethanol producers.

We broke ground at the Highwater Ethanol plant in October 2013 and completed construction on March 21, 2014. We completed commissioning on the same day and started up in only five days. We are absolutely delighted with how the project has gone. It validates our approach, which is a very thorough testing of technology in piloting ahead of commercial implementation. It de-risks the next phase related to butanol production.

OPIS: Can you explain the second phase of the retrofit, involving the plant ultimately producing biobutanol?

Beckwith: We have started front-end engineering for the second phase, with work continuing the rest of this year at least. This will define the details for the rest of construction and lead to design of the facility. We are targeting having that plant completed late 2015 or 2016. This is largely in line with what we've been thinking for a while.

OPIS: What is the cost for the retrofit?

Beckwith: We have not made that public at this stage. But I can say the first phase will be implemented on budget.

We do have a number of companies approaching us for this technology, whether it be investment to improve productivity from an existing corn ethanol plant, or investment into butanol. We certainly see significant value creation. At the moment though, we are putting the system through its paces and removing corn oil at high rates. It's possible to improve further upon that and a number of activities are underway to optimize the system.

OPIS: Are there plans for other plants to partner with Butamax on biobutanol retrofits?

Beckwith: Yes. We are aiming to demonstrate the technology at one facility at first and then we will have a number of plants lined up for retrofit.

OPIS: What is the status of EPA's approval for Butamax's Part 79 registration, which will allow the company to sell isobutanol for use in blends containing up to 16%?

Beckwith: That work is actually underway at the moment. We have been working closely with EPA. That kicked off further testing, which EPA asked for, to complete our dossier. There is nothing we see that gives us any concern about the ultimate approval of the registration, but EPA had asked for additional data.

OPIS: Butamax submitted the health effects data to EPA in December 2012. Are you frustrated with the length of time this has taken?

Beckwith: It is fair to say this process has taken significantly longer than we would have liked to. But we are on a good path with EPA now. We've worked with them to get clarity around issues. These weren't completely clear initially. I think we're on a good path now.

OPIS: What are your thoughts on the Renewable Fuel Standard (RFS2) and if left unchanged from the 2014 proposal, what impact would the final rule have on your company and the overall industry?

Beckwith: Given the timing of when the 2014 RVO [renewable volume obligation] is going to be finalized, it seems to be very unlikely EPA will change it very

significantly from what EPA proposed in the notice of proposed rulemaking. It's just going to be so late in the year when they issue the final rule. But the key thing for us is the long-term direction by the administration. We do believe the administration is committed to biofuels and to the growth of biofuels. There is clear evidence that the RFS gives EPA the discretion it needs to manage the expansion of a rollout in a way that can be handled by the industry.

OPIS: If in EPA's final 2014 RFS it reduces biofuel targets, would that still be seen as an administration that is committed to biofuels?

Beckwith: We're really focused long term, beyond one year's targets. Directionally, EPA will probably include something of an increase [in the final 2014 rule] relative to the proposal, but EPA will have to moderate the targets because of the timing [released so late in 2014]. We are looking for direction beyond 2014.

OPIS: Where do you see the future of the biofuels industry?

Beckwith: Long term, I do see an industry that competes head to head with oil in its own right. The RFS is, however, an extremely helpful framework for creating a playing field that allows biofuels to get established and compete in the fuels market. There needs to be mechanisms that allow biofuels to go beyond E10 saturation and we see biobutanol as one of the key ways to allow the industry to go beyond E10. In the long term, the biofuels industry will be able to compete in its own right. But in the medium term, we need the RFS in place in order to set the direction and get an even playing field.

OPIS: Do you support any legislative fixes to the RFS?

Beckwith: We don't see this as necessary. The RFS works as currently structured. Honestly, today's situation shows that EPA has discretion they need to implement growth in biofuels in line with what the industry -- both in biofuels and conventional fuels -- are able to handle.

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