DuPont Danisco Opens Cellulosic Ethanol Demonstration Plant

JIM LANE, Biofuels Digest

The DuPont Danisco cellulosic ethanol plant in Vonore, Tennessee (Biofuels Digest).

In Tennessee, Dupont Danisco Cellulosic Ethanol will officially open its 250,000 gallon demonstration facility in Vonore, and the first one dedicated to converting both agricultural residue and bioenergy crops to fuel ethanol. The facility has initiated start-up and began producing ethanol in mid-January. The facility is focused on process and data validation to achieve commercial scale production by 2012. The plant is using corn cobs as a feedstock today, and will begin to integrate switchgrass grown primarily in Tennessee later this year.

“A perfect storm made this happen,” DDCE CEO Joe Skurla told the Digest. “Governor Bredesen’s vision, plus our need to put in a demonstrate plant. To start in October 2008 and to have a plant complete and started up — I’ve seen a lot of projects in my time, but I’ve never seen a team come together and overcome the issues like this one.”

Skurla said that final design for DDCE’s technology will be completed after data is accumulated from the demonstration plant, and construction will begin in 2011 on the cobs plant, which is likely to be built in the corn belt.

To improve the lifecycle analysis of the plant and increase the reduction in Greenhouse gas emissions, the plant is burning lignin, recovered from the process, as fuel for the system in place of natural gas. Lignin is being burned as fuel for the

system.

Tennessee Gov. Phil Bredesen will be on an honored speaker at the event, along with other state, local, and business dignitaries. The 74,000-square-foot facility has the capacity to produce 250,000 gallons of ethanol from corncobs and switchgrass and is preparing DDCE's innovative integrated technology for commercial production by 2012.

Skurla confirmed to the Digest that conversations are occurring with "several early adopters" in terms of licensing technologies, and said that the US was a likely first area of licensing operations although he added that conversations have emerged with potential parties in Europe, Asia and South America, and said that the technology would be effective with any region where agricultural residues or energy crops could be provided at scale. Likely facility size is 50 Mgy in the near term , working off a 35-50 mile radius for residues and crops. Skurla commented that ultimately the company beeves it can deploy its technology at 100 Mgy scale.

The model for biomass aggregation? DDCE pointed to the partnership with Genera Energy, a University of Tennessee spinout that is developing the logistics for a biomass supply chain, with a goal of establishing multi-year contracts for energy crops that would be grown specifically for the cellulosic ethanol facility, and thereby limit the volatility in feedstock prices that have plagued first-generation ethanol.

Asked to comment on what set DDCE apart from other cellulosic ethanol technology licensors, Skurla identified thre factors: "One, all the technologies under one roof, basic in fundamental in every aspect, through our parents DuPont, Genencor and Danisco as well as our own work. Two, our project execution capabilities — that's the Dupont and Danisco/Genencor experience in building projects all around the world. Three, we view this holistically — clients will see us as a partner rather than just as a licensing company."

Metrics? The plant is producing over 85 gallons per ton, and is targeting 90 gallons per ton by the time of its commercial rollout. Capital costs are $5-$6 per gallon of operating capacity, based on the company's models, and are expected to reach sub-$5 by the time of the first commercial rollout and "pushing $4? by the time the company has completed "4-5 plants". The company's manufacturing cost is $2 per gallon, with a goal of reaching $1.50 per gallon, and will be competitive with $85-$90 oil, and is designed to be competitive without subsidies or incentives.

DDCE was established in 2008 to integrate the state-of-the art technologies and engineering expertise of DuPont and Danisco, and today is accelerating commercialization of cellulosic ethanol.

Meanwhile, Forbes has filed an excellent report [1] on the opening, with a focus also on a local switchgrass grower who said that he planted on 39 acres which were too steep for row crops, such as corn or soybeans. The grower reported that "switchgrass is extremely slow to germinate" and is less profitable than row farming but offers superior returns to pasture or hay ground. UT estimates that 5,600 acres of switchgrass will be cultivated in Tennessee in 2010.

More on the story from DDCE [2].

SOURCE [3]

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