EPA Slashes Cellulosic Biofuel Target

Jim Lane, Biofuels Digest

In Washington, the EPA issued this week its proposed RFS2 renewable fuel blending mandates for 2011. Stunners among the announced targets were the confirmation of an 800 million gallon blending mandate for biodiesel, and the dropping of the cellulosic biofuel mandate from 250 million gallons to a 6-25 million gallon range.

Overall the EPA did not waive down on the overall advanced biofuels targets of 1.35 billion gallons, though they leaned more heavily on the concept of “ethanol-equivalency” to meet the numbers (for example, a gallon of biodiesel, having 50 percent more energy per gallon than ethanol, has a 1.5 gallon ethanol-equivalent value).

Here’s the Tale of the Tape:

Cellulosic biofuel was 250 million gallons, now 6.5-25.5 million gallons.
Biomass-based diesel was 800 million gallons, and stays there.
Advanced biofuel was 1.35 billion gallons, and stays there.

Keep in mind, confusingly, that cellulosic biofuels and biomass-based biofuels are “nested” within advanced biofuels, which means that a gallon of cellulosic ethanol counts towards the cellulosic biofuel mandate and also rolls up into the overall advanced biofuel volumes.

Here’s the EPA’s Rationale:

“We first considered whether it appears likely that the required biomass-based diesel volume of 0.8 billion gallons can be met with existing biodiesel production capacity in 2011…we believe that the 0.8 billion gallon standard can indeed be met…Of the remaining 0.15 bill gallons, up to 0.026 bill gallons would be met with the proposed volume of cellulosic biofuel. Based on our analysis as described in Section II.C, there may be sufficient volumes of other advanced biofuels, such as

imported sugarcane ethanol, additional biodiesel, or renewable diesel, such that the standard for advanced biofuel could remain at the statutory level of 1.35 billion gallons."

In short, it will be up to blenders to find between 124 and 144 million gallons of qualifying advanced biofuels from imported sugarcane ethanol, additional cellulosic biofuel production, additional biodiesel, or renewable diesel, during 2011, or the blenders can buy appropriate Renewable Information Number (RINs) credits to make up the difference.

OK – What?

The complete EPA proposed mandate is here [1].

OK – Why?

The EPA is matching its mandates to production capacity. The fact that there was only 300 million gallons of biodiesel produced in the US this year is less important than the more than 2 billion gallons in production capacity. The mandate is expected to supply the demand that will begin to absorb that stranded capacity.

There are some elegant structures in the RFS2 to ensure that the mandate does not become a hold-up of oil refiners – they have the option to purchase RINs if market prices for biodiesel are too high – but at some point the RIN price and the biodiesel price will meet, and thereby create a market in biodiesel.

On the cellulosic biofuel side, the telling factor is lack of capacity. To form their estimate, the EPA projected the following production availability:

AE Advanced Fuels (Keyes, CA) 0.5 million gallons
Agresti Biofuels (Pike County, KY) 1.0 million gallons.
Bell Bio-Energy (Atlanta, GA) 11.9 million gallons
Cello Energy (Bay Minette, AL) 8.5 million gallons
DuPont Dansico (Vonore, TN) 0.15 million gallons
Fiberight (Blairstown, IA) 2.8 million gallons
Iogen (Ottawa, Ontario) 0.25 million gallons
KL Energy WBE (Upton, WY) 0.4 million gallons

Maximum total availability: 25.5 million gallons

There are some surprising omissions, and readers may be surprised to hear that the Bell Bioenergy and Cell Energy projects are projecting up to 20.4 million gallons of production in 2011. Neither project has been much heard from of late.

The Bell Bioenergy website hasn't been updated, for example, in nearly 18 months with any project information, and Cello Energy hasn't been heard of at all in the industry since principals of the company suffered a fraud judgment last year in connection with its investment history. At one point back in 2008, Cello was projected to supply 75 million gallons towards the 2010 mandate, and it was

primarily the delay in this project that caused the cellulosic biofuel mandate to be waived down last year.

All that to show that the EPA has stretched, by its definition of how to count towards the mandate, to even reach 25.5 million gallons.

So where are some of the higher-profile projects in cellulosic biofuel, like INEOS Bio, AE Biofuels commercial-scale project, POET's Project Liberty, Dynamic Fuels, Range Fuels, Enerkem, Gevo and others that are expected to come online?

Well, the Digest did a check-around yesterday, and it appears that, in general, the EPA has it right in terms of actual production in 2011, at least that projects are willing to commit to. POET's Project Liberty is scheduled to open in early 2012, AE Biofuels and INEOS Bio are not giving specific commitments on the timing of their expansions (preferring to underpromise and overdeliver), and Iogen's 23 Mgy project does not appear to be in position to be completed before the very end of the year (if then, depending on financing). Range Fuels will be producing methanol during 2011 as it demonstrates its technology and prepares to convert over to higher production volumes and ethanol as soon as 2012.

It's Not All Bad News

Checking around on major projects, the Digest finds that cellulosic ethanol continues to be "right around the corner". Critics of the sector continue to scoff that the "right around he corner" or "five years away" refrain has been heard for some time.

Though production volumes may not be nearly as significant as hoped for in 2007, there's no doubt that cellulosic biofuel is starting to become commercially available and will grow sharply in the 2012-14 period.

As for reasons why it has not come along faster, there are three factors. First, technological uncertainty. Second, the failure in the banking sector, combined with the failure of the DOE Loan Guarantee program. Third, the momentum gathering with competing biofuels.

Project updates

"We are in the process of moving our existing 160,000 gallon commercial demonstration facility from Montana to California," relates AE Biofuels CEO Eric McAfee. "We are awaiting a $3.2 million matching grant from the California Energy Commission before re-commissioning in California. The California facility will have expanded capacity, with the initial production comprising 500,000 gallons."

"We're in the process of finalizing our EPC contractor selection," advises INEOS Bio's COO Mark Niederschulte. "Once done we'll know our final schedule."

Other EPA options

Well, the EPA contends that it does not have the authority to maintain the proposed mandated production levels without the prospect of production. There's truth to that, the RFS2 was written in such a way that the EPA is required to waive the mandate down if production capacity is not available.

The writing of that provision is reported to be a trade-off with the oil industry, in return for not opposing the 2007 EISA Act that established RFS2.

But the EPA had some options. The RFS2 also specifies that there is some leeway in terms of an oil refiners compliance with a mandate – RIN credits, for example, can be purchased in 2010 and applied toward 2011 mandates, and vice versa.

Reaction to the mandate proposal

The RFA was not happy [2]. "While this may be prudent for EPA based on market conditions, it does send a chilling effect through the investment community with respect to cellulosic ethanol technologies, said RFA spokesman Matt Hartwig. "EPA's estimates under score the need for Dept. of Energy and USDA to construct loan guarantee programs that work for cellulosic ethanol companies."

The Growth in Alternative Fuels

But the overall message that the EPA sent was a positive one. The overall mandate of 1.35 billion gallons was enforced, even though the EPA couldn't or didn't choose to spell out exactly where refiners would obtain the 124-144 million gallons of "gap biofuels". As EPA and everyone recognizes, there are a wide assortment of options for fulfilling that portion of the mandate, whether it is sugarcane ethanol from Brazil, or renewable diesel production in the U.S. or from imports.

The Dynamic Fuels project in Geismar, Louisiana, for example, is expected to be completed this year and has a nameplate capacity of 75 million gallons of renewable diesel made from animal residues. It's a long-awaited commercial launch from the JV owned by Tyson and Syntroleum. Should the production come online at full nameplate capacity, and qualify under the advanced biofuels category (with a 50 percent overall reduction in GHG emissions), there's 112 million gallons right there.

Renewable diesel is also expected to come online from LS9 in 2011 in its Florida project, and perhaps we'll see added cellulosic biofuel production as INEOS, AE Biofuels and others work through their financing, construction and commissioning timelines.

Overall, the message is clear. Though individual sectors may struggle, the overall mandate is enforceable and will be enforced. That's good news for 2011, and beyond.

Revised Advanced Biofuels Tracking Database

Along with the EPA announcements, the Digest is releasing today version 1.5 of the

Advanced Biofuels Tracking Database, which is now showing 3.13 billion gallons in global advanced biofuels capacity completed by 2014. Overall, the Digest is now tracking 82 announced projects (some with multiple site locations). 11 projects have been added or have had revised capacities since the last release in May.

The most significant additions are the Neste Oil projects in Finland, the Netherlands and Singapore, which a number of readers had requested be added into the database. We have also broken out “renewable diesel” and “renewable oils” as separate fuel categories, as well as adding “RFS2 category” for each project to help sort out how projects may contribute to the complex set of US RFS2 mandates.

New projects tracked, aside from Neste Oil, include Aquatic Energy, National Research Council (Canada), Oxford Catalysts, Phycal, and Queensland University of Technology’s ethanol and renewable oils projects.

The database is downloadable here [3].

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