Hot Sauce! Five Bayoufuels Lessons from Louisiana, Part 1

 By JIM LANE, Editor, Biofuels Digest

Louisiana — hot as cayenne pepper in biofuels capacity development, but some cautionary tales there in the sauce.

When it comes to the first generation of ethanol and biodiesel-based biofuels, Louisiana didn't figure much into the calculations — to date, there's just the 5 million gallon (per year) Oswalt Bioenergy biodiesel plant in Lake Providence, which opened last year.

But since drop-in renewable fuels arrived, Louisiana hasn't just been in the race, or near the front of the pack — it has become the Secretariat of project development — out in front by a mile. In all, more than 500 million gallons in advanced biofuels and chemicals project capacity announced — a 100-fold jump in the past five years.

Now — before booking your ticket down to Baton Rouge for the "renewable fuels forever" victory parade , let's emphasize the phrase "project announcement".

76 million gallons of that proposed capacity is currently completed (another 142 million expected to come online this year, and 50 million more in 2014, the rest we don't have firm dates on as we await financing news). From that capacity, today, there's not currently any commercial production — as Dynamic Fuels awaits better RIN price conditions (and the 1.5 mgy BP Biofuels plant in Jennings is a pilot plant used in research and development).

So, we can learn a lot down in the bayous about what works, and what's problematic, in advanced biofuels development.

1. Smoke 'em if you got 'em

Louisiana has many blessings above and beyond Bourbon Street and cajun spices.

Among them are an abundance of gases for sale — from hydrogen to natural gas; fats and greases from animal rendering, and a forestry sector that has fallen on tough times with the decline of newsprint. Buck Vandersteen, executive director of the Louisiana Forestry Association, spoke for a lot of these resources in observing, “We have to recognize our traditional industries and seek out new industries.”

The combination of rendering greases and hydrogen is, for now, the primary catalyst for growth — as Louisiana firms have perfected the art of purifying greases into renewable oils which are then hydrotreated to remove excess oxygen — voila, producing renewable diesel. Variations on this formula are the source of the Tyson-Syntroleum 75 million gallon plant in Geismar (Dynamic Fuels), the Valero-Darling 137 million gallon project in Norco (Diamond Green Diesel), the proposed Emerald Biofuels 85 million gallon project in Plaquemine, and the proposed D2 Renewable 150 million gallon project in Convent.

In all, that’s just on 90 percent of the activity in the state. Most of the remainder comes from the Sundrop Fuels project near Alexandria. Using forest waste and hydrogen from natural gas, the plant will produce up to 50 MGy of renewable gasoline. The biofuels plant will salvage wood waste in Central Louisiana and adjacent regions and also will extract hydrogen from abundant supplies of Louisiana natural gas, combining the hydrogen in a proprietary reactor with carbon extracted from wood waste. Construction is expected to be complete in 2014.

READ MORE: The Olive Economy, including the Sundrop project.

The projects pale with the scope of Sasol’s proposed $21 billion gas-to-liquids and ethane cracking plant proposed for Louisiana — but it goes to show you that there is nothing that stimulates activity more than an abundance of low-cost feedstocks.

2. In grease, color matters

White grease bad, yellow grease better, brown grease best.

Generally speaking, traditional biodiesel plants utilize choice white grease if they can utilize grease at all. Only a few companies have pioneered cost-effective technologies for making FAME biodiesel out of yellow greases — that been one of Renewable Energy Group’s great advantages, for example. These days, white grease is expensive — and you don’t see much traditional biodiesel capacity being built in the bayous as a result.

Yellow greases — the economics used to be wonderful — now, not so much. Projects like Dynamic Fuels were based on those feedstocks — but these days, the price of the feedstock has made renewable diesel a tough economic proposition unless the RIN prices for renewable fuel credits, and other incentives like blenders credits, are available.

The next yellow grease project to come online will be Diamond Green Diesel, capable of producing over 9,300 barrels per day or 137 million gallons per year of renewable diesel on a site adjacent to Valero’s St. Charles refinery near Norco,

Louisiana. The facility will convert grease, primarily animal fats and used cooking oil supplied by Darling. Completion of the facility is expected to be imminent.

But the future may well be in brown grease – the really tough to use material – sludgy and klugy. That's said to be the strategy for D2 Renewable, developing a 70 acre energy park, located in Convent, Louisiana. The energy park will ultimately consist of five 30 million gallon refineries producing ASTM D 975 Renewable Ultra-Low Sulfur Diesel fuel.

Please tune into the Chemical Equipment Daily for part two of this two-part piece. What's your take? Please feel free to comment below!