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October 11, 2007

## New Refinery to "Fix" Key Flaws in Biodiesel Production

by Denis Du Bois

Seymour, Indiana. It's the birthplace of American rock singer-songwriter, John [Cougar] Mellancamp. But the city's biggest claim to fame may one day be in the form of a biodiesel refinery based on technology that converts low-grade fats and vegetable oils into biodiesel.

At least that's the hope of Chicago-based [Benefuel, Inc.](#) a new-generation biodiesel refining and distribution company, and its customer Seymour Biofuels. The companies announced yesterday they plan to construct a 10 million gallon biodiesel plant that uses Benefuel's proprietary, solid acid catalyst. Benefuel supplies the refinery; Seymour will build and operate the plant.

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-- Rob Tripp, CEO, Benefuel

Solid catalysts aren't new, but Benefuel claims to be the first to use them in biodiesel production.

"A solid catalyst looks like a very small piece of spaghetti," explains Rob Tripp, CEO of Benefuel. "As you push methanol and oil through a fixed bed reactor that's packed with millions of these tiny pieces of spaghetti, the surface area causes the reaction."

Benefuel says the plant will be the world's first industrial-scale facility to use the catalyst. The company previously built a small pilot plant in India, where they have tested several feedstocks including soy, palm and jatropha.

In addition to the common feedstocks, the catalyst can turn waste grease, vegetable oil, or animal fat directly into biodiesel. Are sufficient quantities available to make 10 million gallons of fuel per year?

"Absolutely," says Tripp. "The rendering industry is quite big, and the waste grease industry is probably bigger than the soybean industry."

Tripp says the largest consumers of biodiesel are trucking and rail companies. Benefuel is partnering with rendering companies by placing refineries on site. Benefuel then markets the fuel directly to large transportation companies in the area.

"Much of the energy input associated with any fuel is the cost of transporting it," Tripp explains, "and we believe we can dramatically shrink that down with localized production and distribution."

The solid catalyst produces a market-ready glycerin byproduct. The glycerin can become a revenue stream if it is sold for commercial uses, or it can be added to the biofuel to enhance it.

"We're turning the glycerin into a product stream by blending it back into our fuel," Tripp says. "We get lower particulate emissions and improve our cold-weather characteristics, as well."

Benefuel expects the combined production savings to be significant. Savings of \$0.15 to \$0.40 cents per gallon are expected from being able to choose the lowest-cost option from among several locally-available feedstocks. Another \$0.30 to \$0.50 cents per gallon can be saved by reusing the glycerin byproduct, Tripp says.

The new refinery in Seymour, Indiana, is expected to start producing biofuel in late 2008.

*Dennis Du Bois is editor and founder of [Energy Priorities](#) magazine. This article was republished with permission from Energy Priorities.*