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NEWS

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Biodiesel returns more energy to the earth than ever, study finds

More data show how EPA should give biodiesel credit for advancements...without giving petroleum a free ride

JEFFERSON CITY, MO. – Biodiesel is better than ever at harnessing the power of the sun and turning it into fuel. In fact, a study shows the fuel is returning more than four times the energy that it takes to make biodiesel.

Newly [published research](#) from the University of Idaho and U.S. Department of Agriculture shows that for every unit of fossil energy needed to produce biodiesel, the return is 4.5 units of energy. This energy-in, energy-out ratio is “energy balance.”

Biodiesel made from soybean oil has a high energy balance because the main energy source used to grow soybeans is solar.

“This gives Americans even more reason to put their faith in the environmental and societal benefits of biodiesel,” said Joe Jobe, CEO of the National Biodiesel Board. “The Environmental Protection Agency should take this into account when considering biodiesel’s greenhouse gas reductions,” he said.

Jobe was referring to EPA’s proposed rule to implement the expanded Renewable Fuels Standard (RFS2). EPA used 2005 baseline numbers for petroleum and biodiesel to project carbon impact 22 years in the future. That stacks the deck in favor of petroleum.

“In its rulemaking, EPA should recognize that biodiesel production is growing more efficient, while oil exploration and drilling becomes more intensive each day,” Jobe said.

Biodiesel is also a source of valuable co-products, like glycerin, for which EPA did not credit biodiesel. The USDA/Idaho study finds key drivers that continue to make biodiesel an efficient fuel choice:

- New seed varieties and management practices are upping soybean yields.
- Farmers have minimized cultivation of the soil. These reduced tillage practices have cut how much fuel they need to grow soybeans.

- Modern soybean varieties have reduced the need for pesticides.
- Today's soybean processing and biodiesel plants are more energy efficient.

“Our research shows continued progress in the renewability of biodiesel production,” said University of Idaho Department of Biological and Agricultural Engineering Assistant Professor Dev Shrestha. “Farmers, soybean processors and biodiesel producers are getting even better at using non-fossil resources and adopting other efficiencies that are leading to greater energy returns.”

The joint study is based on data sources from USDA and the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) Model used by the U.S. Department of Energy and others. The Department of Energy's National Renewable Energy Lab and USDA produced the first major life cycle study for biodiesel in 1998. It found a 3.2 energy balance for biodiesel, while petroleum diesel yielded only 0.84 units of energy per unit of fossil energy consumed.

Both the 1998 and new study are based on biodiesel production from soybean oil, the largest share of the biodiesel market. Other abundant sources used for biodiesel included recycled cooking oil, fats and other plant oils, such as canola oil. Biodiesel is a clean-burning renewable fuel for diesel engines. It improves air quality and creates green-collar jobs. The NBB is the national trade association of the industry.

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For more details on biodiesel and NBB's formal comments to EPA, visit www.biodiesel.org. For a complete copy of the report go to <http://www.usda.gov/oce/energy> and click on Papers and Reports.

