Seventy Tons of CO2 Saved by Using Biodiesel

Freight carriers can now easily demonstrate their lifecycle carbon dioxide (CO2) reduction by using biodiesel fuel. The National Biodiesel Board has teamed up on an over-the-road demonstration with Chicago-based Indigenous Energy, LLC, developers of emissions tracking systems, and Los Angeles based States Logistics, a fleet and logistics company using clean technology.

The six-month demonstration culminated in a report showing States Logistics' CO2 reduction of 72.9 tons compared to straight petroleum diesel. Truck fleets can use this report as a marketing tool both for the fleet and the fleet's customers. Eventually, this quantified data may be used to sell carbon offsets on the voluntary markets, but today they clearly show States Logistics' efforts towards reducing CO2 and other pollutants. "We were really pleased to see the quantified reduction of CO2 and other pollutants," said Ryan Donovan, VP of operations and business development of States Logistics. "This is something that we can take to our customers, like Clif Bar & Company, and they can show their customers. We all benefit from having this information available to show the efforts being made to reduce carbon footprint throughout the supply chain."

7 States Logistics ran seven trucks: four on soy-based B5 (5% biodiesel and 95% petroleum diesel) and three on B99 (99% biodiesel and 1% petroleum diesel). The B99 trucks (three-axle International model 8600) ran 48,198 miles and consumed 8,770 gallons over the six month period. The equivalent straight petroleum diesel output would have been 89.9 tons, but with B99, the output was 19.8 tons for a savings of 70.1 tons. The B5 fleet (two-axle flat bed) traveled 61,433 miles and consumed 7,090 gallons of B5. Equivalent petroleum CO2 output would have been 71.4, with B5 the output was reduced to 68.6 for 2.8 tons of CO2 reduction. "Indigenous Energy has developed software that calculates CO2 output based on percentages determined by the U.S. Department of Energy and the U.S. Department of Agriculture," said Peter Probst, president and director of research & development, Indigenous Energy. "The software provides an automated way to feed in the type of biodiesel feedstock, percentage of biodiesel, miles driven, and several other factors, and then output a report directly to the fleet."

In addition to CO2 reduction, an estimated 119 pounds of particulate matter were eliminated from the exhaust during the six month period. Carbon monoxide (CO) was reduced by over 500 pounds, hydrocarbons (HC) by over 50 pounds, and sulfur dioxide (SO2) by close to 40 pounds.
This information is valuable to any fleet using biodiesel," said Tom Verry, director of outreach and Development for NBB. "We picture eventually offering this as a value-add report for BioTrucker Fuel Card holders."

The National Biodiesel Board along with the U.S. Department of Energy, National Renewable Energy Lab, the U.S. Department of Agriculture, and many other organizations has accumulated volumes of biodiesel emissions reduction data, which can be found on http://www.biodiesel.org Biodiesel has been shown to have at least a 1:3.2 ratio of energy gained to energy used to produce it, meaning for every unit of fossil energy needed to produce biodiesel, return is 3.2 units of energy, according to a 1998 study conducted by the U.S. Department of Energy and the U.S. Department of Agriculture (USDA). That number is expected to climb even higher since technology has improved vastly. The same study showed that soy biodiesel reduces net CO2 emissions by 78 percent compared to petroleum diesel.
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