

Environment-Friendly Ethanol Debuts at Berkeley Lab

BY RON KOLB

With the addition of a 4,000-gallon fuel tank in the motor pool, Berkeley Lab last month became the first ethanol dispensing station in Northern California. This cleaner-burning, high-octane, environmentally-friendly alternative to gasoline will soon power 60 vehicles in the Laboratory's onsite pool, the largest ethanol-powered fleet in the state.

"By the end of this year, our flex-fuel fleet — those that are capable of using unleaded fuel and/or ethanol 85 — will grow to about 75," said Don Prestella, the Lab's fleet supervisor. "It is our goal to run all of them exclusively on ethanol." The total fleet numbers around 250 vehicles.

"E-85" is a blend of 85 percent ethanol, a renewable biofuel called ethyl alcohol made from grain like corn, and 15 percent gasoline. Converting grain to ethanol helps offset carbon emissions from fossil fuels, and vehicles that use it produce 25 percent less carbon monoxide and nitrogen oxide emissions.

Berkeley Lab has become one of about 150 E-85 fueling stations now in operation in more than 20 states. The transition means that the Laboratory will be able to meet its alternative-fuel target for reduced air emissions established in 1999 by executive order for all federal facilities.

This might seem like a drop in the fuel bucket, but the trend toward such alternatives is up. Just over 5



Don Prestella is fueling one of the Lab vehicles with E-85.

million acres of corn are currently used to produce ethanol each year, and experts see that doubling in the next few years. More than 3 million flexible fuel cars are on the roads today. "Within the next five years, [ethanol] will be everywhere," Prestella predicts.

Ethanol is the most widely used alternative fuel. Berkeley Lab gets its supply from a producer in Idaho, according to Prestella.

The renewable fuels association also notes that ethanol contains 35 percent oxygen, and adding oxygen to fuel results in more complete fuel combustion, thus reducing tailpipe emissions. Ethanol also displaces the use of toxic gasoline components

such as benzene — and it is non-toxic, water soluble, and biodegradable. It reduces greenhouse gas emissions (compared to conventional gasoline) by 12 to 19 percent, tailpipe carbon monoxide by up to 30 percent, and exhaust VOC emissions by 12 percent.

Much of the Laboratory's vehicle conversion was made possible by an \$83,000 grant from the Department of Energy. A new vapor recovery system on the Ethanol storage tank — the first in California — has been approved for three-year testing by the state Air Resources Board.

The Lab also uses bio-diesel in all of its diesel vehicles, including buses.

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