

Keys looking for right biofuel blend

Biodiesel production could be ramped up, experts say

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A Keys-based, small-scale biodiesel plant could supply consumers, businesses and government with a competitive and desirable product that would be a big step forward in greening the Keys.

Key West High School physics teacher Josh Clearman estimates that based on available waste oil in Key West, 100,000 gallons of pure biodiesel could be produced; he estimates 20,000 gallons could be produced from waste oil in the Marathon area.

"We could have our own plant in five years," said Alison Higgins, president of local environmental nonprofit Green Living & Energy Education.

Clearman has championed the incorporation of alternative fuel curriculum into the science department at Key West High. He and a class of honors students built and operate an 80-gallon biodiesel processor.

Biodiesel can be produced from different source materials. Waste oil — the stuff stored in locked collection boxes behind restaurants — can be refined then undergo a chemical process that converts it into biodiesel. Or, plant material, often feedstock, can be harvested and used to manufacture biodiesel.

The pure biodiesel can be used as is or blended in a variety of percentages with petroleum diesel for use in any diesel engine.

Although biodiesel is not yet available on an individual retail level in the Monroe County, several fleets have integrated a biodiesel blend, including the city of Key West and the Florida Keys Electric Cooperative.

Localized biodiesel production has proved successful in other markets.

"The demand for biodiesel is infinite," said Rob del Bueno, program manager for the Southern Alliance of Clean Energy's Refuel Biodiesel Program. However, production of biodiesel from feedstock such as corn or soybeans is controlled by national and international commodities pricing. "You have to be collecting your own feedstock if you want to break out of the commodity market."

Del Bueno pegged vertical integration as the only viable option for small-scale biodiesel production, like the municipal production taking place on the mainland. If the individuals producing biodiesel are able to collect waste oil or feedstock from a local, dedicated source, their product is not subject to shifts in the global commodities market.

The Refuel Biodiesel Program provides a working model for this idea. Del Bueno and his co-workers collect waste oil (used cooking oil) from Emory University's hospitals and campus in Atlanta. After converting the waste oil into biodiesel, Refuel sells the product to Emory for use in the bus fleet and operates a retail filling station.

The Keyswide Sustain-Ability Project, an initiative of Florida Keys GLEE hosted a biodiesel summit last month, at Florida Keys Community College on Stock Island.

The purpose of the summit was to provide potential users with the technical information necessary to pursue biodiesel use and to bring together individuals and companies interested in seeing biodiesel production and distribution come to the Florida Keys, said Higgins.

"We host a project then sit back to see if it was effective." She went on to say that the biodiesel summit forged "a lot of good connections."

Florida has two municipal biodiesel production facilities in Duval and St. John's counties. Lee County has nine businesses competing for the opportunity to construct a municipal biodiesel plant there.

There are approximately 12 retail biodiesel distributors in Florida, the majority of which are located in Panhandle.

"It'd be great to get it into marinas," Higgins said. The marketing potential of ecotours conducted on eco-friendly, biodiesel-consuming watercraft would provide an economic boon as well as safeguard the Keys' waters, she said.

Florida Keys Community College has successfully converted a teaching vessel, the Salad Sailor, to run off of biofuel.

Higgins said that the first hurdle in larger-scale biodiesel use is education. "People are afraid of putting something new in their engine."

Biodiesel acts as a natural solvent and will clean deposits out of an engine resulting initially in the need for frequent fuel filter changes. If proper maintenance is not performed, the new biodiesel user will have a poor experience, Higgins said.

John Sanchez, representative of Blaylock Oil, echoed Higgins: "We want to educate the non-informed user."

Homestead-based Blaylock Oil, supplies the Florida Keys with between 600,000 and 1 million gallons of diesel every month depending on the time of year. Recently, Blaylock Oil dedicated a storage tank to biodiesel brought in from the Midwest.