

California nonprofit looking to turn plastic pollution into fuel

By Amy E. West, Santa Cruz Sentinel

Plying through the infamous “Garbage Patch” in the North Pacific, a solar-powered catamaran gobbles up fishing nets, plastic bags and Styrofoam blocks, and then shoves them into a high-temperature cooker to convert the litter to fuel. This fuel propels the boat farther to devour more plastic – until every large piece has been scooped up.

It sounds like an environmentalist’s dream. But it’s the ambitious mission of the Santa Cruz nonprofit Clean Oceans Project, which six months ago teamed up with a Japanese manufacturer and a San Jose distributor, E-N-ergy, to bring plastic-to-fuel technology to the Monterey Bay.

The project was founded three years ago by ocean conservationists Nick Drobac and Jim “Homer” Holm, who hope to convince investors and donors of the feasibility of cleaning up plastic pollution and creating fuel at the same time. The proposed solution addresses one of the world’s biggest environmental problems: A non-biodegradable material that clogs landfills and waterways, strangles wildlife and contaminates food sources.

“This problem is enormous,” Drobac said, “and it grows every single day.”

Drobac and Holm say they are sold on technology from Blest Co. Ltd. that uses a process called pyrolysis. Using a 110-pound Blest demonstration model, the oceans project recently illustrated how a few pounds of roadside plastic litter can be fed into the pressurized oxygen-free oven and heated to 800

degrees Fahrenheit. This liquefies the plastic, converts it to a gas, which then condenses to form a crude oil mixture of gasoline, diesel, kerosene and heavy oil.

The components can be further refined to road fuels or used directly in boilers as heating oil, in generators, or some diesel vehicles that already use biodiesel, said E-N-ergy's Jackie Ayzenberg. The end products consist of water vapor, inert char – which can be reused as fuel – and negligible amounts of carbon dioxide. On the smaller models, “the amount of carbon dioxide is less than one adult breathing,” said Kiyoshi Nakajima, creator of the Blest machine.

Various plastic resin types produce differing amounts of fuel. For instance, a plastic water bottle is not a good fuel source, but Styrofoam packaging is. Plastic weighing as much as a gallon of milk – roughly seven to 10 pounds – generates a gallon of fuel.

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