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New Partnership Explores Biomass as a Clean Fuel Source

Humboldt State University, Renewable Fuel Technologies, and Schatz Lab collaboration shows promise for forest renewal, clean energy

Monday, June 13, 2011: Humboldt, CA and San Mateo, CA- Renewable Fuel Technologies and the Schatz Energy Research Center (SERC) today announced a research partnership. Together with Humboldt State University's Department of Forestry they will study torrefaction – a heat process that removes water and breaks down forest waste, producing a dry material that burns cleanly.

The research partners' ultimate goal is to develop a renewable replacement for coal. RFT has made available its demonstration-scale, mobile torrefaction prototype for research, experiments, and evaluations.

Mobile torrefaction holds great promise in converting woody biomass to clean fuel: the greatest cost to industry has been transporting it from the forest source to a conversion site. Fuel, equipment and logistics costs have, until now, greatly reduced biomass' commercial viability.

Schatz Energy Research Center

Internationally recognized in the renewable energy field, SERC's science and engineering experts have begun testing the BioCoal processor. SERC will test a variety of different biomasses to see how they respond to variations in the torrefaction process. They will design and run experiments to measure the energy and mass balances, evaluate the torrefaction gases and provide their analysis, with the objective of establishing the design criteria for the development of an energy self-sufficient mobile BioCoal processor.

“For mobile torrefaction to be viable commercially, it must be able to utilize the heat from the torrefaction gases to generate all the heat and electricity necessary for the processor to be energy self-sufficient,” said Peter Lehman, Director Schatz Energy Research Center. “SERC's researchers will provide the detailed analysis to optimize RFT's torrefaction process and develop an energy self-sufficient processor.”

Humboldt State Department of Forestry and Wild land Resources

Utilizing its expertise in integrated forest harvesting operations, the department will create a full-deployment methodology for the mobile processors, including logistics, operational model and economic analysis. The goal is to evaluate the deployment methodology in working demonstration projects in Northern California in conjunction with local forest products companies.

“The expense of gathering, transporting and co-firing biomass has limited its economical viability,” said Han-Sup Han, Professor of Forest Operations. “Mobile processing would enable remotely located forest biomass to be used as a large source of cost-effective renewable power generation fuel.”

Renewable energy research studies conducted by SERC and Humboldt State have shown that biomass based renewable energy produces a larger economic impact on local communities, generating more jobs and income than alternative renewable energy options.

“Mobile torrefaction can transform remote forest woody debris into a new and significant new source of renewable fuel,” said Mark Wechsler, Renewable Fuel Technologies CEO. “Humboldt County, with its focus on sustainability; the Schatz Lab with its history of innovation; and Humboldt State’s forestry expertise provide the perfect combination to develop the engineering processes and forest management practices to transform mobile torrefaction technology into economical production systems.”

Humboldt State University

Humboldt State’s three academic colleges Arts, Humanities and Social Science, Professional Studies and Natural Resources and Sciences provide 47 undergraduate and 12 graduate programs.

Renewable Fuel Technologies

RFT develops torrefaction technology that enables compact, energy self-sufficient mobile torrefaction processors which convert woody biomass into BioCoal, a clean renewable fuel that transports, stores and burns like coal.

Schatz Energy Research Center

Schatz researches and develops technology to make renewable energy more reliable and affordable including technology demonstration, feasibility studies, project development, energy systems analysis and energy planning studies.