

Item #15
October 6, 2010
Energy Commission Business Meeting

WEST YOST ASSOCIATES

**Grant Agreement
for
Wastewater Algae Feasibility Study**

Summary

West Yost Associates will conduct a study to determine the economic feasibility of growing algal species in open wastewater ponds to produce lipids that can be converted to biodiesel. The project will take place at the Stockton Regional Wastewater Control Facility (RWCF) ponds and constructed wetlands in San Joaquin County.

Preliminary studies show that the ponds can support fast-growing algal species with high lipid content. This site-specific study will determine the types of algae that grow seasonally and numerous other technical issues associated with the cultivation of algae in open ponds. The study will also explore how lipid production can be enhanced through techniques developed by partner AlgaXperts. The study will be conducted over a 10-month period.

If this project proves to be economically feasible, the RWCF has the potential to produce approximately 6 million gallons of B100 (100 percent biodiesel) per year. The oil from this project will be sold to Community Fuels, an existing local biofuels producer, which has the capacity to produce 20 million gallons a year.

The Energy Commission is providing \$50,709 in Alternative and Renewable Fuel and Vehicle Transportation program funds and the project team will provide \$50,709 match funding.

Benefits

This project has potential to show that lipids for biodiesel can be produced at wastewater treatment plants at low cost. If successful, wastewater treatment plants would realize a new source of revenue, create a major stimulus for the local economy, remove algae and associated nutrient loads from wastewater, improve the quality of water releases, and reduce treatment costs for effluent discharged to the San Joaquin River.

Algae-derived biodiesel greenhouse gas benefits may be comparable to biodiesel from waste grease. Algae-derived biodiesel would not generate the indirect land use change emissions associated with biodiesel produced from soybeans.

Participants

West Yost Associates is a Davis, California-based engineering firm focused on water, wastewater, and storm water engineering projects.

AlgaXperts is a Madison, Wisconsin, algal analysis and consulting company that provides scientific, economic, and engineering services to federal, state, and local governments, businesses, investors, and technology developers.

Community Fuels is a Port of Stockton, California, producer of premium biodiesel. The project will take place at the Stockton Regional Wastewater Control Facility.