

**Item #12**  
**May 18, 2011**  
**Energy Commission Business Meeting**

**Solazyme, Inc.**

**Grant Agreement ARV-10-047**  
**for**  
**Development of Pilot Production Plant for**  
**Soladiesel RD<sup>®</sup> Utilizing California Feedstocks**

**Summary**

Solazyme, Inc. proposes to design and build a pilot-scale algae oil production facility in south San Francisco. The facility will produce 1000 gallons of oil in heterotrophic fermentation vessels, similar to tanks used to produce ethanol. Proprietary innovative strains of algae will consume sugars from sugarbeets grown in the Imperial Valley to produce renewable oil. Chevron will refine the renewable oil into 50 gallons of Solazyme's Soladiesel RD<sup>®</sup>, which Ford Motor Company will test in diesel vehicles. The fuel will be fully compatible with existing infrastructure and factory-standard diesel engines.

This project will improve production of algae-based renewable diesel and lower costs by:

- Optimizing the fermentation parameters at pilot-scale to attain the productivity and carbon yield needed for commercial operation
- Optimizing the oil recovery parameters of dry algal biomass for commercial operation
- Designing the fermentation infrastructure for commercial operation

The goal of this project is to demonstrate that renewable diesel can be produced at commercial scale for a cost ranging from \$1.45 to \$2.75 per gallon, depending on type of feedstock, plant location, and financing structure.

Solazyme submitted this proposal in response to PON-09-604, Biofuel Production Plants. Solazyme is requesting \$1,472,638 in Alternative and Renewable Fuel and Vehicle Transportation program funds with match of \$2,745,486.

**Benefits**

Solazyme's process can use fermentable sugars from many cellulosic feedstocks, including switchgrass, corn stover, waste glycerol, and salt-tolerant sugarbeets. The company's renewable diesel will reduce greenhouse gas emissions by 71 percent compared to petroleum, and they will develop sustainable management practices for

feedstock production in collaboration with the Roundtable on Sustainable Biofuels. This pilot project will create five jobs.

## **Participants**

Solazyme, Inc. is a California algal renewable oil and bioproducts company. The company uses algal biotechnology to renewably produce clean fuels, chemicals, foods, and health science products. Solazyme's advanced and proprietary technology uses algae to produce oils and biomaterials in standard fermentation facilities. Solazyme was founded in 2003. The company is also supported with funds from the American Recovery and Reinvestment Act (ARRA) and private investors.

Solazyme's partners for this project are Chevron Corporation and Ford Motor Company.

## **Project Implementation Schedule**

- Design and construct the pilot plant within 12 months after project start date
- Produce oil within 17 months after plant construction
- Produce renewable diesel within 20 months after plant construction
- Test the diesel in vehicles within 24 months after plant construction

## **CEQA**

The Chief Counsel's Office has reviewed this project to determine what level of environmental review is necessary under the California Environmental Quality Act (CEQA) and recommends including a finding that the project is categorically exempt from further environmental review (see attached draft Notice of Exemption).