

**FOR IMMEDIATE RELEASE**

February 24, 2017

## **FACT SHEET**

### **HAWAII'S LARGEST BIOFUEL CROP PROJECT**

*Another sustainable, renewable, community-based project by Pacific Biodiesel*

#### **About This Project**

- Pacific Biodiesel has made a long-term commitment to farming nearly 265 acres for a period of at least 5 to 10 years on Maui, starting with this site:
  - 115-acre crop site located at corner of Honoapiilani Hwy and Kuihelani Hwy in Maui's central valley
  - Largest biofuel crop project in the state of Hawaii
  - Only biofuel farming operation in the state running on 100% biodiesel using no fossil fuel
- Land owned by Waiale 905 Partners, LLC.
- Pacific Biodiesel has transferred all of its farming equipment to Maui and is privately funding this operation, doing what it can with finite financial resources in an uncertain economic climate with waning federal support of renewable energy. Although this project does not yet have any state or federal funding, with additional investment Pacific Biodiesel could move faster toward farming hundreds of acres to innovate and experiment with oil crops to contribute to food, livestock feed and renewable fuel for our state.
- This is a sustainable, zero-waste project that will ultimately produce vegetable cooking oil for restaurants, animal feed, the nation's highest quality biodiesel as a renewable fuel, and soil amendments and fertilizers (made from by-products of the production of biodiesel) that will go back to the farm.

#### **Planned Farming Operation**

- The company plans to grow combine-harvested oil seed crops that may include but are not limited to:
  - Sunflower
  - Safflower
  - Camelina (mustard family)
  - Industrial hemp
  - Soybeans (non-GMO) as a cover crop, for protein
- Additional crop types:
  - Macadamia nut trees and kukui nut trees, for windbreaks
  - Clover as a cover crop to minimize weeds and fix nitrogen.
- Initial crop: Sunflowers
  - Blessing and planting: February 2017; first harvest: June 2017
  - Expected yield: 100+ gallons of oil per acre per harvest; up to 3 harvests per year possible
- Pacific Biodiesel will not plant GMO crops and it does not plan to use pesticides or herbicides.
- The company will use compost as a natural fertilizer from its partner, Maui EKO Systems.
- Co-products made during the company's production of biodiesel may be used on the farm, including glycerin as a nutrient for soil amendment and potassium sulfate as a fertilizer.
- Harvested oil seeds will be processed at Pacific Biodiesel's refinery on the Big Island.
- Pacific Biodiesel has demonstrated that farming for "food, feed and fuel" is an important integrative approach required to make the overall economic model work. It entails targeting the triple bottom line – environmental, economic and social benefits to the state. The company will continually research and identify the optimum solution, not just one that produces the most biofuel. And it may choose some crops with lower oil yields that are more advantageous because of the by-products, soil compatibility and their ability to sustain jobs.

(continued)

## **PACIFIC BIODIESEL**

### **Hawaii's Largest Biofuel Crop Project**

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- Pacific Biodiesel is planting sunflowers as its first biofuel crop on Maui, applying the knowledge learned from its past experience and partnership with the U.S. military as part of the Hawaii Military Biofuels Crop Program that demonstrated the planting, growing and processing of biodiesel feedstocks on Oahu and Hawaii Island. This research began in 2010 and studied several crops grown on up to 10-acre plots on those islands.
  - During the first research phase, Pacific Biodiesel successfully demonstrated the feasibility of growing a variety of biofuel crops on Oahu in small, 1-acre plots.
  - The second phase took place on Hawaii Island where additional plots were planted and studied, demonstrating a yield of “100 days from soil to oil.”
  - This third phase on Maui will study 100-acre plots and determine what oil crops are suitable for Maui's central valley.

#### **Why Biofuel Crops?**

- Biofuel crops provide a solution for energy security and energy storage while they sequester carbon from the atmosphere.
- With the instability of petroleum supply and prices and the burgeoning global environmental threats caused by fossil fuels, biofuel crops represent a sustainable, community-based “agriculture and renewable energy” solution that utilizes local resources, creates local green jobs, and supplies fuel directly to the local community.
- Benefits for Hawaii specifically:
  - Renewable Energy – Helps to increase Hawaii's energy security and energy storage, reduce reliance on fossil fuel, and support the state in achieving its 100% renewable energy mandate by 2045.
  - Jobs – Saves and increases living wage jobs by commercializing Pacific Biodiesel Agriculture Operations on Maui and Hawaii Island.
  - Keeps Maui's ag lands in agriculture – utilizes former sugar cane fields in Maui's central valley, preserving these agriculture lands sustainably while contributing to food and energy security.

#### **An “Annual Project Yield” Illustration**

With the company's zero-waste and integrated “agriculture and energy” production model, total potential project yield is described below:

- During processing of harvested sunflower seeds:
  - 15 Lbs. of seeds = 1 gallon of sunflower oil + 7 Lb. of meal for livestock feed
- During production of biodiesel:
  - 1 gallon of virgin sunflower oil produces .95 gallon of biodiesel
  - 1 gallon of used sunflower cooking oil can be recycled to make .93 gallon of biodiesel
  - 1 gallon of biodiesel yields 1 Lb. of glycerin and ¼ Lb. of potassium sulfate
- An example of an annual yield:
  - 115 acres x 100 gallon yield per acre = 11,500 gallons of sunflower oil per harvest
  - 11,500 gallons x 3 harvests per year = 34,500 gallons of sunflower oil per year
  - 34,500 gallons of sunflower oil annually =
    - 32,775 gallons of biodiesel
    - 120 tons of meal for livestock feed
    - 17 tons of glycerin for soil amendment
    - 4 tons of potassium sulfate for fertilizer
  - 32,775 gallons of biodiesel annually:
    - Fuels 109 passenger vehicles or 4 commercial fleet vehicles (trucks and buses)
    - Eliminates 32,775 gallons of petroleum diesel that prevents 295 tons of harmful carbon dioxide emissions from entering the atmosphere