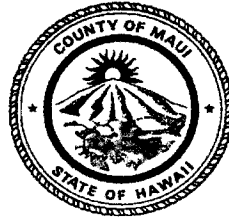


ALAN M. ARAKAWA
Mayor
STEWART STANT
Director
MICHAEL M. MIYAMOTO
Deputy Director



MICHAEL P. RATTE
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ERIC NAKAGAWA, P.E.
Wastewater Reclamation Division

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**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

October 7, 2016

Honorable Alan M. Arakawa
Mayor, County of Maui
200 South High Street
Wailuku, Hawaii 96793

APPROVED FOR TRANSMITTAL

Alan Arakawa 10/11/16

Mayor Date

For Transmittal to:

Honorable Elle Cochran
Chair, Infrastructure and Environmental Management Committee
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

Dear Chair Cochran:

SUBJECT: AUTHORIZING COUNTY TO ENTER INTO A SITE LEASE RELATED TO AN ELECTRICITY GENERATING FACILITY AT WAILUKU-KAHULUI WASTEWATER RECLAMATION FACILITY (IEM-68)

The County is in receipt of the above Infrastructure and Environmental Management (IEM) Committee requested information dated September 27, 2016. Your request and the corresponding answer is provided below by the Department of Environmental Management (DEM).

1. **Is the proposed agreement with Anaergia Services, LLC or SPE, LLC? Please explain.**

The proposed agreement is with Maui All Natural Alternative DBA MANA LLC., a subsidiary of Anaergia Services.

2. **How will the proposed agreement serve the best interests of the County? Please explain.**

RECEIVED AT DEM MEETING ON 6/19/18
Committee Chair

The project has several benefits to the County of Maui. The first benefit will be that we are moving towards the goal of using 100% renewable fuels. The second benefit is that the biofuels feedstock will be grown on 500 acres of lost sugar cane lands, keeping them green and productive, and serving as a model for the rest of the State. Along with this come the local jobs to manage the fields and equipment. The third benefit is to stabilize the electricity costs to the County. Today, oil is cheap but just a few years ago, fuel prices were almost double of what they are today. The fourth benefit is to stabilize the cost of handling the sludge coming from the County wastewater systems. The end product from the drying process will be a Class A commodity that can be used either as landfill cover or fertilizer.

3. In the correspondence, it is stated: “The Power Purchase Agreement includes a fixed energy price escalation.”

a. Provide details on the “fixed energy price escalation.” What are the terms over the 20-year agreement?

The annual escalation rate is 2.2%.

b. What are the projected annual costs to the County, including but not limited to costs associated with installation, operation, maintenance, repair, improvement and replacement of the system?

All costs associated with the electricity generating system and sludge drying system are the responsibility of the Contractor. The only costs to the County are the costs of electricity and the cost to dry the sludge.

c. What is the projected cost savings to the County as a result of using system-generated electricity to run the facility and the use of dried bio-solids that may be used as fertilizer at the County facilities or landfill cover?

The determination of the cost savings to the County with regards to electricity depends on the future prices of crude oil. As for the cost savings via the use of the dried sludge, landfill cover is currently \$8 per ton delivered. Again, how much will the price increase in the future is unknown. As for the use as a fertilizer, we do not have that information from other departments available at this time.

4. Are there similar projects in other counties? Were they successful or not? What lessons were learned that can be applied to this one?

There are projects on the mainland and other parts of the world that have similar and successful projects. City and County of Honolulu has a sludge drying project using digester gas similar to this project and is successful.

5. The Kahului-Wailuku Reclamation Facility is located in a tsunami evacuation

zone. There have been discussions over the years to relocate the facility outside of the tsunami zone.

a. How and why was the Kahului-Wailuku Reclamation Facility site chosen?

This facility does not have an alternative energy facility. The location is close to where biocrops can be produced and since all sludge from Kihei and Lahaina is disposed of at the Central Maui Landfill, this was the closest and central facility.

b. What is the status regarding plans to relocate the facility?

Given the high cost of over \$200 million to relocate the facility, there are no active plans at this time. We are in the preliminary stages of scoping a wastewater facility close to proposed new Central Maui residential developments away from the shoreline.

c. Should improvements be made to the current facility in light of its location within a tsunami zone?

Improvements have been completed to reinforce the facility. The latest being the buried shoreline revetment. In previous years scour protection for the facility was completed.

6. What is the expected timeframe for initiation of this project?

The project was preliminarily awarded in June of this year. The project will proceed like all other projects in that permits and approvals are in the process. Should the lease be granted, then the Power Purchase Agreement will be finalized and then environmental assessment will begin along with design.

7. The correspondence states: "Sludge from the Kihei and Lahaina facilities also may be transported to the sludge dryer at the Kahului facility."

a. How much sludge is anticipated to be transported from the Kihei and Lahaina facilities? How often will this occur?

Based on historical volumes, it is estimated that 8,000 tons per year will be transported from each facility. The schedule of transporting the sludge will not change so there will be daily transport to the facility. Historically, one to two loads per day from each facility.

b. Who will be responsible for transporting it to the Kahului facility?

Currently County Wastewater Reclamation staff transport all sludge from County facilities and will continue to be County staff.

c. How much will this cost the County?

The cost to transport the sludge will not change as we are only changing the destination of the sludge. Instead of driving to the Central Maui Landfill, the trucks will come to the Kahului facility.

- 8. The correspondence states: “The project includes an anaerobic digester, which will convert energy crops and other alternatives into methane gas, which in turn will be used to fuel a turbine engine that will generate electricity to power the needs of the wastewater facility.”**

Energy Crops

a. Where and what type of crops will be grown?

The specific biocrop will be grown on 500 acres of sugar cane lands. The type of crop is anticipated to be sorghum grass and corn, unless a better biocrop is developed in the future.

b. How will crops be harvested, how frequently, and by whom?

Crops will be harvested using mechanical harvesting equipment over 3-4 growing seasons during the year and by HC&S.

Use of Methane Gas

a. The use of methane is concerning. Have you considered the impacts of methane, its viability, and whether other types of gas could be used?

The selection of Biogas (Methane is the primary component) was chosen for its renewable, safety, cost and availability as a Maui produced fuel that would displace foreign imported fuel. Biogas production from anaerobic digestion is a very established and widely used green and safe firm renewable fuel that is used and permitted throughout the US including 2,100 sites and over 10,000 sites in Europe. Through alliances with the DOE, EPA and USDA, the American Biogas Council had conducted industry assessments projecting growth in the industry to produce the equivalent renewable energy to provide power for 3.5 million homes and reduced the dependency of fossil fuels by removing the equivalent of 11 million passengers vehicles from American Roadways.

b. How will air quality permitting requirements be met?

Anaergia has successfully permitted Biogas projects in the US including California which is in in the same EPA Region 9 as

Hawaii and follows the same Federal / State guidelines for air permitting.

Electricity Generated

- a. **How many kilowatts of electricity are expected to be generated from this project? How will the generated electricity be used, other than powering the needs of the wastewater facility?**

The system is being designed to power the entire facility. At a minimum, 4,500 MWh will be purchased for the facility. Additional electricity will be used in the sludge drying system. The wastewater facility has priority over all power generated.

- b. **What is the responsibility of Maui Electric Company as a back-up should issues arise and the system become inoperable?**

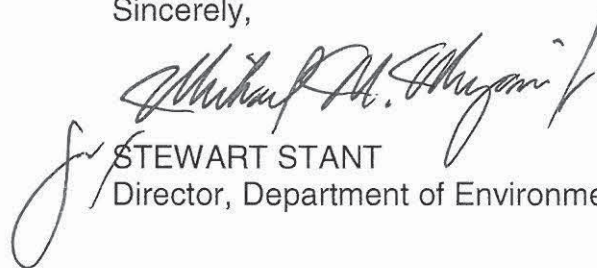
The system is being designed to first use the existing back-up generator and if the outage is expected to last beyond a day, Maui Electric Company will transition into providing power for the facility.

- c. **What are the costs involved to keep Maui Electric Company as a system back-up and who will be responsible for those costs?**

Maui Electric will be the second level back-up power as the on-site back-up generator will be the primary back-up power.

Thank you for these questions and we look forward to discussing the subject lease.

Sincerely,



STEWART STANT
Director, Department of Environmental Management