



SHARON M. SUZUKI
President

July 19, 2016

Mr. Daniel E. Orodener
Executive Officer
Land Use Commission
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804-2359

LAND USE COMMISSION
STATE OF HAWAII
2016 JUL 27 P 1:31

Dear Mr. Orodener:

Re: Petition for Land Use Commission District Boundary Amendment for Property situated at Wailuku and Makawao Districts, Maui, Hawaii; Maui Electric Company, Limited; LUC Docket No. A97-722; TMK 3-8-03:23 and 24

Enclosed is the Eighteenth Annual Report of Maui Electric Company, Limited (original and one copy).

We would appreciate receiving a file stamped copy of the above. Enclosed is a stamped, self-addressed envelope for this purpose.

Thank you for your consideration and assistance in this matter.

Sincerely yours,

Enclosures

cc. Leo R. Asuncion, Jr. - Office of State Planning (Director)
William Spence - County of Maui Planning Department (Director)
Daniel E. Orodener - Land Use Commission (Executive Officer), pdf version

EIGHTEENTH ANNUAL REPORT OF MAUI ELECTRIC COMPANY, LIMITED

and

CERTIFICATE OF SERVICE

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of)
))
Maui Electric Company, Limited, a)
Hawaii corporation)
))
To Amend the Agricultural Land Use)
District Boundary into the Urban)
Land Use District for Approximately)
65.7 acres of Land at Wailuku and)
Makawao Districts, Island of Maui,)
State of Hawaii, Tax Map Key No.)
3-8-03:23 and 24)
_____)

Docket No. A97-722

2016 JUL 27 P 1:31
LAND USE COMMISSION
STATE OF HAWAII

EIGHTEENTH ANNUAL REPORT OF MAUI ELECTRIC COMPANY

TO THE HONORABLE LAND USE COMMISSION OF THE STATE OF HAWAII:

COMES NOW MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation, Petitioner herein, and pursuant to Condition No. 14 of the Findings of Fact, Conclusion of Law, and Decision and Order issued on June 22, 1998, hereby submits to the State Land Use Commission its eighteenth annual report of compliance with the conditions established by said approval as follows:

General Progress on the Project from June 2015 to May 2016:

On May 5, 2016 Maui Electric submitted to the Hawaii Public Utilities Commission (“Commission”) a request to begin the process of acquiring approximately 40 MW of new firm generation for Maui Electric to ensure reliability and support an increased use of renewable resources. As stated in the Company’s Power Supply Improvement Plan (“PSIP”) filed on April 1, 2016, this new generation will serve as replacement for the anticipated retirement of Kahului Power Plant in 2022. The new generation will also help mitigate under-voltage issues in the South Maui area, where the community has expressed concerns about proposed upgrades to the overhead transmission lines. The process of adding new firm generation will take several years, so prompt approval by the Commission to start the process is necessary.

To date, Maui Electric has been able to defer the addition of firm generation on Maui and subsequently has leased all but approximately 1.5 acres of the Waena property back to Hawaiian Commercial & Sugar Company (“HC&S”) on an interim basis, at no rent, for sugarcane cultivation.

General Progress of Renewable or Research & Development Projects:

1. Kaheawa Wind Power (“KWP”):
 - a. This 30 MW wind farm (“KWP-I”) is on-line and has been supplying electric power to Maui Electric since 2006.
 - b. This 21 MW expansion of KWP-I (“KWP-II”) is on-line and has been supplying electric power to Maui Electric since July 2012.
2. Makila Hydro:

This 500 KW hydroelectric plant came on line in September 2006, but has operated intermittently at times due to operational challenges.
3. Auwahi:

This 21 MW wind farm on Ulupalakua Ranch is on-line and has been supplying electric power to Maui Electric since December 2012.

4. Biomass and Biofuels:

- a. Maui Electric and Hawaiian Electric continue to monitor potential use of biofuels in Maui Electric's generating units. In 2007 an initial short-term biodiesel test was successfully completed on several internal combustion engines and a combustion turbine at Ma'alaea Generation Station ("MGS"). In 2011 Maui Electric completed a long-term biodiesel demonstration on its diesel engine generating unit M12, which demonstrated successful utility-scale long-term operation using 100% biodiesel. A project report was submitted to the Commission in January 2012. Maui Electric continues to use biodiesel during start-up and shut-down operations in two of its largest diesel generating units at MGS.
- b. In January 2016 HC&S announced that it is ceasing sugar operations on Maui and consequently terminating the firm Purchase Power Agreement with Maui Electric at or near the end of 2016. HC&S has been providing approximately 5% of the power sold by Maui Electric on Maui, using bagasse (biomass) as its primary fuel source.

5. Hydroelectric/Pumped Storage Hydroelectric ("PSH"):

In June 2012 a decision was made to cease work on the feasibility assessment of a utility-scale pumped storage hydroelectric system on the island of Maui. Three separate economic analyses were performed and all three concluded that pumped storage hydro is not cost-effective at the present time. In its PSIP filed with the Commission on August 26, 2014 as part of Docket No. 2011-0092, Maui Electric addressed PSH considerations in section J titled "Energy Storage for Grid Applications". PSH was also considered and analyzed in the April 1, 2016 PSIP update but was not selected as a resource in the Maui Preferred Plan for the 2016-2045 timeframe. Maui Electric remains open to the development of cost-effective PSH that would benefit its customers.

6. Grid Integration:

- a. JUMP Smart Maui is collaboration between the Japanese Government, the State of Hawaii and various stakeholders including Maui Electric, Maui Economic Development Board, and Hitachi. The project is looking to develop tools to reduce curtailment of excess wind energy through management of electric vehicles. Additionally, the management of load control devices and smart photovoltaic ("PV") systems will be tested to determine the feasibility of improving local power quality within circuits subject to high penetration of PV generation. Vehicle to Grid (V2G) technologies are also being tested with customer participants. The project was launched in the second half of 2013 and was initially scheduled to run through early 2015. Subsequently, the project was extended to March 2017.

- b. Demand Response (“DR”) refers to mechanisms designed to manage customer consumption of electricity to support the reliable operation of the grid. Maui Electric plans to utilize DR to meet capacity and other grid service requirements. In 2015, the Maui Electric conducted a study to assess the feasibility and potential capacity of a customer generator program. The study identified potential DR opportunities at various customer locations. In the regular course of planning, Maui Electric identified a projected reserve capacity shortfall starting in 2017. As one of the solutions to mitigate this deficit, Maui Electric is preparing to submit a request to the Commission to expand the Fast DR Program in an effort to expedite the procurement of capacity DR on Maui. Additionally, by the end of 2016, the Companies (Maui Electric, Hawaiian Electric, and Hawaii Electric Light) plan to file an application to establish a portfolio of DR programs to meet various system requirements.
- c. In partnership with the Hawaii Natural Energy Institute (“HNEI”), Maui Electric is participating in the Maui Advanced Solar Initiative (“MASI”) project. The primary objective of the project is to study the use of smart inverter functionality over a smart grid network, to manage the impact of a high penetration of distributed residential scale PV systems on the electric grid.
- d. In partnership with HNEI, Maui Electric installed a 2MW/397kWh battery on Molokai in June 2016. This purpose of the battery is to help explore how energy storage may be used to address high PV penetration impacts on the system. The State of Health and Site Acceptance Test are being completed at this time. Algorithm and research & development work is still needed to speed up the battery to provide frequency response support. This work is expected to be completed by the end of 2016.

7. Photovoltaic:

- a. New Distributed Energy Resource programs went into effect on October 12, 2015 as part of the Commission’s Decision and Order (“D&O”) No. 33258. Included were two new programs to replace the Net Energy Metering (“NEM”): Customer Grid Supply and Customer Self Supply. Both programs were developed to expand customer options and ensure that their PV systems can be efficiently integrated by being configured to provide grid-supportive benefits.
- b. The NEM program has enabled 10,551 photovoltaic systems at 74.4 MW to be integrated into the grid as of June 30, 2016. Customers already interconnected under NEM will be allowed to continue under this program. Those customers given pre-approval under the NEM program are actively working to interconnect their projects. New applicants now have the options of the Customer Grid Supply or Customer Self Supply programs. Maui Electric continues to be ranked in the top ten nationally for solar integration, by the Smart Electric Power Alliance (SEPA).

- c. Maui Electric's large customers utilize the Standard Interconnection Agreement ("SIA") to interconnect PV and offset their energy use. These customers include the County of Maui's wastewater treatment facilities in Kihei and Lahaina. Customers participating in this program design their PV system to offset their existing load and don't receive credit for energy exported to Maui Electric.
 - d. Feed-in Tariff ("FIT") programs are currently focused on 'shovel ready' projects presently in the FIT Queue and are closed to new applications. On December 5, 2014 the Commission issued D&O no. 32499 in Docket 2013-0194 which approved the Companies' and Independent Observer's Joint Plan for administration of the FIT queues. Pursuant to the Order, projects in the FIT Reserve Queue were removed and milestones were established for the remaining projects in the FIT Active Queue. With the popularity of these interconnection programs, Maui Electric has consistently ranked within the top ten utilities in the nation in watts-per-customer, by the Smart Electric Power Alliance ("SEPA").
8. South Maui Renewable Resources
Maui Electric received D&O no. 33537 from the Commission on February 18, 2016 approving a 2.87 MW solar facility located in South Maui. The anticipated Commercial Operations Date is December 31, 2016.
 9. Ku'ia Solar:
Maui Electric received D&O No. 33541 from the Commission on February 18, 2016 approving a 2.87 MW solar facility located in West Maui. The anticipated Commercial Operations Date is December 31, 2016.
 10. Central Maui Landfill – Waste to Fuel:
The County of Maui has selected Anaergia Inc. to convert waste streams from the Central Maui Landfill into natural gas and refuse derived fuel.
 11. Central Maui Landfill - Wind Turbines:
Maui Electric supported the County's installation of a 26.7 KW wind turbine project at the Central Maui Landfill. The turbine has been commissioned as of October, 2015.
 12. Maui Resource Recovery Facility (*previously known as the Mahinahina Project*):
The Maui Resource Recovery Facility is a proposed agricultural energy project to be located adjacent to the County of Maui's Lahaina Wastewater Reclamation Facility ("LWRF"). The project plan is to grow sorghum as an energy crop using reclaimed water produced at the LWRF. The crops are to be harvested and converted into a methane-rich gas. Maui Electric continues to be interested in working with the County of Maui and developer towards a project that is in the best interest of Maui Electric's customers.

Report on Compliance with Conditions Imposed by the Land Use Commission

The following states whether the conditions in the Land Use Commission approval have been met:

1. Petitioner shall participate in an air quality monitoring program, coordinated with and approved by DOH to monitor air quality impacts attributable to the operations of the Waena Generating Station. Mitigation measures for air quality impacts attributable to the operations of the Waena Generating Station shall be implemented by Petitioner if, based on applicable State and Federal air quality standards, the results of the monitoring program warrant them. Mitigation measures shall be developed in coordination with DOH and implemented by Petitioner.

Petitioner understands its obligation to comply with this condition.

2. Petitioner shall consult with DOH and, if necessary, Petitioner shall participate in a groundwater quality monitoring program in consultation with the county Department of Water and approved by DOH to monitor groundwater quality impacts directly attributable to the operations of the Waena Generating Station. Petitioner shall implement mitigation measures should the results of the monitoring program warrant them based on applicable State and Federal water quality standards. Mitigation measures shall be developed in coordination with DOH and implemented by Petitioner.

Petitioner understands its obligation to comply with this condition.

3. Petitioner shall provide at its own expense, adequate non-potable water source, storage, and transmission facilities and improvements to accommodate the proposed project. The non-potable water improvements shall meet all applicable County, State, and Federal

standards and shall be consistent with the County of Maui adopted water use and development plan.

Petitioner understands its obligation to comply with this condition.

4. Petitioner shall consult with DOH and, if necessary, prepare a wastewater disposal plan subject to review and approval by DOH. Petitioner shall provide at its own expense adequate wastewater treatment, transmission and disposal facilities for wastewater directly attributable to the operations of the Waena Generating Station.

Petitioner understands its obligation to comply with this condition.

5. Petitioner shall establish appropriate systems to contain spills and prevent materials associated with heavy industrial uses attributable to the operations of the Waena Generating Station, such as petroleum products, chemicals or other pollutants, for leaching or draining into above ground or subsurface storm drainage collection areas. Based on applicable State and Federal standards, Petitioner shall use best management practices to minimize non-point source pollution into irrigation ditches. Petitioner shall consult with DOH and County Department of Public Works and Waste Management and obtain any permits required or construct improvements required for storm water discharge on the Property.

Petitioner understands its obligation to comply with this condition.

6. Petitioner shall consult with DOH regarding hazardous waste storage and, if necessary, prepare a hazardous waste storage plan.

Petitioner understands its obligation to comply with this condition.

7. Petitioner shall participate in the funding and construction of local and regional transportation improvements and programs attributable to the operations of the Waena

Generating Station as determined by the State Department of Transportation (DOT) and the County of Maui.

Petitioner understands its obligation to comply with this condition.

8. Petitioner shall coordinate with the surrounding property owner to ensure that the proposed project will not adversely impact the use of cane haul roads and irrigation ditches or adversely impact the continued agricultural operation of adjoining sugar cane cultivation areas.

Petitioner understands its obligation to comply with this condition.

9. Petitioner shall participate in the pro rata funding and construction of adequate civil defense measures as determined by the State of Hawaii and County of Maui civil defense agencies.

Petitioner understands its obligation to comply with this condition.

10. Petitioner shall implement effective soil erosion and dust control measures during and after construction in compliance with the applicable rules and regulations of DOH and the County of Maui.

Petitioner understands its obligation to comply with this condition.

11. Should any human burials or any historic artifacts, such as charcoal deposits, stone platforms, pavings or walls be found, Petitioner shall stop work in the immediate vicinity and contact the State Historic Preservation Division (SHPD). The significance of these finds shall then be determined and approved by the SHPD and, if applicable, an acceptable mitigation plan shall be approved by the SHPD. The SHPD must verify that the fieldwork portion of the mitigation plan has been successfully executed prior to work proceeding in the immediate vicinity of the find. Burials must be treated under specific provisions of Chapter 6E, HRS.

Petitioner understands its obligation to comply with this condition.

12. Petitioner shall develop the Property in substantial compliance with the representations made to the Commission. Failure to so develop the Property may result in reversion of the Property to its former classification, or change to a more appropriate classification.

Petitioner understands its obligations to comply with this condition.

13. Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to development of the Property.

Petitioner understands its obligation to comply with this condition.

14. Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of Planning, and the County of Maui Planning Department in connection with the status of the subject project and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission.

Petitioner understands its obligation to comply with this condition.

Petitioner has filed Annual Reports with the Commission since 1999 and submits this Eighteenth Annual Report in compliance therewith.

15. The Commission may fully or partially release the conditions provided herein as to all or any portion of the Property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.

Petitioner understands the Commission's authority in this condition.

16. Within 7 days of the issuance of the Commission's Decision and Order

for the subject reclassification, Petitioner shall (a) record with the Bureau of Conveyances a statement that the Property is subject to conditions imposed herein by the Commission in the reclassification of the Property, and (b) shall file a copy of such recorded statement with the Commission.

(a) Petitioner has recorded a Notice of Imposition of Conditions by the Land Use Commission pursuant to Commission Rule Section 15-15-92. The notice was dated June 25, 1998, and recorded in the Bureau of Conveyances of the State of Hawaii as Document No. 98-094602.

(b) A copy of the notice was transmitted to the Commission on July 1, 1998.

17. Petitioner shall record the conditions imposed herein by the Commission with the Bureau of Conveyances pursuant to Section 15-15-92 Hawaii Administrative Rules.

Petitioner has recorded a Document Listing Conditions to Reclassification of Land pursuant to Section 15-15-92 of the State of Hawaii Land Use Commission Rules. The document was dated July 23, 1998 and recorded in said Bureau of Conveyances as Document No. 98-112111. A copy of the document was transmitted to the Commission on August 4, 1998.

Conclusion

Efforts to comply with the remaining conditions shall begin when required as part of a permit requirement for construction.

Dated: Kahului, Hawaii, July 19, 2016

MAUI ELECTRIC COMPANY, LIMITED
Petitioner

By: Sharon M. Suzuki
Sharon M. Suzuki
Its President

CERTIFICATION OF SERVICE

I hereby certify that due service of a copy of the within document will be made by depositing the same with the U.S. mail, postage prepaid, within (5) days of the date on this report, addressed to:

LEO ASUNCION, JR.
Acting Director
Office of State Planning
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

BY MAIL

WILLIAM SPENCE
Director
County of Maui Planning Department
2200 Main Street
One Main Plaza Building, Ste 315
Wailuku, Hawaii 96793

BY MAIL

Dated: Kahului, Hawaii, July 19, 2016.



Sharon M. Suzuki
President
MAUI ELECTRIC COMPANY, LIMITED