



SHARON M. SUZUKI  
President

LAND USE COMMISSION  
STATE OF HAWAII

2018 AUG -2 A 8:44

July 27, 2018

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

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 Twentieth 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)  
Michele Chouteau McLean - County of Maui Planning Department (Director)  
Daniel E. Orodener - Land Use Commission (Executive Officer), pdf version

TWENTIETH ANNUAL REPORT OF MAUI ELECTRIC COMPANY, LIMITED

LAND USE COMMISSION  
STATE OF HAWAII

and

2018 AUG -2 A 8:44

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

TWENTIETH 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 twentieth annual report of compliance with the conditions established by said approval as follows:

## General Progress on the Project from June 2017 to May 2018:

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 in April 2016 and updated in December 2016, this new generation will serve as replacement for the anticipated retirement of Kahului Power Plant in the 2022 timeframe. Depending on its location, the new generation may 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. On October 6, 2017, the Commission issued Order No. 34856 opening Docket No. 2017-0352 to receive filings related to the Hawaiian Electric Companies' (Companies) plans to proceed with competitive procurement to acquire firm generation and new renewable generation. In accordance with Order No. 34856, on October 23, 2017, the Companies submitted a Draft Firm Capacity Renewable Dispatchable Generation RFP, Draft Variable Renewable Dispatchable Generation RFP, and respective supporting documentation to the commission for their review. On January 12, 2018, the Commission issued Order No. 35224 "Providing Guidance on the Hawaiian Electric Companies' Proposed Request for Proposals for Dispatchable and Renewable Generation." The Order appoints Independent Observers and advises that further guidance from the Commission and IO regarding the Maui Firm RFP would be provided in the first quarter of 2018. At this time, the Company is waiting for the Commission’s comments and further guidance on the Draft Firm Capacity RFP.

Prior to Hawaiian Commercial & Sugar Company (“HC&S”) terminating their sugarcane operation in December 2016, Maui Electric leased all but approximately 1.5 acres of the Waena property back to HC&S on an interim basis, at no rent, for sugarcane cultivation.

## FEASIBILITY OF ALTERNATE ENERGY SOURCES:

1. Kaheawa Wind Power:  
This 30 MW wind farm is on-line and has been supplying electric power to Maui Electric since June 2006.
2. Kaheawa Wind Power II:  
This 21 MW wind farm is on-line and has been supplying electric power to Maui Electric since July 2012.
3. Makila Hydro:  
This 500 KW hydroelectric plant came on line in September 2006, but has operated intermittently at times due to operational challenges.
4. Auwahi Wind Energy:  
This 21 MW wind farm on Ulupalakua Ranch is on-line and has been supplying electric power to Maui Electric since December 2012.
5. Biomass and Biofuels:  
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.
6. Hydroelectric/Pumped Storage Hydroelectric (“PSH”):  
Following the termination of the PPA with Hawaiian Commercial and Sugar Company (“HC&S”) the companies entered into a Standard Interconnection Agreement (“SIA”) for 4.51 MW of Hydro Electric generation at the HC&S facility.
7. Grid Integration:



- a. 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 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 filed a request to expand the Fast DR Program in an effort to expedite the procurement of capacity DR on Maui. Fast DR represents a key component, available in the near term, of Maui Electric’s larger proposed portfolio of measures “to help mitigate increasing reserve capacity shortfalls that are anticipated to arise on the Company’s Maui island system.” On July 17, 2017, the Commission approved of the request to expand the Fast DR Program from the currently-approved 0.2 MW total load amount to a total load amount of 5 MW. As of June 30, 2018, 3MW of customer load has been contracted to move forward with enablement. The company has verbal agreement from additional sites and expects to complete contract of the approved 5MW.
- b. Additionally, in February 2017, the Companies (Maui Electric, Hawaiian Electric, and Hawaii Electric Light) filed an application to establish a portfolio of DR programs to meet various system requirements. The portfolio was approved on January 25, 2018 through Commission Decision & Order 35238 and the Hawaiian Electric Companies are currently in the process of reviewing offers for aggregator services in future programs.
- c. In partnership with the Hawaii Natural Energy Institute (“HNEI”), Maui Electric participated in the Maui Advanced Solar Initiative (“MASI”) project. The primary objective of the project was 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. HNEI completed the field testing and analysis of data for inverters at the Maui Electric Facilities. The project demonstrated that distribution voltage can be regulated through the use of a smart PV inverter by generating or absorbing the reactive power (Var). A smart inverter can also manage distribution voltage through the control of real power (kW). As a result, effective smart inverter operation can benefit grid operations. The project is complete and the results were published at the 2017 IEEE International Conference on Power Electronics and Drive Systems.
- d. In partnership with HNEI, Maui Electric installed a 2MW/397kWh battery on Molokai in June 2016. The purpose of the battery is to help explore how energy storage may be used to address high PV penetration impacts on the system. The initial control algorithm, research and development work was completed in April 2017 and the battery system was brought online to provide frequency response support. To date, the battery system has provided frequency support through nine events, avoiding under frequency load shedding and the loss of service to customers. System testing and adjustments to the control algorithm are ongoing and will continue for three years, scheduled to end in November 2020.

8. Photovoltaic:

- a. Two new programs - Customer Grid Supply Plus (“CGS+” or “GSP”) and Smart Export (“SE”) - went into effect on February 20, 2018. These programs were developed to further expand customer options and integrate systems configured to provide grid-supportive functionality. As of June 30, 2018, fourteen Conditional Approvals were issued for CGS+ with no systems yet installed and validated. The low number of applications to date may be due to unfamiliarity with the program, continued available capacity within the CGS program and the potential for curtailability that the other programs do not have.
- b. The existing Customer Grid Supply (“CGS”) program has enabled 513 photovoltaic systems at 4.3 MW, and the existing Customer Self Supply (“CSS”) program has enabled 96 photovoltaic systems at 0.64 MW to be integrated into the grid as of June 30, 2018.
- c. The NEM program has enabled 11,590 photovoltaic systems at 86.5 MW to be integrated into the grid as of June 30, 2018. 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. No new customers are being accepted under the NEM program.
- d. Maui Electric’s large customers utilize the Standard Interconnection Agreement (“SIA”) to interconnect PV and offset their energy use. As of June 30, 2018, 17.6 MWs have been installed under this program. 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 do not receive credit for energy exported to Maui Electric.
- e. The Feed-in Tariff (“FIT”) program is currently focused on ‘shovel ready’ projects presently in the FIT Queue and is closed to new applications. As of June 30, 2018, approximately 4.9 MWs of PV have been interconnected with an additional 1.75 MWs in the early stages of project development and construction. Milestones to achieve commercial operation have been established for the remaining projects in the FIT Active Queue. Revised FIT tariffs were submitted to the Commission for review and approval on March 2, 2018.

9. South Maui Renewable Resources:

Maui Electric received approval from the Commission on February 18, 2016 for a 2.87 MW solar facility located in South Maui. The facility achieved Commercial Operations on May 5, 2018.

10. Ku‘ia Solar:

Maui Electric received approval from the Commission on February 18, 2016 for a 2.87 MW solar facility located in West Maui. The anticipated Commercial Operations Date is expected to be the second half of 2018.



## 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 Twentieth 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 27, 2018.

MAUI ELECTRIC COMPANY, LIMITED  
Petitioner

By:   
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.  
Director  
Office of State Planning  
State of Hawaii  
P.O. Box 2359  
Honolulu, Hawaii 96804

BY MAIL

MICHELE CHOUTEAU MCLEAN  
Director  
County of Maui Planning Department  
2200 Main Street  
One Main Plaza Building, Ste 315  
Wailuku, Hawaii 96793

BY MAIL

Dated: Kahului, Hawaii, July 27, 2018.

  
\_\_\_\_\_  
Sharon M. Suzuki  
President  
MAUI ELECTRIC COMPANY, LIMITED