



SHARON M. SUZUKI
President

August 31, 2017

Council Member Kelly King
Chair, Planning Committee
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Re: Molokai Community Plan Update (PC-2) – Request for Comments

Dear Council Member King:

Thank you for your correspondence dated August 21, 2017 requesting comments from Maui Electric on Section 8.6 of the Plan. We have reviewed the section and offer for your committee's consideration the attached recommended revisions to Section 8.6.

The opportunity to review and provide comments to your committee is appreciated. Should you need further information, please contact Ellen Nashiwa, Maui Electric Manager of Customer Solutions and Planning at 872-3249.

Please feel free to contact me with any questions you may have. I can be reached at 871-2332.

Sincerely,

Enclosure

A. EXISTING CONDITIONS

In 2013, MECO had 12 megawatts of diesel-generating capacity that provided electricity to 2,649 residential customers and 562 commercial customers on Moloka'i. The average residential electricity rate on Moloka'i was 46 cents per kilowatt hour (kWh); the rate was 37 cents per kWh on Maui; and it was 12 cents per kWh nationally. In 2012, MECO lost about \$200,000 subsidizing Moloka'i's electricity rates. There is potential for the island to generate much of its own electricity if its energy infrastructure is improved. Per PUC rules, the electrical grid threshold is set to no more than 15% input from small scale individual wind/solar power systems in order to avoid compromising service to other customers on the same circuit. In order to accommodate more new small scale wind and solar power sources, existing electrical distribution controls will need to be upgraded with smart grid technology to better manage these intermittent sources of electricity.

Suggested revision:

As of the end of 2016, MECO had 12 megawatts of diesel-generating capacity that provided electricity to 2,671 residential customers and 541 commercial customers on Moloka'i¹. The average residential electricity rate in 2016 on Moloka'i was 33 cents per kilowatt hour (kWh); the rate was 29 cents per kWh on Maui; and it was 10 cents per kWh nationally². There is potential for the island to generate much of its own electricity with changes to its energy infrastructure.

Comments: Reflects updated information. The basis for Princeton Energy Group claiming that Moloka'i's electricity rates were subsidized by \$200,000 is unclear.

The State of Hawai'i and the US Department of Energy launched the Hawai'i Clean Energy Initiative in 2008. In 2015, approximately 21% of Hawai'i's electricity was generated from renewable resources; primarily from bioenergy, wind, geothermal, and rapidly expanding solar. The electric utility renewable energy portfolio goals were updated in 2015 to 30 percent by December 31, 2020, 70 percent by December 31, 2040, and 100 percent by December 31, 2045.

Suggested revision:

The State of Hawai'i and the US Department of Energy launched the Hawai'i Clean Energy Initiative in 2008. In 2016, approximately 26.6% of Hawai'i's electricity was generated from renewable resources; primarily from distributed solar followed by wind, biomass, and geothermal. The electric utility renewable energy portfolio goals were updated in 2015 to 30 percent of net electricity sales by December 31, 2020, 40 percent by December 31, 2030, 70 percent by December 31, 2040, and 100 percent by December 31, 2045.

Comments: Reflects updated information.

¹ 2016 State of Hawai'i Data Book, Hawai'i State Energy Office, August 2017 – energy.hawaii.gov

² 2016 State of Hawai'i Data Book, Hawai'i State Energy Office, August 2017 – energy.hawaii.gov

Moloka'i has more than enough renewable energy resource potential to meet electrical demand. It's estimated that four 1.5-megawatt wind turbines could meet half the island's electrical use and Moloka'i also has sites that are suitable for utility-scale solar and biomass projects. In 2013, Princeton Energy Group announced plans to build a 20-megawatt solar photovoltaic project on an 80-acre parcel owned by Molokai Ranch. The project will be built out in three phases: the goal of phase 1 is to meet 30% of the demand. The project would be built out in phases and could eventually meet 80% to 90% of Moloka'i's electrical energy needs.

Suggested revision:

Maui Electric is aggressively pursuing a 100% renewable energy future ahead of the state's renewable portfolio mandate. Moloka'i is a small island grid that is already facing renewable integration challenges that must be resolved in order to meet continued community interest in renewable technologies. Innovative solutions are being sought to solve the technical challenges of managing a reliable grid with a high penetration of variable energy sources at reasonable costs. Work to achieve 100% renewable energy future includes complementary paths of engaging the community in discussions about energy options, seeking technical solutions for the utility as well as customers, and finding alternate sources of funding for necessary projects to minimize the burden on electric customers. In 2017, Maui Electric Company hosted thirteen directed community discussions and conducted surveys of residents to obtain input on preferred renewable resources. The responses and comments from over 170 residents indicated an interest in diversifying renewable resources.

Comments: Reflects updated activity and removes reference to the proposed project by private developer Princeton Energy Group. The proposed project was not accepted as an independent power producer.

B. ISSUES

Issue 1: Dependency on fossil fuels for electricity generation results in a lack of control over costs and supply chain security. Accordingly, Moloka'i has some of the highest electricity rates in the state and in the country.

Suggested revision:

Use of fossil fuels for electrical generation limits control over costs and supply chain security.

Comments: The generation of electricity is not solely dependent upon fossil fuel and cost control can also be impacted by a non-fossil fuel source such as biodiesel.

Issue 2: Inability of the island's existing power grid to effectively handle intermittent energy sources such as solar and wind power.

Suggested revision:

Limited resources on Moloka'i to effectively manage additional uncontrolled as-available renewable energy generation such as solar and wind power.

Comments: Maui Electric's existing power grid is able to effectively manage renewable energy generation, however other limitations currently restricts further additions of uncontrolled photovoltaic onto the electric grid system.

C. GOAL, POLICIES, AND ACTIONS

Goal Moloka'i will meet its energy needs through development of local clean renewable energy sources and implementation of energy efficiency and conservation measures.

Policies

1. Support accelerated development of alternative energy sources to help reduce dependency on oil and other fossil fuels.

Suggested revision:

Support accelerated development of alternative energy sources to help reduce dependency on oil and other fossil fuels while remaining cognizant of resulting costs to households and businesses.

Comments: Accelerated development dependent on emerging technology and infrastructure upgrades may result in higher costs.

2. Support increased use of environmentally friendly alternative fuels on Moloka'i without degrading the environment.

Suggested revision:

Support increased use of environmentally friendly alternative fuels on Moloka'i with consideration of the impact to the environment.

Comments: Alternative fuels considered environmentally friendly may not be absolute in avoiding environmental impacts.

3. Support programs that provide incentives to use more efficient vehicles, appliances, lighting, and other energy consuming devices.

4. Encourage County services and facilities to be energy efficient and to utilize renewable energy where possible.
5. Ensure that main utility transmission lines are robust and resilient enough to withstand severe storm effects.

Suggested revision:

Support efforts to keep main utility transmission and distribution lines robust and resilient enough to withstand severe storm effects.

Comments: The utility has the primary function to maintain reliability and safety of transmission lines.

6. Promote the under-grounding of utilities in new areas of development and in existing areas where feasible.
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Suggested revision:

Promote the under-grounding of utilities in new areas of development and in existing areas where economically feasible and culturally appropriate.

Comments: Reflects potential cost impacts and sensitivities to cultural sites including burials.

7. Support development of micro-grids for critical infrastructure and key resources.

Suggested revision:

Support development of micro-grids for critical infrastructure and key resources to promote the integration of renewable energy and system resiliency.

Comments: Clarifies need for micro-grids.

8. Support alternative ownership options for Maui County's electric utilities to provide more affordable and clean energy.

Suggested revision:

Delete item.

Comments: Meeting the stated goal of developing local clean renewable energy sources and implementation of energy efficiency and conservation measures should not rely on an ownership model.

9. Encourage amending the Maui County Building code that would recommend the use of energy conservation devices in both new construction and renovations.

Actions

Table 8.6 Infrastructure - Energy			
No.	Action	Lead County Agency	Partners
8.6.01	Develop a Diversified Energy Strategy for Moloka`i that examines locations for large and small scale renewable energy systems.	Energy Office	State Energy Office, MECO
8.6.02	Create a smart grid that would allow for integration of additional renewable energy sources.	Energy Office	MECO
8.6.03	Provide loan programs and tax incentives to encourage individuals and businesses to install renewable energy systems and to use energy saving devices.	Energy Office	State Energy Office, MECO
8.6.04	Develop an ordinance that would require all new County buildings and facilities to achieve specific energy efficiency standards such as LEED certification.	Energy Office	State Energy Office
8.6.05	Encourage the use of electric vehicles. Support the installation of Photovoltaic vehicle (PV) charging stations throughout the Island.	Energy Office	State Energy Office

Suggested revisions:

8.6.03 – remove MECO from Partners column

Comment: Maui Electric as a regulated utility does not offer loan programs and tax incentives

8.6.04 – Add Hawaii Energy to Partners column

Comment: Hawaii Energy is a ratepayer-funded conservation and efficiency program that may be of assistance

8.6.05 – Replace with: Encourage the use of electric vehicles. Support the installation of electric vehicle (EV) charging stations throughout the Island.

Comment: Encouraging the installation of EV charging stations, without the additional complexity and cost of solar generation tied to the charger, in order to facilitate the adoption of EVs on island.

8.6.05 - Add MECO to Partners column

Comment: Maui Electric continues to be involved in coordination with other agencies in developing opportunities to install electric vehicle charging stations on Molokai