



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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Via email: info@honoluludpp.org
Mr. Brian Lee, Chair
City and County of Honolulu
Department of Planning and Permitting
Planning Commission

Subject: Hawai'i State Energy Office Comments on Special Use Permit (SUP) Application
No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001: 020 portion, 9-2-004:003 portion,
9-2-004:006 portion, 9-2-004:010 portion, and 9-2-004:012 portion,
Honouliuli, 'Ewa, O'ahu

Dear Chair Lee and Members of the Planning Commission:

The Hawai'i State Energy Office (HSEO) offers the following comments on the Special Use Permit (SUP) Application for the Mahi Solar Project (Project) proposed by project developer Longroad Energy (Mahi Solar, LLC) on 620 acres across five (5) different parcels in Kunia, O'ahu. The Project would be a 120-megawatt (MW) alternating current solar photovoltaic (PV) project with a 120 MW/480 megawatt-hour battery energy storage system consisting of approximately 362,000 ground-mounted PV modules mounted on 4,300 single-axis trackers, thirty-two four-MW inverters, an overhead 34 kilovolt (kV) collector line, a 34.5/138 kV substation, and possibly an additional 138 kV collector line. HSEO is supportive of the renewable energy, electricity cost savings, grid-stabilization, and greenhouse gas (GHG) emission reduction benefits from the Project. HSEO appreciates many topics are evaluated as part of the SUP, but focuses its comments on the stakeholder engagement and energy aspects of the Project.

HSEO's comments are guided by its statutory purpose under Hawai'i Revised Statutes §196-71 and its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, and ultimately carbon negative economy. As an island community currently dependent on imported fossil fuels for over 60% of its electrical power, Hawai'i is particularly vulnerable to fuel and energy supply disruptions, unpredictable fuel cost fluctuations, unintended fuel releases impacting both marine and terrestrial environments, and the many impacts associated with climate change. That is why Hawai'i's 100% renewable energy goal is critical to the health, safety, affordability, and well-being of Hawai'i's residents. It is important that reaching 100% renewable energy generation by 2045 be done in a manner that prioritizes the health, safety, and well-being of Hawai'i's residents, natural resources, culture, and environment.

The Project is currently the largest solar plus storage project being proposed in Hawai‘i and will be capable of generating 271,525 MWh annually; an estimated 4% of O‘ahu’s annual electricity needs¹ and the equivalent power for 37,000 O‘ahu homes a year. It would provide much needed renewable energy to help replace the 12-16% of O‘ahu’s electricity generation that will be lost upon the planned retirement of O‘ahu’s 180 MW coal power plant on September 1, 2022.² When the coal plant retires, the energy that cannot be conserved or replaced by renewables will come from other fossil fuel sources, further underscoring the importance of developing renewable energy and storage projects in a timely manner. Currently, the guaranteed commercial operation date for the Project is December 31, 2023, however, on May 28, 2021, Longroad informed the Hawai‘i Public Utilities Commission (PUC) of its plan to accelerate the Project schedule to achieve an earlier guaranteed commercial operations date of September 30, 2023, and possibly a commercial operations date as early as July 31, 2023. With this accelerated schedule, the Project could help minimize the potential for a period of tight generation reserves for O‘ahu’s electric grid from July to October 2023 as projected by the Hawai‘i Natural Energy Institute.³ In addition to the retirement of the coal plant, Hawaiian Electric is also planning to retire its combined 92.6 MW Wai‘au 3 and 4 fossil fuel power generators in 2024. The Project would also enable the retirement of these units.

Mahi Solar would sell power from the Project to Hawaiian Electric at a fixed unit price of \$0.097 per kilowatt-hour under a 25-year power purchase agreement (PPA) approved by the PUC on December 30, 2020.⁴ Per the PPA application, Hawaiian Electric estimates the Project could save typical residential customers consuming 500 kilowatt-hours per month approximately \$1.38 per month on average for the term of the PPA. The SUP states that over its 25-year lifetime the Project would avoid the consumption of 18 million gallons of oil per year, thus saving O‘ahu consumers an estimated \$175 million over the project lifetime based on future oil price projections.⁵

According to the U.S. Environmental Protection Agency’s Greenhouse Gas Equivalencies Calculator, displacement from the Project’s annual generating capacity of

¹ 271,525 is 4.39% of 6,183,093, the amount of electricity in MWh sold to Hawaiian Electric customers in 2020.

² The power purchase agreement between Hawaiian Electric and coal plant operator, AES, expires on September 1, 2022. Under state law (Act 23, 2020), all coal burning for electricity must cease by December 31, 2022.

³ Grid Planning for a Modern Power System in Hawai‘i, March 15, 2021, PUC Docket No. 2021-0024; <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21C23B41114D03112>

⁴ Hawaiian Electric Company, PUC Filing Docket No. 2020-0140 For Approval of Power Purchase Agreement for Renewable Dispatchable Generation with Mahi Solar, LLC. <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A20L30B45115B00135>

⁵ Oil prices are projected to rise (United State Energy Information Administration <https://www.eia.gov/outlooks/steo/report/prices.php>); HSEO has calculated that if oil prices over the project lifetime are similar to actual historical Oahu oil prices over the past 15 years, savings would be \$389 million over the lifetime of the project.

271,525 MWh would be equivalent to reducing carbon dioxide emissions by 192,425 metric tons annually, or taking approximately 41,840 average passenger vehicles off the road for one year.⁶

The SUP identifies the following community and stakeholder engagement activities that have been conducted or will be conducted by Mahi Solar for the Project:

- Virtual public meetings for the Project on July 15, 2020, and October 29, 2020.
- Meetings with various State and City & County of Honolulu agencies in 2020.
- Ongoing outreach with key community stakeholders through presentations to organizations such as Kunia Ridge Farmlands.
- One-on-one interviews with cultural practitioners from the region.
- Presentations are planned for the two neighborhood Boards in the Project area: Waipahu (No. 22) and Mililani-Waipū-Melemanu (No. 25).

The SUP states the following issues and concerns were most prevalent during the past outreach and includes the mitigation measures proposed by Mahi Solar for each:

- Loss of agricultural land.
- Concerns about the viability of co-location of solar panels with plants or crops.
- Potential impacts to the ‘elepaio, pueo, and Hawaiian hoary bat due to the Project’s proximity to their habitats.
- Loss of access to cultural resources and impacts to historic sites.
- Use of equipment made outside the United States.
- Glare from the panels and the possibility of an associated heat island effect.
- Decommissioning and disposal of the Project materials (panels, inverters, transformers etc.) upon the end of the Project lifetime.
- Stormwater runoff due to the impervious surface of the panels and impacts to city and county stormwater fees.
- Impacts to views and public view planes.
- General interest in the Project’s renewable energy contribution.

HSEO encourages Mahi Solar to continue its stakeholder engagement and agency consultation to address these impacts, continue to develop appropriate mitigation measures, and identify any other community concerns. Every project has some degree of impacts and only through close coordination with community members and stakeholders can the impacts be mitigated or minimized to an acceptable degree.

⁶ United States Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator, 2021
<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

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Finally, HSEO believes this is a critical project for our energy transformation given its role related to ending the use of coal in Hawai'i. We hope this project receives your approval, and we request that the Planning Commission make a timely decision so that all involved can integrate your decision into how we move forward.

Thank you for the opportunity to provide these comments. If you have any questions, please feel free to contact me at scott.glenn@hawaii.gov.

Sincerely,

A handwritten signature in black ink that reads "Scott J. Glenn". The signature is written in a cursive style with a long horizontal flourish at the end.

Scott J. Glenn
Chief Energy Officer