



MAUI TOMORROW

Protecting Maui's Future

March 27, 2012

Bill Sherman
Ormat Technologies, Inc.
6225 Neil Road Reno, NV 89511

Ron Terry
Geometrician Associates
PO Box 396 Hilo, HI 96721

Carty Chang
Hawaii State Board of Land and Natural Resources,
P.O. Box 621 Honolulu, HI 96809

Comments on EISPN for Ulupalakua Geothermal Mining Lease and Geothermal Resource Subzone Modification Application

Mahalo for the opportunity to offer comments on the EISPN for the above-referenced project. Maui Tomorrow Foundation, Inc (MTF) supports Maui's transition from fossil fuel to locally produced energy. As with all technologies, there are impacts that should be disclosed, discussed and mitigated during the planning process prior to bringing these technologies online. We appreciate being a consulted party and request that continue throughout the EIS review process.

Existing Impacts from Puna Geothermal Wells

In public presentations to MTF and others the applicant has stated that geothermal technology has changed since the Puna wells were drilled in the 1990's and the impacts from escaped gases, noise, etc have lessened. The DEIS should include a review, perhaps in table format, of the number of resident evacuations, resident relocations, as well as claimed impacts to crops or livestock in the vicinity of those existing wells. Any pending or settled litigation regarding the Puna geothermal wells should also be disclosed.

Air Quality Impacts

Although the geothermal subzone on Maui is sparsely populated, the areas where dwellings are recorded should be indicated on a map, along with the expected extent that air borne contaminants, such as sulphurous gases, could be carried, based upon variable wind conditions of the subject area.

The EISPN states that potential contaminants such as hydrogen sulfide gas, toxic chemicals and heavy metals are found naturally in the eruptions of volcanoes such as Kilauea and therefore any release of similar substances during geothermal well exploration or operations would be comparable to these natural emissions and of little concern to public health. The DEIS should contain a clear comparison of the

expected levels, composition, and duration of potentially toxic or noxious contaminants found in the geothermal well and generating plant systems vs. the annual levels of volcanic fog affecting Maui island.

Hazard Mitigation

Drilling and operation of the wells could involve toxic or regulated chemicals which would be hazardous to plants, animals or humans such as arsenic, lead, mercury and hydrogen sulfide. These should be fully discussed in the DEIS. Hazard mitigation and emergency evacuation plans for the existing and extended subzone should be discussed in the DEIS, including a portion of the subzone directly uphill of the Wailea resort/residential area.

Positive Impact on Power Rates and Community Benefits

We request that the DEIS clearly discuss any increase or decrease in utility rates for Maui customers as a result of future geothermal generating capacity being developed on Maui using comparative figures from the Puna geothermal plant. References are made regarding community benefits funded from geothermal operations; we request that the DEIS be specific about benefits for Maui, especially to residents of Ulupalakua and Kanaio residing in or near the geothermal subzone.

Longevity of Proposed Wells and Relationship to Seismic Activity

We request the DEIS include disclosure of the rate of well depletion in the Puna area, compared to original estimates and a comparison of geothermal conditions in the Maui subzone to those in Puna. Please discuss how many wells would likely be necessary during the life of the proposed project to produce the expected output of up to 50 MW of new power? The EISPN only refers to seismic activity in terms of the frequency of existing seismic events. We ask that the DEIS also examine any relationship between deep well drilling and operations and increased seismic activity in a geologically volatile area.

Comparison of Renewable Fuel Source Costs

In its economic section, the DEIS should compare the costs and environmental impacts of other firm renewable power sources, such as biofuel, to the construction and operation of geothermal plants. This should include capital and operating costs over several time line scenarios (i.e. 20 years, 50 years). The DEIS should provide estimates of each technology's likely cost to ratepayers. Also it is mentioned (p.6 EISPN, section 1.2) that MECO anticipates needing to replace 25 MW of generating capacity by 2015 and adding 25 MW additional generating capacity. The DEIS should specify which generating capacity MECO is expecting to replace in order to help the public understand the cost/benefit tradeoffs of this project.

Groundwater Impacts

Reference is made to a "Limited" amount of water needed for "drilling and construction." The FEIS should be specific about the amount of water needed and its source. If a well is drilled to supply water for construction activities what would be planned for its use after construction is complete? What measures will be taken to protect the Kamaole and Lualailua aquifers from contamination from accidental releases of hazardous materials from well sites. How many exploratory wells would be proposed in each aquifer area?

As noted in the EISPN, lava tubes are found in the Geothermal Subzone area on Maui. There are several legendary lava tubes located in Kanaio that terminate near the coast and are said to transport fresh water, even in modern times. Features such as these should be identified if possible through archaeological and cultural studies, and avoided.

Cultural Impacts

MTF is gratified to see that the EISPN recognizes the cultural importance of the subzone area and recommends that the consultants preparing the project's CIA consult with members of the Aha Kiolo councils, Maui Cultural Lands, Inc and others to gather traditional knowledge of the area.

It is of some concern to us that the applicants only plan "field reconnaissance to survey sample portions of the project area and inspect selected previously identified sites." Recent studies of the adjacent Auwahi area produced far more density and varieties of cultural sites than anticipated and supplemental studies were required. A good baseline archaeological study of the proposed project area will be necessary in order to comply with its stated goal of "identifying areas in which disturbance should be avoided or minimized to reduce impacts to historic properties or culturally important features." It is also critical that such studies be conducted during the driest months of the year in order to have a clear view of the cultural landscape. MTF also requests that any stone walls documented not be dismissed as "ranching walls," as is frequently done. It has been demonstrated by Kirch et al that low rock walls in this region of Honua'ula and Kahikinui can be part of a traditional Hawaiian agricultural field system.

The EISPN refers to a "barren zone" in such ahupua'a as Paeahu, Palauea, and Keauhou "with a coastal band of settlement, perhaps used on a temporary basis, separated by a relatively barren zone from the uplands between 1,500 feet and 3,000 feet in elevation, where year round agriculture and permanent residences was feasible." Extensive cultural landscapes exist and more are being documented every year from 200 ft amsl to 900 ft amsl. These include evidence of agriculture, tool-making and permanent ceremonial and residential features. Palauea and Keauhou are richly endowed with cultural features.

Once again, while the EISPN notes that "future Chapter 343 documents for wells and a power plant, if they go forward, would include site-specific archaeological surveys" it is possible that future Chapter 343 review for this project may never be required due to recently enacted exemptions. This possibility should be considered within the DEIS and appropriate commitments made to complete detailed archaeological investigations whether required or not.

The DEIS should also discuss the project's plan for Federal Section 106 consultation process since Federal funds are being used for the exploratory study.

Maps

The EISPN states that more detailed maps will be provided in the DEIS. It would be helpful if maps included indicate and label proposed transmission lines for Sempra's Auwahi wind project; local landmarks such as Fleming Native Plant Arboretum in Kanaio, Ulupalakua Ranch headquarters, Tedeschi Winery and rural residential settlements in Kanaio and Ulupalakua area. Please specify on maps the location of proposed sites for geothermal test wells and the new access roads needed to reach them in relationship to archaeological site mapping and biological resources.

Land Use Districts

The EISPN states "The proposed modification would expand the GRS to cover additional Agricultural District lands but would not expand the GRS into Conservation District lands." Will the DEIS discuss the possibility that if no suitable well site is available on the state Ag District lands exploration would begin in Conservation District lands?

Noise

Complaints of noise from geothermal operations in Puna have been ongoing. MTF requests the DEIS discuss noise levels expected from test drilling, permanent well drilling and geothermal plant operations, as well as construction activities and the extent that noise levels will carry across the landscape to inhabited areas or their affect on native wildlife. A timetable for well expansion should also be discussed, based upon experience at the Puna wells including how many would be needed to meet the energy goals of the

facility and their proposed power purchase agreement with MECO.

Flora and Fauna

We are pleased to see the EISPN affirm that the proposed exploration area does have sections of rare dryland forest that should be avoided, as well as important native fauna habitat. We are also encouraged that the lava flow areas that provide ideal habitat for native wiliwili forests are recognized as a sensitive resource area, even though the increasingly rare native wiliwili are not officially listed as threatened or endangered. MTF requests that the DEIS include biological resources maps indicating locations and concentrations of native wiliwili, maiapilo and other dryland species in relationship to any future access roads or sites proposed for test drilling. Of special concern are the extensive wiliwili groves on public land in the proposed geothermal zone in the vicinity of Papaka Rd.

If mitigation is required for future geothermal activities agencies should consider focusing time and funds into repairing damage done by feral goats immediately makai of the Geothermal Subzone on Ulupalakua Ranch lands at Cape Hanamanioa. The rare anchialine ponds found there are an important resource for native invertebrates and waterfowl, such as the endangered a'eo. Native flora in these ponds have been decimated by feral goats over the past seven years and fencing and management is needed.

Secondary and Cumulative Impacts

We note that discussion of many secondary and cumulative impacts of this proposed project are proposed to be postponed to a later time, based upon "regulatory requirements." There appears to be a concerted effort in the Hawaii State Legislature to rework laws governing renewable energy projects, especially those on public trust lands, in order to exempt them from environmental review. If these legislative efforts succeed it is possible that the full impacts of construction and operation of the final wells, generating plant(s), roads, transmission lines etc will never undergo environmental review under HRS 343. The EISPN states:

"Ormat would select an optimum location for a geothermal plant that maximizes the efficiency of the operation and minimizes adverse impacts. Ormat would finalize details of the plant's size, interconnection to the Maui Electric Company grid, and other characteristics, and would prepare follow-up documentation as may be required by Chapter 343, HRS, and other regulatory requirements, that addresses the construction and operation of the plant, including road use."

If no "follow-up documentation" is required by Chapter 343 HRS, it is vital that this DEIS address as many of the cumulative and secondary impacts of the proposed expansion of the Geothermal Subzone and exploratory wells as possible.

Thank you again for allowing Maui Tomorrow Foundation to submit the above comments.

Sincerely,



Irene Bowie
Executive Director