

CERTIFIED MAIL

August 20, 1984

Mr. George Martin
General Delivery
Laupahoehoe, Hawaii 96764

Dear Mr. Martin:

Variance Application (V 84-23)
Variance from Height Limits
Tax Map Key 3-6-5:27, N. Hilo

After reviewing your application and the information submitted in behalf of it, the Planning Director by this letter hereby certifies the approval of your variance request to allow the construction of a Wind Energy Conversion System (WECS) tower 100 feet high where the zoning regulation allows a maximum 55-foot height in the agricultural zone.

The approval is based on the following:

1. There are special or unusual circumstances applying to the property which exists to a degree which interferes with the best manner of its development. The unusual circumstance is that, to be useful as a generator of electric power, the blades of the proposed structure (windmill) must "capture" the proper wind regime. On flat land with little or no "obstructions" the wind is generally found to be suitable for WECS at about the 30 or 40 foot height. Where the terrain is undulating, or when cliffs, gorges, embankments, trees and buildings are present, such "obstructions" cause wind turbulence which in turn negates the effectiveness of the WECS as well as undermines its mechanisms causing undue and accelerated wear and tear. The immediate area surrounding the property is characterized by uneven terrain, embankments, trees, gullies and buildings. The reference, "A Siting Handbook for Small WECS - U.S. Department of Energy, March 1980," recommends tower heights above 85 feet in cases such as this in order to avoid the wind shear and turbulence which otherwise neutralizes and even harms WECS installations.

AUG 22 1984

These factors are characteristic of the subject and surrounding property and exist in sufficient degree to justify the additional height above that presently allowable.

2. There are no other reasonable alternatives that would resolve this difficulty. Wind flow patterns over a landform are a natural phenomenon and cannot readily be changed by man in a practical way. Thus, permitting the additional necessary height is the only reasonably available alternative that would enable the permitted use to occur efficiently.

3. Approval of this request would be consistent with the County General Plan's "Energy" element and with Local, State and Federal goals which encourage the development and use of alternate energy sources. The added height being requested at this site would not be detrimental to the public, neither would there be substantial adverse effects to the area or nearby properties. Additionally, no objections were voiced by any property owners in the vicinity. The terrain and siting of the facility are such that any visual impact is either non-existent or not apparent and there are no significant viewplanes which would be impacted by establishing such a tower at this height on this location.

Based on the above findings, it has been determined that the purpose and intent of the zoning district, Zoning Code and the General Plan would not be undermined or detracted from, and no materially detrimental effect or adverse impact would be imposed upon the public or adjacent property.

The variance request is approved subject to the following conditions:

1. The petitioner or authorized representative be responsible for complying with all the stated conditions of approval.
2. Plans and construction of the total structure must be approved by a structural engineer or architect registered in the State of Hawaii.
3. Plans for the windplant be submitted to the Planning Department for Plan Approval within one (1) year from the effective date of approval of the Variance Permit.
4. The petitioner or authorized representative shall be responsible for providing the appropriate safeguards on their system to prevent TV and/or radio interference to the adjoining property owners notified through this Variance Application.

Mr. George Martin
Page 3
August 20, 1984

5. Siting of the structure shall be as shown on the applicant's plot plan "revised June 6, 1984" on file in this office.
6. All other applicable rules, regulations and requirements be complied with.

Should any of the foregoing conditions not be met, the Variance Approval shall be deemed null and void.

Should you have any questions in the meantime, please feel free to contact us.

Sincerely,



SIDNEY M. FUKÉ
Planning Director

DT:wkm

cc:Planning Commission