AVAILABILITY OF SOLAR RESOURCE AND THE PERFOMANCE OF PV SYSTEMS IN KENYA

BY

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DECLARATION

This Thesis is my original work and has not been presented for a Degree in any other University.

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This Thesis has been submitted for examination with my approval as a University supervisor

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ABSTRACT

Daily data from the Meteorological Department for 8 years (1985-1992) of 9 stations fairly well presenting the whole country has been collected and analysed. The main aim was to study the site potentiality for solar systems applications. It has been found that the country receives ample solar radiation the whole year round, typical of an average of 20MJ/M^2 per day with litlle possibility of less than 13MJ/M^2.

An automatic data logger has also been designed using the BBC microcomputer's 1MHZ bus. The aim was to evaluate the perfomance of the solar system at the site of application.

Given the perfomance of the system, the energy received at the site and the load demand, a user friendly software has been developed. The software provides a method for optimal size and cost analysis of the PV system, with only the latitude, albedo and load demand as the inputs.