HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING COURSE

DIPLOMA PROJECT

AN INVESTIGATION INTO THE COST EFFECTIVENESS OF PHOTOVOLTAIC APPLICATIONS IN A RESIDENTIAL HOUSE

M/989

MALAES VASILIS

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By

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CONTENT

1.1 Introduction.

Photovoltaic (PV) devices transform sunlight directly into electricity. They have been around for about thirty years, doing exotic things like generating electricity for satellites in space. But the real value of PV lies in its potential to produce electricity on earth, and to do so cheaply enough to compete with conventional sources of electricity like nuclear, coal, oil, and natural gas.

It is important to thing of photovoltaic solar energy converters as systems rather than as 'solar cells'. What is required of photovoltaic converters the delivery of electrical power to satisfy the demand of a given load. Such loads may range from small, single-purpose devices, such as navigation lights, over single-family residence, commercial or public buildings, and industrial plants of any size, to a community or an entire utility network.

These loads generally require power delivery on demand, at a fixed voltage, and, in some cases, at precisely controlled frequency and phase. Consequently, the converter system may contain in addition to the solar collector, a voltage regulator, electrical energy storage, an inverter, and possibly other subsystems.

The scope of this project is to be familiarized with the student the hole system in order to present the pest possible system and the reason why according to Cyprus demand. The student binds with the research of Cyprus and external market and basically to explain the reasons of using solar systems and understands how the complete system works.