

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

**ECONOMICS OF A SOLAR POWERED
GREENHOUSE IN CYPRUS**

E. 1397

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JUNE 2006

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Abstract

Greenhouses are gaining in importance year by year in Cyprus. There is a great need to control the environment inside the greenhouse in order to optimized the production. In order to do that modern system are required like:

- Heating system
- Cooling system
- Automatic side and roof ventilation
- Air recirculating fans
- Automatic controller

In order to operate all these systems electricity supply is required. Electricity can be provided from the grid in case the greenhouse is located near the grid network. In case the greenhouse is located in remote area the electricity supply can be provide by an electric generator or from photovoltaic cells utilizing the solar energy. In this work it is examined whether such a solar system is economically feasible. The return on investment of a greenhouse supplied from the grid and the greenhouse supplied from a solar system is compared it is shown that the cost of a solar system is very high and that the electricity supply to a grid house under examined situation is not feasible.