

CHAPTER 1

INTRODUCTION

1.1 General Project Synopsis

The purpose of this project is the development of a Home Solar Automation System. In this project, we must know two basic engineering disciplines: mechanical engineering and electrical engineering. In this project, machine tools are mostly used for metal cutting, CNC laser cutting, grinding, and drilling. Welding is also important to join inseparably every component of the product. This product also must know the basics of electrical. This project helps consumers reduce their bill rate. As we know, the source of our energy at home is too expensive because of limited sources. That is why we must find a new source that is easy to get and renewable. This project has three main process developments. There is a mechanical process, where we made a solar panel holder for a house. The second process is an electrical process; in this process, we need to make a circuit for a home electrical system. The last process is the integration of the two parts, mechanical and electrical parts.

1.1.2 Specific Project Synopsis

My project is the development of solar home automation (mechanical part). This solar home automation is a model of an actual house. This size house is 40cm x 30cm x 30cm. This house uses a 24-volt solar panel. To know how the solar panel functions, a bulb and LED were installed in the house and has a switch to turn on/off. The house can stand a load of 10 kg. Although the solar panel and the holder weigh not more than 5kg, the stability of the house is important. The solar panel holder is made from L-shaped steel and the house is made from prospect. This holder is fixed with the house roof because

when install the solar panel it's not slip down. In the circuit rechargeable battery 24 volt was using for save energy from solar panel and using when the night.

1.2 Project objective

1.2.1 General objective

Diploma final year project objective is to practice the knowledge and skill of the student that have been gathered before in solving problem using academic research, to born an engineer that have enough knowledge and skill. This project also important to train and increase the student capability to get know, research, data gathering, analysis making and the solve a problem by research or scientific research.

1.2.2 Specific project objective

The objective of this project is:

1. To design the mechanical part of a solar home automation system.
2. To fabricate the mechanical part of the system.
3. To test the model with the solar panel

1.3 Problem statement

This project is about how to reduce the costing for source at home. This project to shown solar energy is the best solution to solve high utility bills problem because solar energy can get at anyway .Solar energy source can get from the sun .Sun can sunrise every day at anyway in this world.

1.4 Project scope

The scope for this project is:

- 1 Design of structure suitable for solar home.
- 2 Sketching and designing: sketching and designing using the solid work software
- 3 Fabrication: fabricate and produce the home by using manufacturing process such cutting, machining, and etc.
- 4 Integrate the system with electrical part.