

ABSTRACT

The development of an area in need of the role of energy to thrive, particularly electrical energy. However, until now there are still many areas in Indonesia are still isolated by electricity caused by geography. DC Power House is one solution that can be used to address the areas that do not have electricity. DC Power House source are derived from non-fossil fuels that can be renewable. Sources come from solar energy because Indonesia is one country that is traversed by the equator so the climate in Indonesia is divided into two: the rainy season and dry season. During the dry season the DC power house will be very useful, because it can deliver a maximum current at the time of the morning until the afternoon, that at 6 am to 6 pm.

In this thesis, the addition can be used during the daytime DC Power House may also be used at night by using an accumulator battery of 50 AH-12 volt source. Thus, DC Power House can be a source of energy for 24 hours. DC Power House is designed by using Buck Converter P&O MPPT method to regulate the incoming voltage and current of the solar panel. The position of the automatic controller is placed between the solar cells and batteries. It is used to maintain the right charging voltage of the battery. Automatic battery charging system using ATmega 32 microcontroller and PWM applications. Thus, the system will adjust automatically when the battery charging and discharging.

The purpose of this thesis is to make an automatic battery storage system that is able to control the battery automatically when charging and discharging so that DC Power House can be used as a source of electricity for 24 hours.

Keywords : *Renewable Energy, DC Power House, controls the automatic battery, solar panel, battery*