ABSTRACT

Many citizen in Indonesia not aware of renewable energy and continue to use fossil fuel energy. In the future fossil fuel energy will run out, linear with increasing utilization cost. One of solution for energy saving is panel suryas. However, there are several factor need to consider while installation.

Total power usage is a key for design installation of panel surya. To get total power usage, we need to monitoring and collect behaviour data in real time. Make power data logger serves to measure voltage, power and voltage

Power data logger to calculate power usage and save the results of retrieving the data every one minute. The total power usage aims to design the installation of panel surya energy and maximize electricity savings. Solar energy panel suryas are designed using *Helioscope*.com while to find out about electricity savings and the cost of installing panel suryas using the Homer application.

In this research of the analysis of the design of solar panel installation that has been on 2.200VA and 4400VA homes with a total power usage of 9.82kWh or as much as 3.584kWh per year. Power savings for homes using on-grid solar panel energy, installations of seven 300Wp solar panels for 2.200VA home power with 5.356kWh of solar panels generated per year. While for 4.400VA homes using fourteen 300Wp solar panels with power generated at 13.738kWh per year. At 2.200VA households, break-even point occurs after the use of 2 years and 9 months with the resulting power difference of 1,772 kWh per year. At 4.400VA household, the break-even point occurs after the use of 2 years and 7 months with the difference in power generated by 13.748kWh.

Keywords: Electricity Savings, Solar Panel, Helioscopes, Home