ABSTRACT

Utilization of renewable energy is currently increasing, and along with increasing global warming (global warming). Renewable energy solar power plants are among the most widely used. Because the climate in Indonesia is a tropical climate that gets a lot of sunlight, it is very suitable to use solar power plants. In this study the author will analyze data and economics in terms of the potential of PLTS seen from the value of solar irradiation so that the utilization of solar power plants can run optimally.

In analyzing the data, the author uses a simple weather station to measure the irradiation value from the sun. Simple weather station this time using solar panels or photovoltaic, current sensors and temperature sensors. Solar Panel is a device or system consisting of solar cells designed to enable converting sunlight into electrical energy. And the current sensors that I use are the ACS712 sensor and the DS18B20 Temperature Sensor. ACS712 is a Hall Effect current sensor. Hall effectallegro ACS712 is a precise sensor as an AC or DC current sensor. And the DS18B20 sensor is a digital sensor that has an internal 12-bit ADC, and in the temperature range of -10 to +85 degrees Celsius, it has an accuracy of +/-0.5 degrees.

The results show that the use of solar energy is suitable for generation in the Mojosongo area, because with the irradiation value and investment cost value obtained from 3 LCOE simulations, the LCOE results from PLTS in Mojosongo are IDR 1785 / kwh, IDR 1369 / kwh, IDR 1451/kwh. the results of the LCOE produced are still very cheap when compared to the price from PLN.

Keyword : Data Analyst, Photovoltaic, Solar Panel, ACS712, DS18B20