

ABSTRACT

PLTS or Solar Power Plant is the utilization of renewable energy that is able to convert solar energy into electrical energy. To find out the current, power, and voltage obtained from PLTS, a monitoring system is needed in real time. Through this research, it can be analyzed how to monitor and the return-on-investment price of Hybrid PLTS which is analyzed at certain hours. The PLTS monitoring system here is carried out by obtaining the necessary data by accessing the web server via the Growwatt Shine Server via the PLTS inverter.

After obtaining the necessary data such as current, power and voltage, the data will be recapitulated and analyzed at Ms. Excel to get a return on investment from installing PLTS here. The purpose of the research conducted here is to find out the performance of the PLTS which is tested only at certain hours and find out how long it takes for users to return on investment from installing the PLTS. Monitoring of PLTS here is carried out to make it easier to analyze the performance of the PLTS and is carried out from 14 January 2022 to 31 December 2022.

The results of the Final Project research here show that the highest energy gain was recorded in August of 228.3 kWh and the lowest was recorded in January of 78.6 kWh. The 3kWp Hybrid PLTS in Taman Sentosa can produce an average of 162.4 kWh per month. In the design and simulation in the PVsyst application, there are several results that can be taken, one of which is the total initial investment cost of Rp. 54,511,996, operational and maintenance costs of Rp. 6,352,600, LCOE of Rp. 1,154.87/kWh and Payback Period or return on investment for 12.5 years.

Keywords: *Inverter, PLTS Hybrid, Monitoring, Growwatt Shine Server.*