

ABSTRACT

Alternative energy is always growing rapidly because of the growth and demand of energy in the world continues to grow. With the increasing energy needs of fossil materials over time will be depleted and depleted, then to meet these needs it is necessary to use renewable energy, one of which is solar energy that is used as electrical energy using solar panels (solar photovoltaic panels). Cirata Solar Power Plant (PLTS) is the largest electricity bank in Java with a capacity of 1 MWp, with an area of approximately 1 hectare. The solar panels used are thin film with type CIS (Copper Indium Selenium). There are three solar panel installations in Cirata PLTS, namely a ground mounted, rooftop, and parking shade system mounted facing the rising sun with a slope of 10 ° from the ground. The data used in this study are daily production data with intensity data bases per 30 minutes, irradiation data, solar panel temperature data and environmental factors. So that the results of the comparison of solar panel energy production with the capacity of each experiment is 20kW, there is a difference in production output, namely maximum energy of 87.9 kWh on ground mounted, 83.81 kWh on parking shade, and 81.39 kWh on rooftop. solar panels installed on the ground produce more optimal energy in the Cirata 1 MWp Solar Power Plant.

Keywords: *Solar Panel, PLTS.*