

# Rancang Bangun Sistem Solar Tracker Dengan Pemantauan Daya Listrik Berbasis IoT

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## ABSTRACT

*Electricity is something that can not be separated from the daily life of every person. The growing number of PLN electricity customers every year verifies the trend. Therefore, there needs to be an alternative source to get the electricity supply. The installation of solar panels is indeed a solution that is often used to empower electrical energy. However, because it uses energy from nature, it will be difficult to predict the amount of energy that solar panels can produce. The energy generated by solar panels depends on several factors: the length of the sun's irradiation. It is the background of the manufacture of solar light tracking tools using Light Dependent Resistor (LDR) components as the sensors and servo motors as the driver of solar panels' position. The control system uses a Proportional Integral Derivative (PID) control. To find out solar panels' performance, tracking the sun's position is equipped with a solar panel performance monitoring system that can be accessed through the Blynk application on android smartphones. There are three parameters of solar panel performance that are monitored, namely current voltage and power. From the test results conducted from 09:00-01:30, solar panels with solar position tracking system produce an average voltage of 20.02 Volts in cloudy weather conditions. Without the sun's tracking position, solar panels produce an average power of 19.40 Volts in the same weather conditions on the same day. The solar position tracking system can increase the voltage produced by solar panels by 6 Volts.*

**Keywords:** Solar Panels, Tracking, PID, LDR, Blynk