

ABSTRACT

Alternative energy is a usable energy source and aims to replace conventional fuels without consequences that can pollute the environment. Solar panels are one of the alternative energies that can be utilized to generate electrical energy. In its utilization, most solar panels are installed fixed (static). Which results in the absorption of solar energy from the panels will be less than optimal. To be able to absorb optimal solar energy, the position of solar panels must always be perpendicular to sunlight. In this study has been designed a mechanical system that can move the position of solar panels to always follow the direction of the coming sunlight (solar tracking system). In this solar tracking system is also given additional IoT systems that aim to make the output of solar panels can be monitored in real-time. From the results of the study obtained a significant difference in electrical power output in every hour. The power output generated from dynamic solar panels is relatively more stable with an hourly average of 8.60 Watts, while in static solar panels it is more volatile with an average per day reaching 7.15 Watts per hour. So the optimization efficiency resulting from solar panels with solar tracking system is 3.76%. **Keywords** : Power, Dynamic, IoT, Output, Solar Panels, Solar Tracking System, Static.

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