ABSTRACT

The climate crisis is one of the problems that arises due to the large use of fossil fuel power plants, with this problem there is a need for alternative solutions for environmentally friendly renewable power plants such as solar power plants. However, the existence of this type of environmentally friendly power plant does not mean that its use can be immediately implemented in the wider community, this is because this type of power plant is still expensive and ineffective. This research aims to develop a solution in the form of an IoT solar panel tracker tool with monitoring mode and also PID control. This tool functions by tracking the sun and moving the actuator system towards the most optimal light so that it can increase effectiveness in absorbing solar energy. This tool can increase solar energy absorption by 29,28% to 46,99% when compared to conventional solar panel systems that are installed permanently, even though the energy absorption of this device shows a significant increase, this device is still not operating optimally, the data from three tests shows a decrease in power the battery was 15% and 25,29%, while in really sunny weather conditions the system recorded an increase in battery percentage of 4%.

Kata kunci: IoT, *Monitoring*, Optimal, PID, Solar Panel, Weather