

ABSTRACT

Indonesia has considerable potential to utilize solar energy as a renewable energy source that produces electricity. To produce electrical energy from solar energy, a device called solar panel is needed. Solar panels can convert solar energy directly into electrical energy with the photovoltaic principle. The use of solar panels is still not optimal because when a solar panel receives solar radiation, the solar panel will become hot. The heat generated by solar panels can be used to produce electrical energy using a thermoelectric generator (TEG). With the TEG heat on the solar panel is not wasted but can be converted into electrical energy using the seebeck effect. In this study, 10 TEGs were installed in series-parallel in order to help produce optimal power. At the bottom of the panel installed stainless as a heat storage then TEG and heatsink which will be tested at 0 masl and \pm 600-715 masl. The average power produced by solar panels and TEG at 0 masl is 7.26 W while at \pm 600-715 masl is 7 W. This is due to the influence of radiation, heat storage and ambient wind speed. With the stainless, the heat will be stored a little longer so that when cold winds blow on the heatsink there will be greater temperature changes so that the TEG can help increase power. But when there is no cold wind blowing, the temperature of the heatsink will increase so that the TEG accepts smaller temperature changes and will be a burden because the power generated is small.

Keywords: Power, Solar Energy, Solar Panels, Stainless, TEG and Temperature.