Analysis of the Effect of Adding a Radiator as a Cooling System For Monocrystalline Solar Panel Efficiency

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ABSTRACT

The intensity of solar radiation is about 4.5-4.8 kWh/m2 per day, Indonesia has a lot of solar energy potential. Since the country is passed by phenomenal lines, this potential can be converted into electricity using solar panels. The study used a method of comparing two 100 Wp solar panels where one panel was given coolant and the other panel without coolant to ensure that the solar panel with the coolant produced a more optimal amount of power. The purpose of this study is to determine the effect of the radiator as a watercooling agent on the performance of solar panels, as well as the efficiency of the solar panel when cooled with water and without cooling. When studying the voltage, current, surface temperature of solar panel, the water temperature will be observed to find out how well the cooling system works. The results of the study indicate that, over seven days of testing of solar panels with coolant showed an improvement in efficiency compared to uncooled solar panel by 1.64% on the first day, on the second day by 2.32%, on the third day by 1.19 %, on the fourth day by 0.82 % on the fifth day by 1.22, on the sixth, by 1.27 %, and on the seventh day with 1.47 %.

Key words: *cooling system, efficiency, solar panels.*