ABSTRACT

The average daily solar energy potential in West Java, especially Bogor and Bandung is only around 2.56 and 4.15 kWh/m2/day. Even though the potential for solar energy is high, the use of solar energy into electrical energy has not been widely used in Indonesia, this is because the supply of solar energy in Indonesia is uneven.

Because of this problem, a single board computer-based weather monitoring station is needed to determine the potential for solar energy in a location and estimate the electrical energy produced if a solar power plant is built at that location. The methods used for this research were literature study, data collection, technical analysis, testing the durability of weather monitoring stations and calculating the analysis of solar energy potential in the deli building.

Based on the results of the analysis, it was found that area a of the deli building could have a maximum of 60kWp and a minimum of 39.27kWp of solar panels installed, and area b could have a maximum of 38.50kWp and a minimum of 25.41kWp of solar panels installed, and from the analysis of the potential of the weather monitoring station the maximum power efficiency conversion was 74.38 % and average 79.85%.

Keywords: *solar power plants, weather monitoring stations, efficiency, potential analysis*