ABSTRACT

Indonesia is one of the countries crossed by the equator. Where the geographical location is, Indonesia gets the sun's heat throughout the year. So that the energy potential of sunlight in Indonesia is very large. This potential can be used as renewable energy as a power supply for electronic devices by utilizing solar cell modules as converters of solar energy into electrical energy.

Dispenser is an electronic device that is often used in everyday life. Because it has an important role, making dispensers is often used continuously making electricity consumption very large. By using current and voltage sensors, we will find out how much electricity is consumed in a dispenser. In addition there is a temperature sensor that functions to control the water temperature as we want. Also added is a microcontroller and wifi module so that users can monitor the use of dispenser power and regulate the temperature through their respective smartphones so that the drinking water dispenser can be controlled remotely.

The results of the analysis show, if the maximum temperature in drinking water is read by the DS18B20 sensor which is 72 ° C. At the beginning of its operation, dispensers using electrical energy sourced from PLN resources need 9 minutes to heat the air to reach maximum temperature. Whereas when using electrical energy produced by solar cell modules it takes 19 minutes to heat the air to reach the maximum temperature. The cost required for drinking water dispensers for one hour to delay the time needed to use electrical energy sourced from the PLN power supply is 0.067 kWh. While the power needed to drain drinking water for one hour from time to time the delay uses the electrical energy produced by the solar cell module which is 0.076 kWh.

***Keywords**: Dispenser, Solar Cell, Current Sensor, Voltage Sensor, Temperature Sensor.*