ABSTRACT

Electrical energy is a primary need for the people of Indonesia. This can be seen from the increasing number of tools to support activities and human needs that use electricity as a source of energy. The community's lack of awareness of the importance of saving electricity, resulting in the use of electricity in each year has increased. Thus, it is necessary to monitor the total power in use so that it can optimize the use of electrical energy.

Monitoring by utilizing internet of things (IoT) technology, monitoring can be monitored in real time and accessed anywhere. In this study, a monitoring system was made to monitor total power usage in households by utilizing IoT technology. This study uses 3 sensors, namely ZMPT101B voltage sensor and ACS712 current sensor to find the value of the power generated from the use of electrical loads. Meanwhile, the temperature sensor DS18B20 to determine the state of the temperature of the temperature in the system or room. Sensor reading output will be displayed on the LCD and also sent to the IoT platform with ESP8266 NodeMCU.

The results of testing the ZMPT101B voltage sensor produce an error value of 2.65%, the ACS712 current sensor with an error value of 5.3% while the DS18B20 temperature sensor with an error value of 0.6%. In testing the whole system with a fan load, rice cooker, dispenser, PC and laptop within 60 minutes so as to get a total power of 12638 W with a total delay of 2.8 minutes. Then converted to 12,638 kWh with an electricity cost of Rp. 18,413,566. The test results are sent to the IoT platform via blynk.

Keywords: ***smart meter, internet of things.***