

ABSTRACT

In educational areas in Indonesia, many people come from outside the region to gain knowledge and work in the region. People who live in the area take advantage of the opportunity by running a boarding room rental business as a place to live for immigrants who come. However, in the field there are still many boarding house owners who charge the same rates for room and electricity costs. If the boarding house renters bring necessities with high power consumption, it can cause losses for the boarding house owner due to uncontrolled use of power. This is due to the many obstacles in the installation of kWh meters by PT. PLN (Persero) so that the boarding house owners have difficulty in installing each room. Therefore, it is necessary to innovate a system that can measure the use of electrical energy in each boarding room in real time.

The internet of things (IoT)-based electrical energy monitoring system can be a solution that can be used to overcome these problems. This system is designed using the PZEM-004T sensor as a measuring tool and a thinkable application to display usage data.

Based on the test results obtained, the system designed is able to properly monitor the use of electrical energy in each boarding room using a smartphone through the thunwire application. The application is able to display the energy use of each boarding room and the cost of the bill for each room. In calculating the accuracy of the sensor, the power accuracy value is above 99,5% and energy accuracy is above 99,5%.

Keywords: *real time, internet of things (IoT), thinkable*