ABSTRACT

Energy audits in buildings or buildings are very important, especially the use of electrical energy, the portion of use and allocation and supply of electrical energy is one of the dominant ones. Steps to avoid wasting electrical energy, the energy development directorate has made energy conservation guidelines for buildings that consume a large amount of energy. In this research an IoT-based IKE audit system has been built in accordance with government regulations SNI 6196 of 2011.

This final project is designing a tool to send three-phase electricity data to buildings, an energy audit monitoring system to monitor Energy Consumption Intensity (IKE) values using Wi-Fi as a communication system. The IoT platform will receive and store three-phase electrical reading data if the data is successfully sent. Data that has been stored on the IoT Platform can be accessed on smartphone applications and monitoring dashboard websites.

The results of this final project, a comparison of the readings of the three types of kWh meters, Schneider's kWh has an average accuracy of 96.83% and ZIZM194-DAY has an average accuracy of 94.09%, the kWh meter has succeeded in sending three-phase electricity data to Antares 100%. Data that was successfully sent to Antares and then retrieved by the VPS will be displayed on the smartphone application and energy audit monitoring website, the data displayed on the smartphone application and monitoring website is 100% successful. The comparison of HTTP and MQTT data sizes obtained is that MQTT is smaller in size for sending data and receiving data. The device can update the SSID and password with the OTA method, which has a 100% success rate.

Keywords: *Internet of Things, ESP-32, Protokol MQTT, Power Meter, Audit Energi*