

ABSTRACT

This final project aims to develop a method for processing organic waste into biogas in the RRA (Reduce, Reuse, Recycle Area) Area and apply methane gas, ultrasonic and temperature monitoring technology to maintain the biogas production process in real-time. This research includes the development of biogas production equipment and monitoring tools, implementation, testing and analysis of results. It is hoped that the results of this research can increase the operational efficiency of biodigesters and reduce environmental pollution by using biogas technology. In an effort to maximize efficiency in biodigester operation, technology is needed that is able to combine various important parameters in real-time. One of the technologies used is methane gas, ultrasonic and temperature monitoring technology. This technology has an important role in calculating the levels of methane gas produced, measuring the air height in the biodigester, and maintaining operational temperatures. With this sophisticated monitoring technology, biodigester operators can ensure that the fermentation process takes place optimally, and prevent dangerous conditions from occurring due to the accumulation of methane gas or drastic changes in temperature.

Keywords: Biogas, IoT, Monitoring Technology, ESP8266, MQ-4, HC-SR04, DS18B20, Blynk