ABSTRACT

Rooftop solar power plants are often used, one of which is in School Building. Monitoring the performance of solar panels is very necessary to assess the performance of a solar panel in real environmental conditions. Therefore, the Internet of Things (IoT) system is used. Currently, the energy crisis is one of the problems that exist in Indonesia and the world. The electricity supply in Indonesia comes from the State Electricity Company (PLN), which relies on limited amounts of fossil energy. To overcome this problem, many renewable energy sources are used as alternatives that are quite effective in dealing with this problem. One of the renewable energy that can be used as the best alternative is solar energy. The technology that is currently being developed in the utilization of solar energy is Solar Power Generation on the roof. In order to be able to monitor remotely and in real time, you can also implement an IoT-based monitoring system. The Internet of Things (IoT) is a modern technology that connects computing machines with digital and mechanical devices and various other objects.

In this study, a solar power plant was designed which was placed on the roof of the school building and operated separately from the PLN supply. Preliminary analysis of the simulation results shows that this project is socially beneficial for the community. This design is expected to be used as a model in the development of renewable energy Solar Power Systems (PLTS). This study aims to determine the planning of PLTS as renewable energy in meeting electricity needs in school buildings, Knowing how the PLTS monitoring system works, also providing a new technique for direct and real time monitoring. The result of this monitoring system is that measurements from each sensor can be processed directly and displayed in graphical form in real time conditions and can monitor the performance remotely via the internet.

Keywords: Internet of Things (IoT), monitoring, solar panel, off-grid.