

ABSTRACT

*Name : Wahyuni Rachman
Study Program : Electrical Engineering
Title : Planning for an Uninterruptible Power Supply with a Solar Power Plant Power Supply in the Electrical Engineering Lecture Building Siliwangi University*

In the Electrical Engineering Lecture Building of Universitas Siliwangi, a stable power supply is crucial to support the operation of facilities such as computer, communication, and security systems. However, limitations in the electricity supply from PLN often cause rotational blackouts, disrupting building activities. To address this issue, a Solar Power Plant was designed as a power source for the Uninterruptible Power Supply, providing backup energy from solar panels when PLN electricity is interrupted, before the generator becomes active. The design results show that for installed loads, a PLTS system with a capacity of 3.2 kWp can charge five batteries, each with a voltage of 36 volts and a current of 50 Ah. The UPS system supported by PLTS can act as a temporary power source for the building's electricity for 15 minutes. Meanwhile, for measured loads, a PLTS system with a capacity of 2.8 kWp can charge four batteries with a voltage of 36 volts and a current of 50 Ah, serving as a temporary power source for the building's electricity for 15 minutes. This system is expected to ensure a reliable power supply and prevent damage to electronic devices during power outages.

Keywords: Power Load, Solar Power Plant, Uninterruptible Power Supply.