DESIGN AND CONSTRUCTION OF HYBRID POWER PLANT FROM PLTS AND PORTABLE PLTB

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ABSTRACT

Solar Power Plants (PLTS) and Wind Power Plants (PLTB) have become the main solution in an effort to reduce dependence on fossil energy sources and reduce carbon footprints. However, the challenge in implementing PLTS and PLTB is the limitations in their mobility and flexibility. Therefore, an innovative approach in the form of portable hybrid PLTS and PLTB has become the main focus of this study. This study discusses the development and implementation of portable hybrid PLTS and PLTB as an efficient and environmentally friendly alternative to meet energy needs in remote locations, isolated areas, and in emergencies. Portable hybrid PLTS and PLTB integrate photovoltaic and wind turbine technologies with an easily transportable energy storage system. With a compact and portable design, this system can be quickly installed and operated at the desired location. This research successfully implemented a portable hybrid PLTS and PLTB with a battery capacity of 7.5 Ah, a 30WP solar panel, 1.65A and 12V-24V and a 1.5A, 30W and 12V-24V PLTB generator, charging the battery with a time of 1 hour 30 minutes if the weather is sunny with an average current of 0.92A capable of charging the battery quite quickly.

Keywords*: Generator, Hybrid, Portable, Location*