

ANALYSIS AND DESIGN OF A PAIRY WATERING SYSTEM USING OFF GRID PLTS IN KARANGASEM VILLAGE, CIREBON DISTRICT, WEST JAVA

Farhan Hidayatullah

*Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : hidayatullahf47@gmail.com*

ABSTRACT

The problem faced by farmers in Karangasem village, Cirebon district, West Java, is that watering the rice fields generally uses diesel fuel or petrol, which is wasteful of watering costs. The need for electrical energy for watering rice fields is very necessary so that farmers can save costs and not be too burdened with fuel costs for watering rice fields. One solution to overcome the electricity problem in watering rice fields in Karangasem village, Cirebon district, West Java is to provide a renewable energy source that is environmentally friendly and easy to find. Solar energy is an alternative for the electricity system for watering rice fields and by using solar energy we can utilize this energy into electrical energy by using solar panels and an off grid electrical system. Therefore, in this research, an analysis of the design of a rice watering system using off grid solar power is proposed. Based on the results of prototype testing, it can be concluded that the design of a prototype system for watering rice fields using off grid PLTS in Karangasem Village, Cirebon Regency, West Java, which uses 1 panel produces an average power of 22.47 Watts. This power value is in accordance with the expected power of each panel based on the results of the analysis of rice field needs and 29 50 WP solar panels are needed with not maximum power, whereas with maximum power 17 50 WP solar panels are needed.

Keywords: *PLTS, Solar Panels.*