

DEVELOPMENT OF RENEWABLE ENERGY HYBRID TRAINING KIT BASED ON SOLAR PANELS AND WIND POWER AS GREEN TECHNOLOGY EDUCATION

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ABSTRACT

The wealth of energy resources, especially new and renewable energy sources (RE) is very potential in Indonesia. It is necessary to think about using it as an alternative energy, replacing and reducing the role of oil and coal fuels in energy consumption in Indonesia. This is closely related to welcoming the 2030 Sustainable Development Goals (SDGs). Yogyakarta State University as an educational institution is obliged to instill the importance of using renewable energy to students and to Vocational High School partners. Currently, in facing global competition in the era of the industrial revolution 4.0, competence regarding renewable energy as a form of Green Technology is needed by the global industry.

The research aims are to develop a renewable energy hybrid trainer based on solar panels and wind power as green technology education and to determine the feasibility/validation of the product being developed. The kind of research is development research. This research was conducted based on the ADDIE approach. The ADDIE model is used to develop a renewable energy hybrid trainer which consists of 5 stages, including: a) Analyze b) Design, c) Development, d) Implementation, e) Evaluate.

The research results showed that a hybrid renewable energy trainer based on solar panels and wind power can be used as green technology education. The results of the trainer kit feasibility test showed that the trainer kit was considered very feasible to use with a percentage of 91.29% in terms of motivation, 90.5% in terms of convenience, and 87.75% in terms of material.

Kata Kunci: Renewable Energy; Hybrids; Solar panel; Wind; Green Technology