

Experimental Study of C4-13 Crossflow Type Microhydro Turbine at

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ABSTRACT

Indonesia is a developing country that cannot be separated from the use of energy. Indonesia is also a country with quite high natural resource energy potential, but currently it still tends to use the availability of fossil fuels. On the other hand, we are also faced with a situation of depleting reserves of fossil energy sources and increasing environmental damage due to the use of fossil energy. Utilization of renewable energy using micro-hydro turbines is the right choice, apart from only relying on fossil fuels. The turbine located in the Jember State Polytechnic engineering laboratory can be used as reference material for the development of micro hydro turbines, especially the C4-13 Crossflow type. Therefore, this research was conducted to increase knowledge about the Crossflow type C4-13 microhydro water turbine and to analyze how much power is generated by this type of turbine, to find out what effect the valve opening and load has on the turbine, to find out what effect the valve opening and torque have on the power generated by the turbine. This study uses a data collection method by adding the load on the turbine pulley with 10 load variations and 5 valve opening variations, by producing the highest turbine power at 18 valve openings with the generated power of 73,91 Watt, and the smallest power at 10 rotation valve openings of 20,49 Watts.

Keywords : PLTA, Turbine, Crossflow, Generating Power