Studi Potensi Pembangkit Listrik Tenaga Mikrohidro (PLMTH) Di Sungai Kali Jompo, Sukorambi Jember (*Study of the Potential of Micro-hydro Power Plants (PLMTH) in Kali Jompo River, Sukorambi Jember*)

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ABSTRACT

Micro Hydro Power Plant (PLTMH) is a power plant that utilizes river flow or irrigation flow as a source of energy to drive turbines and rotate generators with a capacity of less than 100 watts. PLTMH is a relatively more efficient power plant with lower construction, operation, and maintenance costs, and is easier to implement. The Kalijompo Watershed (DAS) in Klungkung Village, Sukorambi District, Jember Regency, East Java, has significant potential for micro hydro energy due to its mountainous and hilly topography. The research method used in this study is a combination of measurement, observation, and survey methods at the site. In this study, actual discharge measurements were conducted for 1 day with 10 segments as a comparison of actual and annual discharge, which will be processed. The actual discharge measurement resulted in 0.34 m3/s, and the annual discharge was 0.30 with a reliability of 86%. Therefore, the power that can be generated by the river using half of the reliable discharge data of 0.15 m3/s, an effective head of 4.716 meters, using a 3-phase generator with an efficiency of 0.9, and a crossflow turbine with an efficiency of 0.8, is approximately 4991 W or 4.9 kW.

Key Words : Crossflow, *Head*, *mainstay water discharge, Power plant*, Turbine.