

***Performance Evaluation Study of Micro-Hydropower Plant Unit 2 in Andung
Biru Village, Probolinggo Regency***

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ABSTRACT

Micro Hydropower Plants (MHPs) are renewable energy systems that utilize flowing water to generate electricity. Micro Hydropower Plant Unit 2 in Andung Biru Village, Probolinggo Regency, has been operating for more than 15 years; therefore, its performance needs to be evaluated. This study aims to evaluate the performance of the plant based on the condition of its main components, hydropower potential, and operational performance. The research employed field observations, direct measurements, and documentation. The collected data included river discharge, effective head, and electrical parameters such as voltage, current, and generator output power. The data were analyzed to determine the hydropower potential and the operational condition of the plant. The results indicate that most of the plant components are still in good condition. The average river discharge of 0.5642 m³/s shows that the available water resources remain adequate for electricity generation. However, leakage in the penstock joints and minor damage to civil structures were identified, indicating the need for regular maintenance to maintain optimal plant performance.

Keywords: *Micro Hydropower Plant, performance evaluation, renewable energy, river discharge, hydropower potential.*