

**Studi Kelayakan Pembangkit Listrik Tenaga Mikrohidro
di Desa Bayu Kecamatan Songgon Banyuwangi** (*Feasibility Study Of a Micro-
hydro Power Plant In Bayu Village, Songgon Sub-District, Banyuwangi*)
Siti Diah Ayu Febriani, S.Si., M.Si. (Dosen Pembimbing Skripsi)

Chico Pangihutan Purba
*Renewble Energy Engineering Study Program
Department Of Engineering*

ABSTRACT

Micro Hydro Power Plant (PLTMH), is an implementation of the green energy initiative, namely encouraging renewable energy. Bayu Village, Songgon District, Banyuwangi Regency, East Java has hydropower resources that have not been utilized optimally. Meanwhile, electricity needs for tourism and agriculture require an electricity supply. The aim of the research is to analyze MHP technically and economically which can be used for sustainable integrated business operations. The research method begins with technical data collection, technical analysis and economic analysis in the development of PLTMH. Water flow power with a falling height (head) and a water discharge of 0.7 m³/s has the potential to generate electricity with a crossflow turbine. The results of the research on the installation of the PLTMH image have a working power of 16,9 kWatt with a head of 4 m with a flow rate of 700 l/sec. Direct economic analysis with capital costs of IDR 235,300,000 (10 years), calculating the amount of production per day of 16,9 kW in 1 year of 103.630 kW, operational and maintenance costs of IDR 11,765,000, the HP per kWh is IDR 340,5. The cash flow calculation for the construction of the PLTMH is IDR 36.462.515, resulting in an estimated payback period of 6 years and 4 months. PLTM is used to provide cheap and environmentally friendly electrical energy supplies to meet operational needs.

Key Words: *Cashflow, Crossflow, Payback Period, PLTMH, Turbine.*