Design of a Low Head Microhydro System for Electric Power Generation

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ABSTRACT

A low head microhydro electric generating system was fabricated locally and designed based from previous researches and a commercially available water turbine. Axial turbines with different blade numbers were evaluated at different heads and varied flow rates. A generator was matched and a test rig designed to simulate actual flow in a body of water. Results showed that electricity can still be generated in a system with less than 1.5 m head. Highest power generated was 217 watts for the 4-bladed turbine and 148 watts for the 6-bladed turbine.

Keywords: *hydro power, microhydro, renewable energy, water turbine, electricity*

Abbreviations: *AC – alternating current, RPM – revolution per minute, liters per second – Ls^{-1}, watts – W, kilowatts – kW, microhydro power – MHP, megawatts – MW, total dynamic head – TDH*

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