

***THE EFFECT OF THE NUMBER OF GENERATOR WINDINGS FROM A  
MOTORCYCLE COIL ON THE VOLTAGE AND OUTPUT CURRENT  
VALUES OF A SMALL-SCALE WATER ENERGY CONVERSION  
PROTOTYPE.***

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***ABSTRACT***

*This study aims to analyze the effect of the number of turns of a motorcycle spool on the voltage, current, power, and efficiency of a small-scale hydroelectric power plant prototype. The method used is an experiment with variations of 30, 35, and 40 turns at a constant water discharge of 8 L/second and a head of 1 meter. The results showed that increasing the number of turns increased the output voltage and power. At 30 turns, a voltage of 99.2 V and an efficiency of 10.96% was obtained, at 35 turns 115.4 V and 18.15%, and at 40 turns 119.93 V and 19.39% as the best results. However, the addition of turns caused a decrease in turbine rotation. It was concluded that the number of turns significantly affected generator performance, with the 40-turn configuration providing the most optimal results.*

***Keywords*** : *Prototype, Power Efficiency, Hydroelectric Power Plant, Winding Variation*