

**PICO-HYDRO POWER GENERATION USING DUAL PELTON  
TURBINES AND SINGLE GENERATOR**

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## **ABSTRACT**

This paper presents a Pico-hydro generation system is the effective way to help the remote communities by generates electricity using water as a main source. Therefore, the main objective of this project is to introduce the green technology for the society in order to reduce the cost of fuel consumption. Green technology as an alternative energy whereas it is cheap, effective and reliable. It can reduce sources of fuel, capital costs and pollution. Furthermore, the idea of this project is to generate electricity by develop a prototype of pico-hydro generation system that produce low capacity to be used in rural communities. Generally, this project focused on designing and producing a pico-hydro system that can be used for small capacity equipments such as motor and bulb. Besides, this project able to analyze the output of generator based on the rotation of turbine. Water flow in the high-pressure PVC pipe has potential to drives the turbine where it is connected with a generator to convert mechanical energy to electrical energy.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 BACKGROUND OF STUDY**

Hydroelectricity is an electricity using the energy from moving water. It is recognized as a green technology because using renewable energy source which is water. The amount of electricity is determined by the volume of water flow and the head of water. In other word, the greater the flow and head, the more electricity generated. Hydroelectric power is a technology for generating electricity from the movement of water through rivers, streams, and tides.

Water is passed through a conduit to turbine where it strikes the turbine blades and causes the shaft to rotate. To generate electricity, the shaft is connected to a generator that converts the mechanical energy into electrical energy. The power is step up by generator transformer and transmitted to the transmission line. However, for small capacity of hydropower does not need to transmitted to the power lines and only supply for a small community. Hydropower generation has several types such as large, medium, small, mini, micro and Pico as shown in Table 1.1 [2].