

## **ABSTRACT**

*This small water power plant or micohydro is very efficient for the surrounding community where electrical energy in the current era is needed as in rural areas, mountains and around the streets still not reached by the State Electricity Company (PLN). With this, the utilization of renewable energy is very necessary which is known that this renewable energy can be utilized continuously which is available in nature. With this micohydro power plant, namely to support infrastructure in the form of street lighting facilities for the surrounding community.*

*Archimedes turbines work by converting the potential energy of water into usable mechanical energy. Basically, this turbine consists of a wheel with curved blades mounted on a horizontal shaft. with 4 blades of PVC material involves the use of a turbine wheel with curved blades made of PVC pipe with a distance between blades of 40cm. The turbine is designed to utilize the flow of water flowing through a water cross-section channel. As water flows through the PVC blades, the water pressure causes the turbine blades to rotate. The rotation of the turbine blades produces mechanical energy that can be utilized to drive a generator or other machine.*

*Measurement of turbine rotation speed is carried out at a water speed of  $\pm 0.4$  m / s using sound with loading reaching 5 - 30 watts. The results of the experiment obtained a maximum voltage of 22.2 V with a water speed of  $\pm 0.4$  m / s at a turbine shaft rotation of 216 rpm at the same discharge and turbine shaft rotation.*

*Keywords: Micohydro, Archimedes, Generator, Turbine*