Micro hydro is a small scale hydropower power plan. The electric power generated by micro-hydro power plants usually less than 100 kW. If it compared with the generation of large-scale hydroelectric, micro hydro’s costs are not too large. Therefore the uses of micro hydro power plants are very suitable to be applied in areas throughout the village and generate electricity to light a village / small scale region.

Padi Pomahan irrigation area consists of Padi canal as primary canal with Jemanik and Gondang canal as secondary canals. Gondang secondary canal has a minimum discharge of 53 liters / sec during the dry season and a maximum discharge of 795 liters / sec during the rainy season. At the secondary canal Gondang there are 6 drop structures with different elevation 15 meters for 180 meters along the canal. With that different elevation and discharge channels, the Gondang secondary canal is potentially be used as micro-hydro power.

From the operational data of irrigation channels for last 10 years and list building elevation of drop structure obtained discharge of 175 liters / sec and the effective height of 13.741 meters. To transfer the available discharge of water from canal to turbine used pipe with 14” of diameters and 8 mm of thickness. Turbine used is a cross flow turbine type T15 300,
so that the resulting maximum power of 16.378 kW and energy per year up to 136,794.99 kWh. With the PLTMH is expected to provide benefits and value to the environment surrounding the canal. Furthermore, the area around the canal is expected to be able to self-sufficient in terms of electricity demand.

Keywords: Irrigation canal, potential, discharge, elevation, micro hydro