

# **RECYCLED MICRO HYDROPOWER GENERATION USING HYDRAULIC RAM PUMP (HYDRAM)**

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## **ABSTRACT**

A micro-hydropower plant capable of generating about 15 kW from falling water for a housing estate or personal property that is not served by the electrical grid is presented. Three surface tanks, one underground tank, a turbine generator set and one pump with associated pipes constitute the micro hydropower plant. A hydraulic ram pump is used to increase the head of the falling water. The flow rates of water out of tanks and pumping rate of water into a tank are designed to operate optimally. In order that the flow rates are maintained constant, controlled actuator is designed to activate the pump as the need arises while flow regulator is fitted in another tank to keep the flow rate at a predetermined value. The underground tank is made to collect rain water and is capable of meeting the water need of the micro hydropower plant for the off rain periods. The micro hydropower plant can easily be adapted for remote environment since most of the components including the ram pump can be fabricated locally.

**KEYWORDS:** Micro-Hydropower, Hydraulic Ram Pump, Flow Rate, Recycled