

Double Pychohydro Design As An Effort To Improve Pelton Turbine Performance

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ABSTRACT

Many ways to fulfill electricity needs that were thrived, either from technology or the optimization of new potential energy for generating electricity. The PLTPH development is a solution for fulfilling electricity needs to be applied at the villages that have not been reached by government. One of the purposes of this research is to fulfill electricity needs with making pelton turbine and for knowing the performance of influence parameter such as the amount of pelton turbine runner against the performance that will have been generated. The research was started at 7 September 2020 at Halmet Gumuk Baung, Village Sukerono, Sub-District Kalisat District Jember with utilizing flow from alkon pump that would be watering the fields. The method used in this research was an experimental method with the making of turbine based on potential, and then the turbine made would be tested to search the amount performance generated. The research resulted that the amount of runner influenced against turbine performance generated with the measure of turbine rotation, voltage, frequency, torsion, and turbine power reduced due to the addition of power resistance on generator. The best amount of runner is double turbine (2 runner) with the voltage reached 72,6V, turbine rotation 170 rpm, current 0,3A, frequency 31,5Hz, torsion 7,67 Nm, and power turbine 136,45 watt using LED light resistance 90 Watt.

Keywords: Energy needs, pelton turbine, Runner, Performance