Analisis Transmisi Sabuk Datar dan Puli Akibat Perubahan Debit Air pada Pembangkit Listrik Tenaga Mikrohidro di Perkebunan Durjo Jember (*Transmission Analysis of Flat Belts and Pulleys Due to Change of Water Discharge on Microhydro Power Plant in Durjo Jember Plantation)*

Arifatul Kamila
Renewable Energy Engineering Study Program
Engineering Department

ABSTRACT

Indonesia is rich in natural resources both in the form of biological resources, animal and energy sources. One source of energy that is promising to be utilized is hydro power. The form of hydro power utilization is microhydro power plant such as microhydro at Durjo Jember Plantation. Transmission of belts and pulleys in the microhydro at Durjo Jember Plantation often had slippage due to changes in water discharge. The results of this research showed the value of water discharge between 0.10-0.17 m3 / s and the slip value of 49-76%. The water discharge affects the number of pulley's number of rounds. The slip is analyzed because the follower pulley diameter is not proportional to the diameter of the pilot which is much larger, so the speed ratio becomes unbalanced and gives rise to slip. The existence of this slip also causes the power generated microhydro can not be maximized. The recommendations of this research are turbine replacement in accordance with the water discharge and height of head, and increase the size of the follower pulley diameter.

Keywords : *water discharge, microhydro, pulley, belt, slip*