

ABSTRACT

In this final project has been discussed about the effect of water flow rate, the number of blades and the gap to the optimal power generated by the turbine. Savonius turbine has been designed with diameter of end plate is 42 cm, height of blade is 24 cm, and diameter of shaft is 1 cm. the profile of blade is half tube, using PVC material. While the end plate and the shaft using steel material. The testing location is in PLTA Bengkok Dago Atas, Bandung, West Java. On testing obtained 5 variations of water flow velocity is equal to 1,0 m/s, 1,1 m/s, 1,2 m/s, 1,3 m/s and 1,4 m/s. From the result obtained the high power is 3,908546 W at speed 1,4 m/s, were generated by the turbine with 4 blade and 2 cm of gap. The highest torque is 0,66 Nm generated by the turbine with 4 blade and 2 cm of gap. For the highest C_p is 0,071079594 and highest TSR is 0,951202293 are also generated by the turbine with 4 blade and 2 cm of gap.

Keywords: Savonius Turbine, the profile of turbine, test result.