DESIGN OF SAVONIUS TYPE U LEVEL WIND TURBINE USING TWO TUBES

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ABSTRACT

Efforts to search for alternative energy sources other than fossils encourage researchers in various worlds in various countries to seek other energy sources that we know today as renewable energy. Bayu Power Plant (PLTB) is a renewable energy that is sustainable, environmentally friendly and much researched and applied after solar energy. PLTB can be an alternative solution because it can meet the growing demand for electricity. In this final project research the theme of designing a vertical wind turbine type of savonius with a variation of the number of stages on the performance of the savonius wind turbine. Tests are carried out using variations in wind speed, namely 6.3m / s; 7,3m / s 7,6 m / s in testing without generator or using generator and using single stage and dauble stage turbine arrangement with the addition of angle variation. The Savonius wind turbine with the best performance with a Cp value of 6.03% for a wind speed of 7.6 m / s is owned by a single stage turbine and for a single stage turbine rotational speed is owned by a single stage turbine at a wind speed of 7.6 m / s, while the maximum power that can be generated at wind speeds of 7.6 m / s is owned by a 45-angle double stage turbine variation of 9.23 watt.

Keywords: Savonius, Double stage, Wind turbine, Performace.