

Guide to the Performance of Vane Angle Variation on Wind Turbine Performance Savonius Type U

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ABSTRACT

The purpose of this study was to determine the effect of adding a guide vane or deflector on the performance of the Savonius Type U wind turbine as an effort to improve the performance of the Savonius Type U wind turbine. This research is a type of experimental research, including the addition of a guide vane or wind direction consisting of 3 variations of the pitch angle on the guide vane, including 30 °, 60 ° and 80 ° with variations in wind speed using a variation of the distance of 150 cm, 180 cm and 200 cm from the source. wind in the form of a blower to the Savonius Type U wind turbine by testing using a generator and without a generator and comparisons with the data without using a guide vane on the Savonius Type U wind turbine. The observed and measured factors are wind speed, power, rpm (rotation per minute), torque and Cp (coefficient of power). The results of the experimental research carried out obtained maximum data results on the Savonius Type U wind turbine on the variation of the addition of a 40 ° pitch angle guide vane with a distance of 150 cm, an average wind speed of 7.6 m / s to 7.9 m / s with a turbine rotation. equal to 218.1 rpm the power generated is 61.70 Watt with a Cp of 0.88%, torque of 3.46 Nm using a load of 12 Watt LED lights.

Key words: Wind Steering, Guide Vane, U Type Savonius Turbine