Triangular Fin Design For Horizontal Axis Wind Turbine

Ahmad Fahriannur, ST., MT. *as Thesis Adviser*

Putri Nuril Balqis

Study Program of Renewable Energi Engineering

Majoring of Engeneering Departement

ABSTRACT

Wind Power Plant (PLTB) has enormous potential in the field of long-term energy that can be used as an alternative to energy needs. The abundant wind is very unfortunate if it is not used properly. Windmills are an alternative tool that can be used for the utilization of wind energy. Horizontal axis wind turbines have components that are very important to operate a windmill properly. One of its constituent components is the tail (fin). The tail (fin) is needed to produce a fast and stable response according to changes in wind direction, it is necessary to design and assemble the fin in order to produce a maximum response in accepting changes in the direction of the wind. In the Renewable Energy Engineering Study Program, Jember State Polytechnic Engineering Department, a wind turbine fin made of aluminum plate has been installed on the lucas nulle generator, but the fin is not optimal in receiving wind. Thus the author wants to redesign the wind turbine fin using acrylic material and iron pipe on the tail rod. The research is a triangular fin design on a horizontal axis wind turbine. Performance tests were carried out using a blower as the wind source.

***Keywords** : PLTB, Wind Turbine, Fin, Wind Direction.*