

ABSTRACT

Wind energy is one of the uses of renewable energy that has great potential to be utilized. In Indonesia, the potential is great but it is underutilized. Utilizing small-scale wind energy, mini wind power plants can be designed on motorcycles by using a vertical axis turbine as a medium for converting wind energy into motion energy, where the rotation of the turbine is forwarded to a DC (*Direct Current*) generator, this generator produces electrical energy.

To find out how much electrical energy can be generated, it will be tested on a straight road without curves with speeds between 20 km/H, 40 km/H, 60 km/H at different times of 8 am, 11 pm, and 7 pm. In this study, it can produce the lowest value in the morning test with a motorcycle speed of 20 km/H with a generator voltage of 2.25V, generator current 0A, wind speed 3.67 m/s, turbine rotation 335 RPM. Meanwhile, the largest value that can be produced is at night testing with a motorcycle speed of 60 km/H with a generator voltage of 3.36V, generator current of 0.056A, wind speed of 12.06 m/s, turbine rotation of 850 RPM.

Keywords: Turbine, dc generator, portable power storage, motorcycle.