

Design a Micro-Scale Bayu Power Plant (BPP) with the Utilization of Honda GX200 Engine Exhaust Gas. Ahmad Fahriannur, S.T., M.T. (Chief Counselor)

Fani Fathuliah
Study Program of Renewable Energy Engineering
Majoring of Engineering

ABSTRACT

The Honda GX200 internal combustion engine is an engine used in high pressure spray machines, agricultural, industrial equipment, cultivators, generators and water pumps which can pollute the air because 40% of combustion in the engine is wasted as exhaust gas. The exhaust gas in the Honda GX200 engine has potential, namely wind speed that has not been utilized, so it is just wasted energy. This research aims to utilize wind speed from the exhaust gas of the Honda GX200 engine by creating a micro-scale Bayu Power Plant (BPP) that uses a Savonius type vertical wind turbine which can produce electricity for power bank chargers. The method used is an experimental method, with BPP testing at the rotation speed of the Honda GX200 engine, namely 1000 RPM, 1500 RPM and 2000 RPM. A micro-scale BPP has been successfully created and can generate power at any rotational speed of the machine used. The results of the tests carried out show that the BPP that was made was successful in generating the highest power at an engine rotation speed of 2000 RPM within 3 minutes, able to charge the power bank with a current of 0.84 Ampere, a voltage of 5.04 volts and a capacity charged to the power bank of 55 mAh.

Key words: Utilization, Exhaust Gas, Honda GX200 Engine, Power Plants.