ABSTRACT

Indonesia is an archipelago country that most of its territory is ocean. The oceans are natural wealth a source of livelihood for the residents living in the vicinity. Not just as a livelihood, the sea can also be used as an energy source. However, the use of the oceans as a source of energy is still little done. Availability of fuel are increasingly few in number and the price is expensive, the main issue for the people around, especially for fishermen, because the fishermen require fuel to drive the motor on the boat. While in Indonesia the sale of fuel oil had extremely soaring prices, so many fishermen who have difficulty and quit sailing.

Based on the authors will design the power plant as a source of energy that is used on a boat to produce electrical energy as a substitute for fuel oil. Utilization of the sea wave power as a pendulum to move the actuator. Generator mounted on the pendulum will generate electric current. The resulting electrical current generator will be stored in batteries and can be directly used in the DC load. The advantage of this power plant is due to a wave of sea water continues to move. In addition to the sea wave power is not unlimited, this system is also environmentally friendly because it does not produce harmful air emissions.

Results from this study is a wave power plant using a pendulum weighing 1.25kg with a length of 80cm pendulum poles, using eight pieces of gear to accelerate rpm, each of which has a gear that is different is 4 pieces of 60 gears, 1 fruit 40 gears, 1 piece 30 gears, 2 pieces of 10 gears, 1 piece 52 gears, menggunaka 2 pcs free wheel that has gears different ie 1 unit free wheel 16 gears and 1 free wheel 18 gears , each gear is connected to the chain, then the voltage generated from this tool is at 3.8451V and generate a power of 0,657W. From these results, the tool is expected to replace fossil fuels that have been used by fishermen as a power source for the motor on the boat.

Keywords: Energy source, power generation, pendulum, gears, free wheel