

ABSTRACT

Electrical energy is a very important one. Every necessities of life almost need this energy. In the daily needs such as a refrigerator, a lamp, and a phone. In the daily works such as computer, facsimile, and etc. Because of that importance, so that this this energy must always be available. Nowadays, there are so many kinds of electric power gain. For example, water power gain, air power gain, and coal power gain. But almost of that power gain is not efficient, not good for the environment, and the cost for making of that power plant is too expensive, like coal power gain which be used for 60% world electricity. The carbon emissions of this power gain can make an acid rain and air pollution. That profanation has been connected with global warming because of the chemical composition of the coal.

In this final project, the writer will devise a power plant which is efficient and good for environment, and it also can replace the other power plant which has a lot of lack. This power plant is Wave Power Gain System. Wave power gain system is a power gain which can make an electric power by using wave as the energy sources. This power plant use the kinetic energy of wave then it used to spin the generator which can produce an electric power. Wave in the sea will move the float up and down. This movement called harmonic move. The float is connected to a gear which its work is like a piston, and the gear will spin the generator by using a chain as the connector. Then the electric power is saved in a battery. The battery can be used for DC load or AC load. But before it used for AC load, the battery must connected to an inverter first. The advantages of this power plant is efficient because it used the moved of wave which can't be exhausted. Besides, this power plant is good for environment because it doesn't produce a dangerous emission. This is the small scale of power plant. The power of this power plant is 50 Watt.

The wave power plant using relay to stop the charging when the battery voltage reaches 13,8 volts. This power plant can generate an average voltage of 12,71 volts. Charging battery for 30 minutes creates an average battery voltage 0,02 volts. And efficiency of Battery Control Unit is 82%.

Keywords : Emission, inverter, harmonic motion